SIEMENS

Manufacturer Declaration

No. A5E47505541A
Rev. 002

Manufacturer:	Siemens AG
Address:	76181 Karlsruhe, Germany
Product description:	**Flowmeter** SITRANS F M MAG 1100 F Type 7ME6140-xxXab-cxxx X=A,B,C,D,G,H,J,M, N ; a=1,2 ; b=0,2,3 ; c=1,2 ; x= 0..9 or /oder A..Z

The product described above in the form as delivered is in conformity with the provisions of the following European Regulations:

1935/2004/EC Regulation (EC) No 1935/2004 of the European Parliament and of the Council on materials and articles intended to come into contact with food.

2023/2006/EC Commission regulation (EC) on good manufacturing practice for materials and articles intended to come into contact with food.

For each part of the material and/or article as described in the table below.

Component	*Material*	a=1 b=0 c=1	a=1 b=3 c=1	a=2 b=0 c=2	a=2 b=2 c=2
Liner	PFA	●	●		
Liner	Alumina			●	●
Gasket	FPM/FKM				●
Gasket	Flat gasket EPDM	●		●	
Gasket	Gasket EPDM-P		●		
Electrodes	Hastelloy C-276	●	●		
Electrodes	Platine			●	●
Adapters	Stainless Steel	●	●	●	●

Stainless steel elements are suitable for food contact according to EC Regulation 1935/2004 because they comply with the composition criteria of the decree of 13 January 1976 (French legislation).

This product shall not, in accordance with Regulation (EC) No 1935/2004, lead to unacceptable changes in the composition or alteration of the organoleptic characteristics of the food under normal and foreseeable conditions of use. Compliance is subject to the respect of storage conditions.

Digitally signed by Buzdugan Valeria
Date: 2021.08.05 23:23:06 EEST
Reason: MoldSign Signature
Location: Moldova

This declaration certifies the conformity to the specified directives but contains no assurance of properties.
The safety documentation accompanying the product shall be considered in detail.
Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie nach §443 BGB.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

Siemens Aktiengesellschaft: Vorsitzender des Aufsichtsrats: Jim Hagemann Snabe; Vorstand: Joe Kaeser, Vorsitzender; Roland Busch, Lisa Davis, Klaus Helmrich, Janina Kugel, Cedrik Neike, Michael Sen, Ralf P. Thomas
Sitz der Gesellschaft: Berlin und München, Deutschland; Registergericht: Berlin Charlottenburg, HRB 12300, München, HRB 6684
WEEE-Reg.-Nr. DE 23691322

SIEMENS

Manufacturer Declaration

No. A5E47505541A
Rev. 002

The purchase of raw materials intended to be used for parts that may come in contact with food is restricted exclusively from recognized suppliers and together with an appropriate material certificate. The traceability of components and sub-assemblies coming in contact with food is guaranteed by our quality management system according to ISO 9001.

Karlsruhe, 19.07.2019
Siemens Aktiengesellschaft

Volker Rissland,
Research & Development / Entwicklung
(Name, function)

i.V.
signature

Jürgen Pflaum,
Quality
(Name, function)

i.V.
signature

This declaration certifies the conformity to the specified directives but contains no assurance of properties.
The safety documentation accompanying the product shall be considered in detail.
Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie nach §443 BGB.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.

Siemens Aktiengesellschaft: Vorsitzender des Aufsichtsrats: Jim Hagemann Snabe; Vorstand: Joe Kaeser, Vorsitzender;
Roland Busch, Lisa Davis, Klaus Helmrich, Janina Kugel, Cedrik Neike, Michael Sen, Ralf P. Thomas
Sitz der Gesellschaft: Berlin und München, Deutschland; Registergericht: Berlin Charlottenburg, HRB 12300, München, HRB 6684
WEEE-Reg.-Nr. DE 23691322

DECLARATIE DE CONFORMITATE CE

Nr. 553-0032

Noi, ***EATON ELECTRIC SRL***

cu sediul in Bucuresti, sos. Bucuresti – Ploiesti nr. 42-44,
Baneasa Business & Technology Park, cladirea B2, et.3, sector 1, 013696

ca reprezentant unic in Romania al producatorilor din grupul Eaton,
in baza declaratiilor de conformitate emise de acestia,

declaram pe propria raspundere ca produsele (familia):

Eaton - Surge protective device

SPCT2-..,

(declarația de conformitate se aplica pentru toate tipurile enumerate in catalogul nostru actual de produse)

sunt realizate în conformitate cu buna practica inginereasca in materie de siguranta in vigoare in Uniunea Europeana, nu pun in pericol viata, sanatatea, securitatea persoanelor si a animalelor domestice, nu produc un impact negativ asupra mediului cu conditia instalarii si intretinerii in mod corespunzator, utilizarii in scopul pentru care au fost create, respectarii instructiunilor producatorului, standardelor specifice si a "bunelor practici ingineresti", si sunt conforme cu:

prevederile directivelor Uniunii Europene:

Low Voltage Directive 2014/35/EU

RoHS Directive 2011/65/EU

si cu standardele Europene armonizate :

EN61643-11/12

Bucuresti, Romania

25.04.2016

Razvan Sorescu

Quality, Environment, Health & Safety responsible

Gabriel Tache

Country Manager

Data de aplicare a marcajului CE: 2012

Nr. document: 553-0032 / 25.04.2016

MINISTERUL SĂNĂTĂȚII
INSTITUTUL NAȚIONAL DE SĂNĂTATE PUBLICĂ
NATIONAL INSTITUTE OF PUBLIC HEALTH

Str. Dr.A. Leonte, Nr. 1 - 3, 050463 Bucuresti, ROMANIA
Tel: *(+40 21) 318 36 20, Director: (+40 21) 318 36 00, (+40 21) 318 36 02, Fax: (+40 21) 312 3426

CENTRUL REGIONAL DE SĂNĂTATE PUBLICĂ BUCURESTI

Comisia pentru produse, materiale, substante chimice/ amestecuri si echipamente utilizate in contact cu apa potabila

Solicitant: SIEMENS SRL
Bd. Preciziei, Nr 24, Wes Gate Park, Cladirea H3, Sector 6, Bucuresti
Nr. Inregistrare la Registrul Comertului: J 40/6772/1995

NOTIFICARE
Nr. 10 CRSPB/13.02.2014

Comisia pentru produse materiale, substante chimice/ amestecuri si echipamente utilizate in contact cu apa potabila din Institutul National de Sanatate Publica/ Centrul Regional de Sanatate Publica Bucuresti, in baza Referatului tehnic de evaluare **Nr. 10 CRSPB/ Data 13.02.2014** decide ca urmatorul produs utilizat in contact cu apa potabila poate fi comercializat si utilizat in Romania, conform prevederilor legale in vigoare

□ Produs utilizat in contact cu apa potabila:

1.1 Denumirea comerciala a produsului utilizat in contact cu apa potabila:
Debitmetre Sitrans F MAGFLO tip: MAG 1100/1100F/1100HT, MAG 3100/3100P/3100HT; MAG 5100W; MAG 8000

1.2 Domeniul de utilizare: Produsul va fi utilizat pentru realizarea retelelor de alimentare cu apa potabila

1.3 Conditii de utlizare: La comercializare trebuie anexate informatii despre utilizarea produsului

□ Producatorul: SIEMENS AG

2.1 Adresa: F-67506 Hagenau CEDEX I IA SC Produktion1, Chemin de la Sandlach, Oestliche, Rheibruecken str. 50 DE 76187 Karlsruhe

2.2 Tara :Germania

Notificarea produsului utilizat in contact cu apa potabila se face in conformitate cu Ordinul ministrului sanatatii nr. 275/2012 privind aprobarea procedurii de reglementare sanitara pentru punerea pe piata a produselor, materialelor, substantelor chimice/ amestecurilor si echipamentelor utilizate in contact cu apa potabila, in baza art. 10 din Legea nr 458/2002 privind calitatea apei potabile, cu modificarile si completarile ulterioare.

Notificarea este valabila pe perioada in care nu se face nicio modificare in compozitia si calitatea produsului. Orice modificare a compozitiei si calitatii produsului duce in mod automat la anularea notificarii.

MEDIC SEF C.R.S.P.B
Dr. Florin POPOVICI

Presedinte Comisie,
Dr. Doina LUPULESCU

EU-Konformitätserklärung Nr. 2891001.CE.08
EU-Declaration of Conformity No.

Hersteller / *Manufacturer*: **PHOENIX CONTACT Development and Manufacturing Inc.**
Anschrift / *Address*: 586 Fulling Mill Road, Middletown, PA 17057-2966, USA

Produktbezeichnung / *Product description*: **FL SWITCH SFNB 5TX**
(Artikelbezeichnung, / *Article description*,
Artikel-Nr. / *Article-/Part no.*) **2891001**

Der obige Hersteller erklärt in alleiniger Verantwortung, dass das/die hier bezeichnete(n) Produkt(e) mit den wesentlichen Anforderungen der nachfolgend genannten Richtlinie(n) und deren Änderungsrichtlinien übereinstimmt / *The above manufacturer declares in sole responsibility, that the here specified product(s) is/are in line with the essential requirements of the following directive(s) and their delegated directive(s):*

2011/65/EU	**Beschränkung der Verwendung bestimmter gefährlicher Stoffe** **Restriction of the use of certain hazardous substances (RoHS)**
2014/30/EU	**EMV-Richtlinie (Elektromagnetische Verträglichkeit)** **Electromagnetic Compatibility Directive (EMC)**

Für die Beurteilung der Übereinstimmung wurden folgende einschlägige Normen herangezogen:
For evaluation of the conformity following relevant standards were consulted:

EN 55032:2012+AC:2013	EN 55032:2015+AC:2016	EN 61000-6-4:2007+A1:2011 *
EN 61000-3-2:2014	EN 61000-3-3:2013	EN 61000-6-2:2005+AC:2005
EN 50581:2012		

Ergänzende Informationen (z. B. Anmerkungen, Einschränkungen, etc.) zur Konformitätsbewertung:
Supplementary information (eg comments, restrictions, etc.) on conformity assessment:

Zertifikate einer benannten Stelle / *Certificates by a notified body:*

Anschrift / *Address*:

Referenz / *Reference*:

Anschrift / *Address*:

Referenz / *Reference*:

☒ Diese Erklärung gilt auch für die im Anhang aufgelisteten Produkte. (wenn angekreuzt)
This declaration also applies for the products listed in the annex. (*if marked with a cross*)

Diese Erklärung bescheinigt die Übereinstimmung mit den wesentlichen Anforderungen der genannten Richtlinie(n), enthält jedoch keine Zusicherung von Eigenschaften. Die Sicherheits- und Einbauhinweise der mitgelieferten Produktdokumentation sind zu beachten.
This declaration certifies the conformity with the essential requirements of the indicated directive(s), it does not, however, covenant any characteristics. The instructions for safety and installation of the enclosed product documentation have to be observed.

Middletown, 2019-06-07

Davis Mathews Business Unit Automation Infrastructure Vice President	David Skelton Development & Manufacturing Vice President & General Manager
Ansprechpartner / *contact person* [1]	Zeichnungsberechtigter / *authorized signatory*

Warnung: Dies ist ein Klasse A-Erzeugnis. In Wohngebieten kann es zu Störungen des Funkempfanges kommen. Der Betreiber soll entsprechende Schutzmaßnahmen treffen.
Warning: This is a Class A product. In a domestic environment it may cause radio interference, in which case the user may be required to take adequate measures.

[1] Ansprechpartner ist auch für die technische Unterlagen verantwortlich. / *Contact person is also responsible for the technical documentation.*

Anhang zur EU-Konformitätserklärung Nr. 2891001.CE.08
Annex on EU Declaration of Conformity No.
vom / dated 2019-06-07

Produktbezeichnung / *Product description*: **FL SWITCH SFNB 5TX**
(Artikelbezeichnung, / *Article description*,
Artikel-Nr. / *Article no.*) **2891001**

Artikel-Nr. / *Article no.*	Artikelbezeichnung / *Article description*
2891014	FL SWITCH SFNB 5TX-50PK
2891154	FL SWITCH SFN 5TX-DM
1071801	FL SWITCH SFNB 5TX-PNE

DANAK
PROD Reg.No. 7025

FORCE Certification

EC-Type Examination Certificate

Measuring Instrument Directive

Certificate number: DK-0200-MI001-001

Issued by FORCE Certification A/S, Denmark
EC-notified body number 0200

In accordance with The Danish Safety Technology Authority's statutory order no. 436 of 16th May 2006 with later amendments which implements the Directive 2004/22/EC of the European Parliament and Council of March 31st, 2004 on measuring instruments (MID) and later amendments.

Issued to: **Siemens Flow Instruments A/S**
Nordborgvej
DK-6430 Nordborg

Reference No.:	80.976-265/12
Type of instrument:	Coldwater meter, electro magnetic flowmeter
Type designation:	MAG5100W DN50-300 with MAG5000CT or MAG6000CT
Valid until:	Marts 30, 2017
Number of pages:	5, including appendix
Date of issue:	February 21, 2012
Revision no.:	1 - 2012

Approved by

Lars Poder
Certification Manager

Processed by

Michael Møller Nielsen
Examinator

The conformity markings may only be affixed to the above type approved equipment. The manufacturer's Declaration of Conformity may only be issued and the notified body identification number may only be affixed on the instrument when the production/product assessment module (D or F) of the Directive is fully complied with and controlled by a written inspection agreement with a notified body.

FORCE Certification A/S · Park Allé 345 · 2605 Brøndby · Denmark · Tel +45 43 26 71 77 · Fax +45 43 26 70 11 · cert@force-cert.dk · www.force-cert.dk

DANAK
PROD Reg.No. 7025

FORCE Certification

Appendix to

EC-Type Examination Certificate
Measuring Instrument Directive

Number: DK-0200-MI001-001
Issued by FORCE Certification A/S, Denmark
EC-notified body number 0200

Revision no. 1 - Change of installation requirement.

Applied standards and documents:
OIML R49: 2006

The instruments/measuring systems shall correspond with the following specifications:

Type designation

MAG5100W DN50-300 with MAG5000CT or MAG6000CT

Description
The construction consists of an electromagnetic flow sensor, MAG5100W, and a signal transmitter, MAG5000CT or MAG6000CT.

The design principle is, as for any electro magnetic flow sensor, that a constant pulsed DC electrical current through the coil circuit results in a magnetic field through the sensor bore with direction from coil to coil. When a conductive liquid passes through the magnetic field a differential DC voltage is introduced between the measuring electrodes.
The MAG5000CT and MAG6000CT signal converter operates at 3.125 – 12.5Hz depending on sensors size. All sensors are charged with 125mA constant current. The sensitivity of the sensors gives a nominal signal of 125 µV per m/s flow.

The sensor has a steel tube and steel flanges and the bore is fitted with an electrically insulating lining which is coned to optimise the velocity profile of the fluid. Between the lining and the steel tube is fitted coils which generate the magnetic field.

Only approved for cold water.

Technical documentation
FORCE Certification A/S File no. 80.970.6-004A/06, 80.976-086/09, 80.976-193/10 and 80.976-265/12.

FORCE Certification A/S · Park Allé 345 · 2605 Brøndby · Denmark · Tel +45 43 26 71 77 · Fax +45 43 26 70 11 · cert@force-cert.dk · www.force-cert.dk

Technical data

Instrument tested according to	:	OIML R49:2006
Software version	:	3.03
Verification tolerance	:	± 5% $Q_1 \leq Q < Q_2$ ± 2% $Q_2 \leq Q \leq Q_4$
Unit of measurement	:	Cubic metre
Temperature	:	0.1 - 30°C
Pressure	:	PN = 16 bar or PN = 10 bar or PN = 6 bar
Power supply	:	230 VAC
Environment class	:	E2, M1
Climatic class	:	-25...55°C, condensing, closed
Durability specification	:	10 years

SIZE	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200 (8")	250 (10")	300 (12")
"R" Q3/Q1	1000	1000	1000	1000	1000	1000	1000	1000	630
Q1 [m³/h]	0.063	0.10	0.16	0.25	0.40	0.63	1.0	1.6	2.5
Q2 [m³/h]	0.250	0.40	0.63	1.00	1.60	2.50	4.00	6.40	10.0
Q3 [m³/h]	63	100	160	250	400	630	1000	1600	1600
Q4 [m³/h]	78.75	125	200	312.5	500	787.5	1250	2000	2000

Above mentioned table describe the maximum specification of flow range. Other dynamic ranges are allowed if "R" is 10, 12.5, 16, 20, 25, 31.5, 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630.

and
Q1 ≥ values in table
and
Q2/Q1 = 1,6
and
Q4/Q3 = 1,25

FORCE Certification A/S · Park Allé 345 · 2605 Brøndby · Denmark · Tel +45 43 26 71 77 · Fax +45 43 26 70 11 · cert@force-cert.dk · www.force-cert.dk

Verification

Errors: Maximum permissible errors according to Directive 2004/22/EC of the European Parliament and Council of March 31, 2004 on measuring instruments (MID), Annex MI-001

Procedure: Test points and verification requirements according to OIML R49:2006

The water temperature range shall be 20 ± 10°C

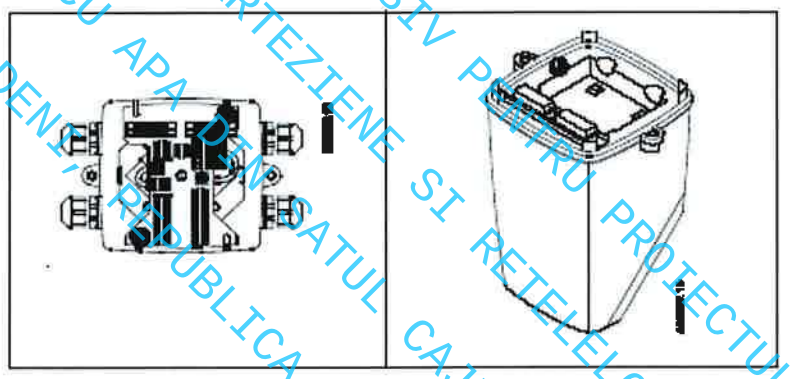
At least the following three flow rates shall be used for verification:

$Q_1 \leq Q \leq 1.1Q_1$ (5 %)
$Q_2 \leq Q \leq 1.1Q_2$ (2 %)
$0.9Q_3 \leq Q \leq Q_3$ (2 %)

Sealing

Internal sealing

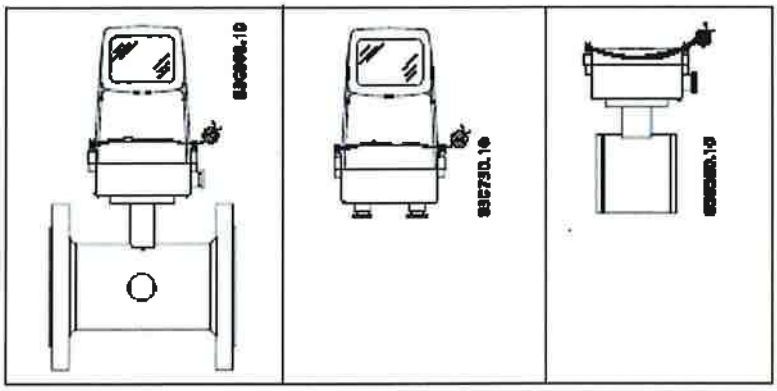
After setup of settings and calibration of the unit the hardware key is removed again. This locks the menu structure and the selected settings. The transmitter and sensor must then be sealed to prevent unauthorized access.The connection plate is sealed to prevent access to the SENSORPROM memory unit. (P) indicates locations of sealing



Installation

MAG 6000 CT is installed as shown in the instructions for a standard MAG 6000, except for the external sealing.

The external sealing is carried out as shown.



Installation

The product requires 0D of straight pipe upstream from the sensor and 0D of straight pipe downstream from the sensor.

The sensor can only be installed in a horizontal condition.

The signal transmitter can be fitted compact on the sensor or remotely with up to 3m of cable. Cable specification according to manufacturer (Siemens) specification.

Labeling and inscriptions

Manufacturer, type, year
Serial no.
EC-Type examination certificate number
Tmax and Pmax
Application temperature range
Power supply
Accuracy class
Software version
Unit of measurements: Cubic metre.
Direction of flow
Letter H, for the position

SIEMENS

SITRANS F M MAG6000/5100W CT

7ME6920-2YC11-1AA1

System no	7ME692 123456N123	Certification no:	DK-0200-MI001-001
DN50	EN 1092-1 PN16 PED	Accuracy:	Class 2 OIML R49
Meter orientation:	Horizontal (H)	Year:	2007
Environmental class:	E2,M1	Q3:	m3/h
Pressure max.	PN16 Temp.max 30°C	Q2/Q1:	
Software version	3.03	Q3/Q1:	
Amb. Temp.:	-25 to +55°C	CE	M07 0200
Supply:	115/230 VAC 50/60 Hz 17VA		

Siemens Flow Instruments A/S

Made in Denmark

EU-Konformitätserklärung Nr. 2866611.CE.04
EU-Declaration of Conformity No.

Hersteller / *Manufacturer*: **PHOENIX CONTACT GMBH & CO. KG**

Anschrift / *Address*: Flachsmarktstraße 8, D-32825 Blomberg, Germany

Produktbezeichnung / *Product description*: **TRIO-UPS/1AC/24DC/ 5**

(Artikelbezeichnung, / *Article description*,
Artikel-Nr. / *Article no.*) **2866611**

Der obige Hersteller erklärt in alleiniger Verantwortung, dass das/die hier bezeichnete(n) Produkt(e) mit den wesentlichen Anforderungen der nachfolgend genannten Richtlinie(n) übereinstimmt / *The above manufacturer declares in sole responsibility, that the here specified product(s) is/are in line with the essential requirements of the following directive(s):*

2011/65/EU	**Beschränkung der Verwendung bestimmter gefährlicher Stoffe** **Restriction of the use of certain hazardous substances (RoHS)**
2014/30/EU	**EMV-Richtlinie (Elektromagnetische Verträglichkeit)** **Electromagnetic Compatibility Directive (EMC)**
2014/35/EU	**Niederspannungs-Richtlinie** **Low Voltage Directive (LVD)**

Für die Beurteilung der Übereinstimmung wurden folgende einschlägige Normen herangezogen:
For evaluation of the conformity following relevant standards were consulted:

EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013

EN 61000-6-2:2005

EN 61000-6-3:2007+A1:2011

EN 61000-3-2:2014

EN 50581:2012

Weitere Informationen (z. B. Dokumente, Prüfberichte, Einschränkungen, etc.) zur Konformitätsbewertung:
Additional information (for example documents, test reports, restrictions etc.,) of the conformity assessment:

Zertifikate einer benannten Stelle / *Certificates by a notified body:*

Anschrift / *Address*:

Referenz / *Reference*:

Anschrift / *Address*:

Referenz / *Reference*:

Die letzten beiden Ziffern des Jahres in dem die CE-Kennzeichnung angebracht wurde: 09
The last two figures of the year in which the CE marking was applied:
(nur einzutragen, bei der Niederspannungsrichtlinie / *only to be entered on the low voltage directive*)

☐ Diese Erklärung gilt auch für die im Anhang aufgelisteten Produkte. (wenn angekreuzt)
This declaration also applies for the products listed in the annex. (if marked with a cross)

Diese Erklärung bescheinigt die Übereinstimmung mit den wesentlichen Anforderungen der genannten Richtlinie(n), enthält jedoch keine Zusicherung von Eigenschaften. Die Sicherheits- und Einbauhinweise der mitgelieferten Produktdokumentation sind zu beachten.
This declaration certifies the conformity with the essential requirements of the indicated directive(s), it does not, however, covenant any characteristics. The instructions for safety and installation of the enclosed product documentation have to be observed.

Blomberg, 2018-01-08

i. A. Werner Meyer
Werner Meyer
Business Unit Power Supplies
Manager Quality Engineering & Testing
Ansprechpartner / *contact person*

i. A. Hartmut Henkel
Hartmut Henkel
Business Unit Power Supplies
Head of Marketing & Sales
Zeichnungsberechtigter / *authorized signatory*

SIEMENS

EU Declaration of Conformity
EU-Konformitätserklärung
EU-Déclaration de Conformité

CE

No. A5E31813160A/008

Manufacturer: *Hersteller:* *Fabricant:*	**Siemens AG**
Address: *Anschrift:* *Adresse:*	DE-76181 Karlsruhe
Product description: *Produktbezeichnung:* *Identificateur:*	**Flowmeter / Durchflussmessgerät / Débitmètre** **SITRANS F M MAG 1100, MAG 1100 HT, MAG 1100 F, MAG 1100 (Ex), MAG 3100, MAG 3100 HT, MAG 3100 P, MAG 3100 (Ex), MAG 5100W** **Type / Typ 7ME6ab0-cdxxx-xexx Zxx** used with transmitter MAG 5000, MAG 5000 CT, MAG 6000, MAG 6000 CT, MAG 6000 I

The product described above in the form as delivered is in conformity with the provisions of the following European Directives:
Das bezeichnete Produkt stimmt in der von uns in Verkehr gebrachten Ausführung mit den Vorschriften folgender Europäischer Richtlinien überein:
Le produit mentionné ci-dessus, tel qu'il est livré, est conforme aux dispositions des Directives Européennes suivantes :

2014/30/EU EMC	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to electromagnetic compatibility *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la compatibilité électromagnétique*
2014/35/EU LVD	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung elektrischer Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen auf dem Markt* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la mise à disposition sur le marché du matériel électrique destiné à être employé dans certaines limites de tension*
2014/34/EU ATEX	Directive of the European Parliament and the Council on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten für Geräte und Schutzsysteme zur bestimmungsgemäßen Verwendung in explosionsgefährdeten Bereichen* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant les appareils et les systèmes de protection destinés à être utilisés en atmosphères explosibles*
2014/32/EU MID	Directive of the European Parliament and the Council on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Messgeräten auf dem Markt* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la mise à disposition sur le marché d'instruments de mesure*

Annex A is integral part of this declaration..
Anhang A ist integraler Bestandteil dieser Erklärung.
L'annexe A fait partie intégrante de la présente déclaration

This declaration certifies the conformity to the specified directives but contains no assurance of properties.
The safety documentation accompanying the product shall be considered in detail.
Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie nach §443 BGB.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.
La présente déclaration atteste la conformité aux Directives citées. Elle n'est pas assimilable à un descriptif justifiant certaines propriétés.
La documentation relative à la sécurité accompagnant le produit doit être examinée en détail.

SIEMENS

EU Declaration of Conformity
EU-Konformitätserklärung
EU-Declaration de Conformite

No. A5E31813160A/008

2014/68/EU PED	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la mise à disposition sur le marché des équipements sous pression*
2011/65/EU RoHS	Directive of the European Parliament and the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment. *Richtlinie des Europäischen Parlaments und des Rates zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräte.* *Directive du parlement Européen et du relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques*

Karlsruhe, 03.12.2019
Siemens Aktiengesellschaft

Volker Rissland,
Research & Development / *Entwicklung / Développement*
(Name, function / *Name, Funktion, / Nom, fonction*)

i.V.

Signature / *Unterschrift / Signature*

Jürgen Pflaum,
Quality / *Qualität / Qualité*
(Name, function / *Name, Funktion, / Nom, fonction*)

i.V.

Signature / *Unterschrift / Signature*

Anhang A ist integraler Bestandteil dieser Erklärung
Annex A is integral part of this declaration
L'annexe A fait partie intégrante de la présente déclaration

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Zusicherung von Eigenschaften.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.
This declaration certifies the conformity to the specified directives but contains no assurance of properties.
The safety documentation accompanying the product shall be considered in detail.
La documentation relative à la sécurité accompagnant le produit doit être examinée en détail.

SIEMENS

Annex A to the EU Declaration of Conformity
Anhang A zur EU-Konformitätserklärung
Annexe A de la Déclaration de conformité

No. A5E31813160A/008

Product description:
Produktbezeichnung:
Identificateur:

Flowmeter / Durchflussmessgerät / Débitmètre
SITRANS F M MAG 1100, MAG 1100 HT, MAG 1100 F, MAG 1100 (Ex), MAG 3100, MAG 3100 HT, MAG 3100 P, MAG 3100 (Ex), MAG 5100W
Type / Typ 7ME6ab0-cdxxx-xexx Zxx
used with transmitter MAG 5000, MAG 5000 CT, MAG 6000, MAG 6000 CT, MAG 6000 I

Conformity to the Directives indicated on page 1 is assured through the application of the following standards (depending on versions):
Die Konformität mit den auf Blatt 1 angeführtn Richtlinien wird nachgewiesen durch die Einhaltung folgender Normen (variantenabhängig):
La conformité aux Directives indiquées sur la page 1 est garantie par l'application des normes suivantes (selon les versions) :

Direktive *Richtlinie* *Directive*	Standard / Reference number *Norm / Referenznummer* *Norme / référence*	Edition *Ausgabe-datum* *Edition*	a=1 b=1,4 e=D,H,K	a=1 b=1,4 e=C,E,J,L	a=1 b=1,2,4 e=A,B	a=3 b=1,2,4 e=D,H,K	a=3 b=1,2,4 e=C,E,J,L	a=3 b=1,2,4 e=A,B	a=5 b=2 e=H,K	a=5 b=2 e=C,J L,M	a=5 b=2 e=A	a=5 b=8 e=H,K	a=5, b=8 e=C,J I;M	a=5 b=8 e=A
2014/35/EU	EN61010-1	2010								•			•	
2014/30/EU	EN 61326-1	2013	•	•		•	•		•	•		•	•	
2014/30/EU	EN 61326-2-5	2013	•	•		•	•		•	•		•	•	
2014/34/EU	EN 1127-1	2011	•	•	•									
2014/34/EU	EN 60079-0:	2012/A11 :2013	•	•	•	•	•	•						
2014/34/EU	EN 60079-1	2014				•	•	•						
2014/34/EU	EN 60079-7 (Note 1)	2015	•	•	•	•	•	•						
2014/34/EU	EN 60079-11	2012	•	•	•	•	•	•						
2014/34/EU	EN 60079-31	2014	•	•	•	•	•	•						
				•			•							
2014/68/EU	PED ESR annex 1	2014	•4,5	•4,5	•4,5	•4	•4	•4	•4	•4	•4	•4	•4	•4
2014/32/EU	OIML R49	2006							•2,3	•2,3	•2,3			

Note 1: The manufacturer declares that this product complies with the requirements of the new editions of the standards. The changes of the new editions have been checked and do not affect this product.

*all environments included / *beinhaltet alle Umgebungen/dans tout type d'environnement*
** d=F,J*
2: Only with MAG5000CT or 6000CT Z=P1x
3: Only when marked with [M+year] and Notified Body identification number 0200 after the CE-mark
4: Only when marked with Notified Body identification number 0200 after the CE-mark
5: MAG 1100 F: The CE-marking is covering the sensor without process connections and clamp rings

EC-type examination certificate *EG-Baumusterprüfbescheinigung* *Certificat évaluation de type*	Marking *Kennzeichnung* *Marquage*	a=1 b=1,2,4 d=B,D,E	a=3 b=1,2,4 e=B,D,E	a=5 b=2 cd≠1V	a=5 b=8 cd≠1V
SIRA 07 ATEX 1182X (Note 1) (MAG3100 DN ≤ 300)	II 2(1) GD		•		
SIRA 07 ATEX 3181X (Note 1)	II 2(1) GD	•			
SIRA 03 ATEX 3339X (MAG3100 DN >300)	II 2 GD (Remote) II 2(1)GD Compact		•		
Force Certification A/S DK-0200-PED-H-002 (Module H)	-	•4,5	•4	•4	•4
Force Certification A/S DK-0200-MI001-001	-			•2,3	
Force Certification A/S DK-0200-MID-D-002 (Module D)	-			•2,3	

Note 1: The manufacturer declares that this product complies with the requirements of the new editions of the standards. The changes of the new editions have been checked and do not affect this product.

2: Only with MAG5000CT or 6000CT Z=P1x
3: Only when marked with [M+year] and Notified Body identification number 0200 after the CE-mark.
4: Only when marked with Notified Body identification number 0200 after the CE-mark
5: MAG 1100 F: The CE-marking is covering the sensor without process connections and clamp rings.

SIEMENS

Annex A to the EU Declaration of Conformity
Anhang A zur EU-Konformitätserklärung
Annexe A de la Déclaration de conformité

No. A5E31813160A/008

Inspection / Surveillance:
Kontrolle / Überwachung:
Controle / Supervision:

Directive *Richtlinie* *Directive*		Notified Body Product Quality Assurance *Benannte Stelle Qualitätssicherung Produktion* *Organisme notifie*	No. *Nr.* *N°.*
2014/34/EU	ATEX	CSA Group Netherlands B.V. – Utrechtseweg 310 (B42), 6812 AR ARNHEM, Netherlands	2813
2014/68/EU	PED	FORCE Certification A/S, Park Allé 345, 2605 Brøndby, Denmark	0200
2014/32/EU	MID	FORCE Certification A/S, Park Allé 345, 2605 Brøndby, Denmark	0200

EU-Konformitätserklärung Nr. 951194.00
EU-Declaration of Conformity No.

Hersteller / *Manufacturer*: **PHOENIX CONTACT GmbH & Co. KG**

Anschrift / *Address*: Flachsmarktstraße 8, 32825 Blomberg, Germany

Produktbezeichnung / *Product description*: **UT 10**

(Artikelbezeichnung, / *Article description*, Artikel-Nr. / *Article no.*) **3044160**

Das vorstehend bezeichnete Produkt stimmt mit den wesentlichen Anforderungen der nachfolgenden Richtlinie(n) und deren Änderungsrichtlinien überein / *The above mentioned product is in line with the essential requirements of the below directive(s) and their modification directive(s):*

2014/35/EU **Niederspannungs-Richtlinie**
Low Voltage Directive (LVD)

Für die Beurteilung der Übereinstimmung wurden folgende einschlägige Normen herangezogen:
For evaluation of the conformity following relevant standards were consulted:

EN 60947-7-1:2009

Weitere Informationen (z. B. Dokumente, Prüfberichte, Einschränkungen, etc.) zur Konformitätsbewertung:
Additional information (for example documents, test reports, restrictions etc.,) of the conformity assessment:

Zertifikate einer benannten Stelle / *Certificates by a notified body:*

Anschrift / *Address*:

Referenz / *Reference*:

Anschrift / *Address*:

Referenz / *Reference*:

Die letzten beiden Ziffern des Jahres in dem die CE-Kennzeichnung angebracht wurde: 05
The last two figures of the year in which the CE marking was applied:
(nur einzutragen, bei der Niederspannungsrichtlinie / *only to be entered on the low voltage directive*)

☒ Diese Erklärung gilt auch für die im Anhang aufgelisteten Produkte. (wenn angekreuzt)
This declaration also applies for the products listed in the annex. (*if marked with a cross*)

Diese Erklärung bescheinigt die Übereinstimmung mit den wesentlichen Anforderungen der genannten Richtlinie(n), enthält jedoch keine Zusicherung von Eigenschaften. Die Sicherheits- und Einbauhinweise der mitgelieferten Produktdokumentation sind zu beachten.
This declaration certifies the conformity with the essential requirements of the indicated directive(s), it does not, however, covenant any characteristics. The instructions for safety and installation of the enclosed product documentation have to be observed.

Blomberg, 2016-06-15

i.V. A. Alberani

Alessandro Alberani
Business Unit Industrial Cabinet Connectivity
Head of Development & Quality Laboratory

Ansprechpartner / *contact person*

i.V. Klaus Firschke

Klaus Firschke
Business Unit Industrial Cabinet Connectivity
Head of Product Marketing

Zeichnungsberechtigter / *authorized signatory*

PHOENIX CONTACT

Anhang zur EU-Konformitätserklärung Nr. 951194.00
Annex on EU Declaration of Conformity No.
vom / dated 2016-06-15

Produktbezeichnung / *Product description*: **UT 10**

(Artikelbezeichnung, / *Article description*,
Artikel-Nr. / *Article no.*) **3044160**

Die Konformität mit den wesentlichen Anforderungen der Richtlinie(n) wird auch für folgende Produkte bescheinigt:
The conformity with the essential requirements of the directive(s) is also certified by the declaration for following products.

Artikel-Nr. / *Article no.*	Artikelbezeichnung / *Article description*
3046320	UT 10 BK
3044188	UT 10 BU
3046333	UT 10 GN
3046281	UT 10 OG
3046304	UT 10 RD
3064247	UT 10 SL
3046317	UT 10 WH
3046294	UT 10 YE
3047660	UT 10-FE
3044199	UT 16
3044197	UT 16 BK
3044209	UT 16 BU
3044211	UT 16 GN
3047468	UT 16 OG
3044207	UT 16 RD
3044198	UT 16 YE
3047663	UT 16-FE
3044076	UT 2,5
3045088	UT 2,5 BK
3044077	UT 2,5 BN
3044089	UT 2,5 BU
3045091	UT 2,5 GN
3045046	UT 2,5 OG
3045062	UT 2,5 RD
3044078	UT 2,5 VT
3045075	UT 2,5 WH
3045059	UT 2,5 YE
3245121	UT 2,5-FE
3064085	UT 2,5-MTD
3064108	UT 2,5-MTD BU
3064098	UT 2,5-MTD P/P
3064111	UT 2,5-MTD P/P BU

3044225	UT 35
3044226	UT 35 BK
3044238	UT 35 BU
3047727	UT 35 IB
3047730	UT 35 IB BU
3044227	UT 35 RD
3044102	UT 4
3045143	UT 4 BK
3045224	UT 4 BN
3044115	UT 4 BU
3045156	UT 4 GN
3045101	UT 4 OG
3045127	UT 4 RD
3044607	UT 4 VT
3045130	UT 4 WH
3045114	UT 4 YE
3044623	UT 4-CB
3044611	UT 4-CB BN
3044610	UT 4-CB OG
3047617	UT 4-FE
3046184	UT 4-MTD
3047691	UT 4-MTD BK
3047714	UT 4-MTD BN
3046197	UT 4-MTD BU
3047688	UT 4-MTD RD
3047701	UT 4-MTD WH
3044131	UT 6
3045208	UT 6 BK
3044144	UT 6 BU
3045211	UT 6 GN
3045169	UT 6 OG
3045185	UT 6 RD
3045198	UT 6 WH
3045172	UT 6 YE
3047647	UT 6-FE

SIEMENS

EU Declaration of Conformity
EU-Konformitätserklärung
EU-Déclaration de Conformité

CE

No. A5E31813160B/007

Manufacturer: *Hersteller:* *Fabricant:*	Siemens AG
Address: *Anschrift:* *Adresse:*	DE-76181 Karlsruhe
Product description: *Produktbezeichnung:* *Identificateur:*	**Flowmeter / Durchflussmessgerät / Débitmètre** **SITRANS F M MAG 8000, MAG 8000 CT (GSM)** 7ME68a0-xxxxx-xxbc used with sensors MAG 5100 W

The product described above in the form as delivered is in conformity with the provisions of the following European Directives:
Das bezeichnete Produkt stimmt in der von uns in Verkehr gebrachten Ausführung mit den Vorschriften folgender Europäischer Richtlinien überein:
Le produit mentionné ci-dessus, tel qu'il est livré, est conforme aux dispositions des Directives Européennes suivantes :

2014/30/EU EMC	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to electromagnetic compatibility *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la compatibilité électromagnétique*
2014/35/EU LVD	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung elektrischer Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen auf dem Markt* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la mise à disposition sur le marché du matériel électrique destiné à être employé dans certaines limites de tension*
2014/32/EU MID	Directive of the European Parliament and the Council on the harmonisation of the laws of the Member States relating to the making available on the market of measuring instruments *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Messgeräten auf dem Markt* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la mise à disposition sur le marché d'instruments de mesure*
2014/68/EU PED	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la mise à disposition sur le marché des équipements sous pression*

Annex A is integral part of this declaration..
Anhang A ist integraler Bestandteil dieser Erklärung.
L'annexe A fait partie intégrante de la présente déclaration

This declaration certifies the conformity to the specified directives but contains no assurance of properties.
The safety documentation accompanying the product shall be considered in detail.
Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie nach §443 BGB.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.
La présente déclaration atteste la conformité aux Directives citées. Elle n'est pas assimilable à un descriptif justifiant certaines propriétés.
La documentation relative à la sécurité accompagnant le produit doit être examinée en détail.

Siemens Aktiengesellschaft: Chairman of the Supervisory Board: Jim Hagemann Snabe; Managing Board: Joe Kaeser, Chairman, President and Chief Executive Officer; Roland Busch, Lisa Davis, Klaus Helmrich, Janina Kugel, Cedrik Neike, Michael Sen, Ralf P. Thomas; Registered offices: Berlin and Munich, Germany; Commercial registries: Berlin Charlottenburg, HRB 12300, Munich, HRB 6684; WEEE-Reg.-No. DE 23691322

SIEMENS

EU Declaration of Conformity
EU-Konformitätserklärung
EU-Declaration de Conformite

No. A5E31813160B/007

2014/53/EU RED	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Funkanlagen auf dem Markt und zur Aufhebung der Richtlinie 1999/5/EG* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la mise à disposition sur le marché d'équipements radioélectriques et abrogeant la directive 1999/5/CE*
2011/65/EU RoHS	Directive of the European Parliament and the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment. *Richtlinie des Europäischen Parlaments und des Rates zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräte.* *Directive du parlement Européen et du relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques*

Karlsruhe, 29.05.2018
Siemens Aktiengesellschaft

Volker Rissland,
Research & Development / *Entwicklung / Développement*
(Name, function / *Name, Funktion, / Nom, fonction*)

Signature / *Unterschrift / Signature*

Jürgen Pflaum,
Quality / *Qualität / Qualité*
(Name, function / *Name, Funktion, / Nom, fonction*)

Signature / *Unterschrift / Signature*

Annex A is integral part of this declaration..
Anhang A ist integraler Bestandteil dieser Erklärung.
L'annexe A fait partie intégrante de la présente déclaration

This declaration certifies the conformity to the specified directives but contains no assurance of properties.
The safety documentation accompanying the product shall be considered in detail.
Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie nach §443 BGB.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.
La présente déclaration atteste la conformité aux Directives citées. Elle n'est pas assimilable à un descriptif justifiant certaines propriétés.
La documentation relative à la sécurité accompagnant le produit doit être examinée en détail.

SIEMENS

Annex A to the EU Declaration of Conformity
Anhang A zur EU-Konformitätserklärung
Annexe A de la Déclaration de conformité

No. A5E31813160B/007

Product description:	**Flowmeter / Durchflussmessgerät / Débitmètre**
Produktbezeichnung:	**SITRANS F M MAG 8000, MAG 8000 CT (GSM)**
Identificateur:	7ME68a0-xxxxx-xxbc
	used with sensors MAG 5100 W

Conformity to the Directives indicated on page 1 is assured through the application of the following standards (depending on versions):
Die Konformität mit den auf Blatt 1 angeführten Richtlinien wird nachgewiesen durch die Einhaltung folgender Normen (variantenabhängig):
La conformité aux Directives indiquées sur la page 1 est garantie par l'application des normes suivantes (selon les versions) :

Direktive *Richtlinie* *Directive*	Standard / Reference number *Norm / Referenznummer* *Norme / référence*	Edition *Ausgabedatum* *Edition*	a=1 b=A,B,C,D c=0,1,2,3	a=1 b=A,B,C,D c=4	a=1 b=S,T	a=2 b=A,B,C,D c=0,1,2,3	a=2 b=A,B,C,D c=4	a=2 b=S,T
2014/35/EU	EN 61010-1	2010	●	●		●	●	
2014/30/EU	EN 61326-1 *	2013		●			●	
2014/68/EU	PED ESR annex 1	2014	●**	●**	●**	●**	●**	●**
2014/32/EU	OIML R49	2006				●***	●***	●***
2014/53/EU	EN 61010-1	2010			●			●
2014/53/EU	EN 61326-1 *	2013			●			●
2014/53/EU	EN 61000-6-1	2005			●			●
2014/53/EU	EN 61000-6-3	2007/A1:2011			●			●
2014/53/EU	EN 301 489-1 V1.9.2	2011			●			●
2014/53/EU	EN 301 489-7 V1.3.1	2005			●			●
2014/53/EU	EN 301 511 V12.5.1	2017			●			●
2014/53/EU	EN 301 908-1 V11.1.1	2016			●			●
2014/53/EU	EN 301 908-2 V11.1.2	2017			●			●

* all environments included / *beinhaltet alle Umgebungen / dans tout type d'environnement*
** only when marked with Notified Body identification number 0200 after the CE-mark
*** only when marked with [M+year] and Notified Body identification number 0200 after the CE-mark

EC-type examination certificate *EG-Baumusterprüfbescheinigung* *Certificat évaluation de type*	a=1	a=2
Force Certification A/S DK-0200-PED-H-002 (Module H)	●**	●**
Force Certification A/S DK-0200-MI001-011		●***
Force Certification A/S DK-0200-MID-D-002 (Module D)		●***

** only when marked with Notified Body identification number 0200 after the CE-mark
*** only when marked with [M+year] and Notified Body identification number 0200 after the CE-mark

Inspection / Surveillance:
Kontrolle / Überwachung:
Contrôle / Supervision:

Directive *Richtlinie* *Directive*		Notified Body Product Quality Assurance *Benannte Stelle Qualitätssicherung Produktion* *Organisme notifié*	No. *Nr.* *N°.*
2014/68/EU	PED	FORCE Certification A/S, Park Allé 345, 2605 Brøndby, Denmark	0200
2014/32/EU	MID	FORCE Certification A/S, Park Allé 345, 2605 Brøndby, Denmark	0200

DAkkS
Deutsche
Akkreditierungsstelle

Deutsche Akkreditierungsstelle GmbH

Beliehene gemäß § 8 Absatz 1 AkkStelleG i.V.m. § 1 Absatz 1 AkkStelleGBV
Unterzeichnerin der Multilateralen Abkommen
von EA, ILAC und IAF zur gegenseitigen Anerkennung

Akkreditierung

Die Deutsche Akkreditierungsstelle GmbH bestätigt hiermit, dass das Prüflaboratorium

Phoenix Contact GmbH & Co. KG
Prüflabor TRABTECH
Flachsmarktstraße 8, 32825 Blomberg

die Kompetenz nach DIN EN ISO/IEC 17025:2018 besitzt, Prüfungen in folgenden Bereichen durchzuführen:

Überspannungsschutzgeräte für Niederspannung, Stecker, Steckdosen, Fahrzeugkupplungen und Fahrzeugstecker

Die Akkreditierungsurkunde gilt nur in Verbindung mit dem Bescheid vom 12.04.2019 mit der Akkreditierungsnummer D-PL-12161-03. Sie besteht aus diesem Deckblatt, der Rückseite des Deckblatts und der folgenden Anlage mit insgesamt 4 Seiten.

Registrierungsnummer der Urkunde: **D-PL-12161-03-00**

Frankfurt am Main, 12.04.2019

Im Auftrag Dipl.-Ing. (FH) Ralf Egner
Abteilungsleiter

Die Urkunde samt Urkundenanlage gibt den Stand zum Zeitpunkt des Ausstellungsdatums wieder. Der jeweils aktuelle Stand des Geltungsbereiches der Akkreditierung ist der Datenbank akkreditierter Stellen der Deutschen Akkreditierungsstelle GmbH (DAkkS) zu entnehmen. https://www.dakks.de/content/datenbank-akkreditierter-stellen

Siehe Hinweise auf der Rückseite

Deutsche Akkreditierungsstelle GmbH

Standort Berlin
Spittelmarkt 10
10117 Berlin

Standort Frankfurt am Main
Europa-Allee 52
60327 Frankfurt am Main

Standort Braunschweig
Bundesallee 100
38116 Braunschweig

Die auszugsweise Veröffentlichung der Akkreditierungsurkunde bedarf der vorherigen schriftlichen Zustimmung der Deutsche Akkreditierungsstelle GmbH (DAkkS). Ausgenommen davon ist die separate Weiterverbreitung des Deckblattes durch die umseitig genannte Konformitätsbewertungsstelle in unveränderter Form.

Es darf nicht der Anschein erweckt werden, dass sich die Akkreditierung auch auf Bereiche erstreckt, die über den durch die DAkkS bestätigten Akkreditierungsbereich hinausgehen.

Die Akkreditierung erfolgte gemäß des Gesetzes über die Akkreditierungsstelle (AkkStelleG) vom 31. Juli 2009 (BGBl. I S. 2625) sowie der Verordnung (EG) Nr. 765/2008 des Europäischen Parlaments und des Rates vom 9. Juli 2008 über die Vorschriften für die Akkreditierung und Marktüberwachung im Zusammenhang mit der Vermarktung von Produkten (Abl. L 218 vom 9. Juli 2008, S. 30).
Die DAkkS ist Unterzeichnerin der Multilateralen Abkommen zur gegenseitigen Anerkennung der European co-operation for Accreditation (EA), des International Accreditation Forum (IAF) und der International Laboratory Accreditation Cooperation (ILAC). Die Unterzeichner dieser Abkommen erkennen ihre Akkreditierungen gegenseitig an.

Der aktuelle Stand der Mitgliedschaft kann folgenden Webseiten entnommen werden:
EA: www.european-accreditation.org
ILAC: www.ilac.org
IAF: www.iaf.nu

Deutsche Akkreditierungsstelle GmbH

Anlage zur Akkreditierungsurkunde D-PL-12161-03-00 nach DIN EN ISO/IEC 17025:2018

Gültig ab: 12.04.2019

Ausstellungsdatum: 12.04.2019

Urkundeninhaber:

Phoenix Contact GmbH & Co. KG
Prüflabor TRABTECH
Flachsmarktstraße 8, 32825 Blomberg

Prüfungen in den Bereichen:

Überspannungsschutzgeräte für Niederspannung, Stecker, Steckdosen, Fahrzeugkupplungen und Fahrzeugstecker

Dem Prüflaboratorium ist, ohne dass es einer vorherigen Information und Zustimmung der DAkkS bedarf, die Anwendung der hier aufgeführten genormten oder ihnen gleichzusetzenden Prüfverfahren mit unterschiedlichen Ausgabeständen gestattet.

Das Prüflaboratorium verfügt über eine aktuelle Liste aller Prüfverfahren im flexiblen Akkreditierungsbereich.

Fachbereich	Norm / Hausverfahren / Version	Titel der Norm oder des Hausverfahrens (ggf. Abweichungen / Modifizierungen von Normverfahren angeben)	Prüfbereich / Einschränkung
	DIN EN 61643-11, VDE 0675-6-11 Ausgabedatum: 2019	Überspannungsschutzgeräte für Niederspannung - Teil 11: Überspannungsschutzgeräte für den Einsatz in Niederspannungsanlagen - Anforderungen und Prüfungen (IEC 61643-11:2011, modifiziert); Deutsche Fassung EN 61643-11:2012 + A11:2018	Überspannungs-schutzgeräte

verwendete Abkürzungen: siehe letzte Seite

Die Urkunde samt Urkundenanlage gibt den Stand zum Zeitpunkt des Ausstellungsdatums wieder. Der jeweils aktuelle Stand des Geltungsbereiches der Akkreditierung ist der Datenbank akkreditierter Stellen der Deutschen Akkreditierungsstelle GmbH (DAkkS) zu entnehmen. https://www.dakks.de/content/datenbank-akkreditierter-stellen

Fachbereich	Norm / Hausverfahren / Version	Titel der Norm oder des Hausverfahrens (ggf. Abweichungen / Modifizierungen von Normverfahren angeben)	Prüfbereich / Einschränkung
	EN 61643-11 Ausgabedatum: 2012	Überspannungsschutzgeräte für Niederspannung - Teil 11: Überspannungsschutzgeräte für den Einsatz in Niederspannungsanlagen - Anforderungen und Prüfungen (IEC 61643-11:2011, modifiziert)	Überspannungs-schutzgeräte
	EN 61643-11/A11 Ausgabedatum: 2018	Überspannungsschutzgeräte für Niederspannung - Teil 11: Überspannungsschutzgeräte für den Einsatz in Niederspannungsanlagen - Anforderungen und Prüfungen	Überspannungs-schutzgeräte
	IEC 61643-11, Ausgabedatum: 2011	Low-voltage surge protective devices - Part 11: Surge protective devices connected to low-voltage power distribution systems - Requirements and testing methods	Surge protection devices
	DIN EN 61643-21, VDE 0845-3-1 Ausgabedatum: 2013	Überspannungsschutzgeräte für Niederspannung - Teil 21: Überspannungsschutzgeräte für den Einsatz in Telekommunikations- und signalverarbeitenden Netzwerken - Leistungsanforderungen und Prüfverfahren (IEC 61643-21:2000 + Corrigendum 2001 + A1:2008, modifiziert + A2:2012); Deutsche Fassung EN 61643-21:2001 + A1:2009 + A2:2013	Überspannungs-schutzgeräte
	IEC 61643-21, Ausgabedatum: 2012	Low voltage surge protective devices - Part 21: Surge protective devices connected to telecommunications and signalling networks - Performance requirements and testing methods (Note: Combines IEC 61643-21 (2000-09), Corrigendum 1 (2001-03), AMD 1 (2008-04) and AMD 2 (2012-07) or IEC 61643-21 Edition 1.1 (2009-04) and AMD 2 (2012-07))	Surge protection devices
	DIN EN 61643-12, VDE 0675-6-12 Ausgabedatum: 2017	Überspannungsschutzgeräte für Niederspannung - Teil 12: Überspannungsschutzgeräte für den Einsatz in Niederspannungsanlagen - Auswahl und Anwendungsgrundsätze (IEC 37A/287/CD:2016)	Überspannungsschutzgeräte Prüfung nach Anhang J
	IEC 61643-12 Ausgabedatum: 2008	Low-voltage surge protective devices - Part 12: Surge protective devices connected to low-voltage power distribution systems - Selection and application principles	Surge protection devices Tests according Annex J

Fachbereich	Norm / Hausverfahren / Version	Titel der Norm oder des Hausverfahrens (ggf. Abweichungen / Modifizierungen von Normverfahren angeben)	Prüfbereich / Einschränkung
	IEC 37A/305A/CD, Ausgabedatum: 2017	Low-voltage surge protective devices - Part 12: Surge protective devices connected to low-voltage power distribution systems - Selection and application principles	Surge protection devices Tests according Annex J
	DIN CLC/TS 61643-12, VDE V0675-6-12 Ausgabedatum: 2010	Überspannungsschutzgeräte für Niederspannung - Teil 12: Überspannungsschutzgeräte für den Einsatz in Niederspannungsanlagen -Auswahl und Anwendungs-grundsätze (IEC 61643-12:2008, modifiziert); Deutsche Fassung CLC/TS 61643-12:2009	Überspannungs-schutzgeräte Prüfung nach Anhang J
	E DIN EN 61643-31, VDE 0675-6-31 Ausgabedatum: 2015	Überspannungsschutzgeräte für Niederspannung - Teil 31: Anforderungen und Prüfungen für Überspannungsschutzgeräte in Photovoltaik-Installationen (IEC 37A/255/CD:2014)	Überspannungs-schutzgeräte
	FprEN 61643-31 Ausgabedatum: 2017	Low-voltage surge protective devices - Part 31: Requirements and test methods for SPDs for photovoltaic installations	Surge protection devices
	IEC 61643-31 Ausgabedatum: 2018	Low-voltage surge protective devices - Part 31: Requirements and test methods for SPDs for photovoltaic installations	Surge protection devices
	EN 50539-11 Ausgabedatum: 2013	Low-voltage surge protective devices - Surge protective devices for specific application including d.c. - Part 11: Requirements and tests for SPDs in photovoltaic applications	Surge protection devices
	DIN EN 50539-11, VDE 0675-39-11 DIN EN 50539-11/A1, VDE 0675-39-11/A1 Ausgabedatum: 2015	Überspannungsschutzgeräte für Niederspannung - Überspannungsschutzgeräte für besondere Anwendungen einschließlich Gleichspannung - Teil 11: Anforderungen und Prüfungen für Überspannungsschutzgeräte für den Einsatz in Photovoltaik-Installationen; Deutsche Fassung EN 50539-11:2013/A1:2014	Überspannungs-schutzgeräte

Fachbereich	Norm / Hausverfahren / Version	Titel der Norm oder des Hausverfahrens (ggf. Abweichungen / Modifizierungen von Normverfahren angeben)	Prüfbereich / Einschränkung
	UL 1449 Ausgabedatum: 2014	UL 1449 Surge protective devices Part: 40: Surge Testing 43: Operational Voltage Test 44: Current Testing 48: Grounding Continuity Test 49: Fault Current Test 50: Overcurrent Test 51: Withstand Test 52: Instrumentation and Calibration of High-Capacity Circuits	Surge protection devices
	DIN EN 62196-1,VDE 0623-5-1 Ausgabedatum: 2015	Stecker, Steckdosen, Fahrzeugkupplungen und Fahrzeugstecker - Konduktives Laden von Elektrofahrzeugen - Teil 1: Allgemeine Anforderungen (IEC 62196-1:2014, modifiziert); Deutsche Fassung EN 62196-1:2014 Teile 12. Vorkehrung für die Schutzerdung 22: Schaltleistung 23: Normalbetrieb 31: Beständigkeit gegen bedingten Kurzschlussstrom	Stecker, Steckdosen, Fahrzeugkupplungen und Fahrzeugstecker
	IEC 62196-1 Ausgabedatum: 2014	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements Teile 12 Provisions for protective earthing 22 Breaking capacity 23 Normal operation 31 Conditional short-circuit current withstand test	Plugs, socket-outlets, vehicle connectors and vehicle inlets

SIEMENS

EU Declaration of Conformity
EU-Konformitätserklärung
EU-Déclaration de Conformité

CE

No. A5E31822661A/005

Manufacturer: *Hersteller:* *Fabricant:*	Siemens AG
Address: *Anschrift:* *Adresse:*	DE-76181 Karlsruhe
Product description: *Produktbezeichnung:* *Identificateur:*	**Flowmeter / Durchflussmessgerät / Débitmètre** **SITRANS F M TRANSMAG 2 used with sensor 911/E** 7ME5034-aAAx1-xAA0 a= see table in annex A / siehe Tabelle im Anhang A 7ME5610-xxxxx-xAAx

The product described above in the form as delivered is in conformity with the provisions of the following European Directives:
Das bezeichnete Produkt stimmt in der von uns in Verkehr gebrachten Ausführung mit den Vorschriften folgender Europäischer Richtlinien überein:
Le produit mentionné ci-dessus, tel qu'il est livré, est conforme aux dispositions des Directives Européennes suivantes :

2014/30/EU EMC	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to electromagnetic compatibility *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die elektromagnetische Verträglichkeit* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la compatibilité électromagnétique*
2014/35/EU LVD	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung elektrischer Betriebsmittel zur Verwendung innerhalb bestimmter Spannungsgrenzen auf dem Markt* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la mise à disposition sur le marché du matériel électrique destiné à être employé dans certaines limites de tension*
2014/68/EU PED	Directive of the European Parliament and of the Council on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment *Richtlinie des Europäischen Parlaments und des Rates zur Harmonisierung der Rechtsvorschriften der Mitgliedstaaten über die Bereitstellung von Druckgeräten auf dem Markt* *Directive du parlement Européen et du conseil relative à l'harmonisation des législations des États membres concernant la mise à disposition sur le marché des équipements sous pression*
2011/65/EU RoHS	Directive of the European Parliament and the Council on the restriction of the use of certain hazardous substances in electrical and electronic equipment. *Richtlinie des Europäischen Parlaments und des Rates zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräte.* *Directive du parlement Européen et du conseil relative à la limitation de l'utilisation de certaines substances dangereuses dans les équipements électriques et électroniques*

Annex A is integral part of this declaration..
Anhang A ist integraler Bestandteil dieser Erklärung.
L'annexe A fait partie intégrante de la présente déclaration

This declaration certifies the conformity to the specified directives but contains no assurance of properties.
The safety documentation accompanying the product shall be considered in detail.
Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie nach §443 BGB.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.
La présente déclaration atteste la conformité aux Directives citées. Elle n'est pas assimilable à un descriptif justifiant certaines propriétés.
La documentation relative à la sécurité accompagnant le produit doit être examinée en détail.

Siemens Aktiengesellschaft: Chairman of the Supervisory Board: Jim Hagemann Snabe; Managing Board: Joe Kaeser, Chairman, President and Chief Executive Officer; Roland Busch, Lisa Davis, Klaus Helmrich, Janina Kugel, Cedrik Neike, Michael Sen, Ralf P. Thomas; Registered offices: Berlin and Munich, Germany; Commercial registries: Berlin Charlottenburg, HRB 12300, Munich, HRB 6684; WEEE-Reg.-No. DE 23691322

SIEMENS

EU Declaration of Conformity
EU-Konformitätserklärung
EU-Déclaration de Conformité

CE

No. A5E31822661A/005

Karlsruhe, 29.05.2018
Siemens Aktiengesellschaft

Volker Rissland,
Research & Development / *Entwicklung / Développement*
(Name, function / *Name, Funktion, / Nom, fonction*)

i.V.

Signature / *Unterschrift / Signature*

Jürgen Pflaum,
Quality / *Qualität / Qualité*
(Name, function / *Name, Funktion, / Nom, fonction*)

i.V.

Signature / *Unterschrift / Signature*

Annex A is integral part of this declaration..
Anhang A ist integraler Bestandteil dieser Erklärung.
L'annexe A fait partie intégrante de la présente déclaration

This declaration certifies the conformity to the specified directives but contains no assurance of properties.
The safety documentation accompanying the product shall be considered in detail.
Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Beschaffenheits- oder Haltbarkeitsgarantie nach §443 BGB.
Die Sicherheitshinweise der mitgelieferten Produktdokumentation sind zu beachten.
La présente déclaration atteste la conformité aux Directives citées. Elle n'est pas assimilable à un descriptif justifiant certaines propriétés.
La documentation relative à la sécurité accompagnant le produit doit être examinée en détail.

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Annex A to the EU Declaration of Conformity
Anhang A zur EU-Konformitätserklärung
Annexe A de la Déclaration de conformité

No. A5E31822661A/005

Product description:	**Flowmeter / Durchflussmessgerät / Débitmètre**
Produktbezeichnung:	**SITRANS F M TRANSMAG 2 used with sensor 911/E**
Identificateur:	7ME5034-aAAx1-xAA0 a= see table in annex A / siehe Tabelle im Anhang A
	7ME5610-xxxxx-xAAx

Conformity to the Directives indicated on page 1 is assured through the application of the following standards (depending on versions):
Die Konformität mit den auf Blatt 1 angeführten Richtlinien wird nachgewiesen durch die Einhaltung folgender Normen (variantenabhängig):
La conformité aux Directives indiquées sur la page 1 est garantie par l'application des normes suivantes (selon les versions) :

Directive *Richtlinie* *Directive*	Standard / Reference number *Norm / Referenznummer* *Norme / référence*	Edition *Ausgabedatum* *Edition*	7ME5034 a=0,2	7ME5034 a=1	7ME5610
2014/30/EU	EN 61326-1 *	2013	●		
2014/30/EU	EN 61326-2-5 *	2013		●	
2014/35/EU	EN 61010-1	2010	●	●	
2014/68/EU	PED ESR annex 1 **	2014			● **

* all environments included / *beinhaltet alle Umgebungen/dans tout type d'environnement*
** only when marked with Notified Body identification number 0200 after the CE-mark

EC-type examination certificate *EG-Baumusterprüfbescheinigung* *Certificat évaluation de type*	7ME5610
FORCE Certification A/S, DK-0200-PED-H-002 (Module H)	● **

** only when marked with Notified Body identification number 0200 after the CE-mark

Inspection / Surveillance:
Kontrolle / Überwachung:
Contrôle / Supervision:

Directive *Richtlinie* *Directive*		Notified Body Product Quality Assurance *Benannte Stelle Qualitätssicherung Produktion* *Organisme notifié*	No. *Nr.* *N°.*
2014/68/EU	PED	FORCE Certification A/S, Park Allé 345, 2605 Brøndby, Denmark	0200

OIML Member State
Denmark

OIML Certificate no.
R49/2006-DK2-10.01
Revision 2

OIML CERTIFICATE OF CONFORMITY

Issuing authority
Name and address: **FORCE Certification A/S**
Park Allé 345
2605 Brøndby
Denmark

Person responsible: **Lars Poder – Examiner**

Applicant/Manufacturer
Name and address: **Siemens A/S Flow Instruments**
Nordborgvej
DK-6430 Nordborg

Identificatation of the certified type

Type of instrument: Water meter, electro magnetic flowmeter

Type designation: MAG5100W DN50-300 with MAG8000CT or MAG8000CT GSM

Detailed characteristics will be defined on the following pages.

This certificate attests the conformity of the above identified Type (represented by the sample(s) identified in the OIML Evaluation report) with the requirements of the following Recommendation of the International Organization of Legal Metrology (OIML):

OIML R 49 Edition 2006

For accuracy class 1 and 2

This Certificate relates only to metrological and technical characteristics of the Type of measuring instrument covered by the relevant OIML Recommendation above-identified.

This certificate does not bestow any form of legal international approval.

December 17, 2012

OIML Certificate no.
R49/2006-DK2-10.01
Revision 2

The conformity was established by the results of tests and examinations provided in the associated reports:

- OIML Type Evaluation Report No. 10.01 dated 2010-05-31 that includes 369 pages
- OIML Type Evaluation Report file no. 80.976-134/10 and 80.976-105/09 dated 29 March 2011 that includes 28 pages
- DELTA Test Report Project no. T202729 dated 29 November 2012 that includes 19 pages
- Siemens Report DescriptionOfChanges_MAG8000_v3_04 dated 2011-08-04 that includes 4 pages

The OIML Issuing Authority
Date of issue: 2012-12-17

Michael Møller Nielsen
Certification manager

Lars Poder
Examiner

Important note: Apart from the mention of the Certificate's reference number and the name of the OIML Member State in which the Certificate is issued, partial quotation of the Certificate and of the associated OIML Evaluation Report is not permitted, although either may be reproduced in full.

Technical documentation
FORCE Certification A/S File no. 112-24266.0004, 80.976-134/10 and 80.976-105/09

Characteristics

Instrument tested according to	:	OIML R49:2006	
Software version	:	3.03 and 3.04	
Accuracy class	:	1 & 2	
Verification tolerance	:	Class 1	Class 2
		± 3% $Q_1 \le Q < Q_2$	± 5% $Q_1 \le Q < Q_2$
		± 1% $Q_2 \le Q \le Q_4$	± 2% $Q_2 \le Q \le Q_4$
Unit of measurement	:	Cubic metre	
Measurement direction	:	Bi directional	
Temperature	:	T50 (0.1 - 50°C)	
Pressure	:	PN = 16 bar or PN = 10 bar or PN = 6 bar	
Power supply	:	3.6V Lithium Battery, 12 - 24 V AC/DC, 115 - 230 V AC	
Compact/Remote	:	Up to 30 meter cable	
Orientation	:	DN50-DN150: All orientations DN200-DN300: Only horizontal	

Class1

SIZE	*50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200	250	300
"R" Q3/Q1	250	250	250	250	250	250	250	250	125
Q1 [m³/h]	0.25	0.40	0.63	1.00	160	2.50	4.00	6.40	12.80
Q2 [m³/h]	0.40	0.64	1.00	1.60	2.60	4.00	6.40	10.24	20.48
Q3 [m³/h]	63	100	160	250	400	630	1000	1600	1600
Q4 [m³/h]	78.75	125	200	312.5	500	787.5	1250	2000	2000

* OIML R49-1 allows class 1 only for meters with Q3≥100 m³/h, although the meter were tested to class 1 accuracy and passed the requirements.

The above mentioned table describe the maximum specification of flow range. Other dynamic ranges are allowed if "R" is 10, 25, 63, 80, 100, 125, 160, 200.

Class 2

SIZE	50 (2")	65 (2½")	80 (3")	100 (4")	125 (5")	150 (6")	200	250	300
"R" Q3/Q1	400	400	400	400	400	400	400	400	200
Q1 [m³/h]	0.160	0.25	0.40	0.63	1.00	1.60	2.5	4.0	10.0
Q2 [m³/h]	0.250	0.40	0.63	1.00	1.60	2.50	4.0	6.4	16.0
Q3 [m³/h]	63	100	160	250	400	630	1000	1600	1600
Q4 [m³/h]	78.75	125	200	312.5	500	787.5	1250	2000	2000

The above mentioned table describe the maximum specification of flow range. Other dynamic ranges are allowed if "R" is 10, 25, 63, 80, 100, 125, 160, 200, 250, 315.

Technical data

Water meter intended for metering cold potable water and hot water, based on an electromagnetic principle, designed to measure forward and reverse flow in all orientations, with straight inlet and outlet length, with no conditioner and equipped with an electronic calculating/indicating device.

Instrument tested according to	: OIML R49:2006	
Software version	: 3.03 and 3.04	
Environment class	: C	
Climatic class	: -25...55°C, condensing, closed	
Durability specification	: Battery 6 years, Product 10 years	
Verification tolerance	: Class 1 $\pm$ 3% $Q_1 \leq Q < Q_2$ $\pm$ 1% $Q_2 \leq Q \leq Q_4$	Class 2 $\pm$ 5% $Q_1 \leq Q < Q_2$ $\pm$ 2% $Q_2 \leq Q \leq Q_4$
Unit of measurement	: Cubic metre	
Measurement direction	: Bi directional	
Temperature	: T50 (0.1 - 50°C)	
Pressure	: PN = 16 bar or PN = 10 bar or PN = 6 bar	
Power supply	: 3.6V Lithium Battery, 12 - 24 V AC/DC, 115 - 230 V AC	
Compact/Remote	: Up to 30 meter cable	

Other relevant information:

Applied standards and documents:
OIML R49: 2006

The instruments/measuring systems must correspond with the following specifications:

Type designation:
MAG5100W DN50-300 with MAG8000CT or MAG8000CT GSM

Description:
The construction consists of an electromagnetic flow sensor, MAG5100W, and a signal transmitter, MAG8000CT or MAG8000CT GSM.

The design principle is, as for any electro magnetic flow sensor, that a constant pulsed DC electrical current through the coil circuit results in a magnetic field through the sensor bore with direction from coil to coil. When a conductive liquid passes through the magnetic field a differential DC voltage is introduced between the measuring electrodes.

The sensor has a steel tube and steel flanges and the bore are fitted with an electrically insulating lining which is coned to optimize the velocity profile of the fluid. Between the lining and the steel tube the coil is fitted that generate the magnetic field.

The water meter may be equipped with an optional remote data read out module type SITRANS F M MAG 8000 GSM/GPRS Wireless Communication Module.
The GSM module is approved both as a factory mounted variant in a MAG8000CT GSM as well as for retrofitting into an existing MAG8000CT without damage to the internal verification sealing.

Verification

Procedure: Test points and verification requirements according to OIML R49:2006.

The water temperature range shall be 20 ± 10°C.

At least the following three flowrates shall be used for verification:

$Q_1 \leq Q \leq 1.1Q_1$ (class 1: 3%) (class 2: 5%)

$Q_2 \leq Q \leq 1.1Q_2$ (class 1: 1%) (class 2: 2%)

$0.9Q_3 \leq Q \leq Q_3$ (class 1: 1%) (class 2: 2%)

Installation

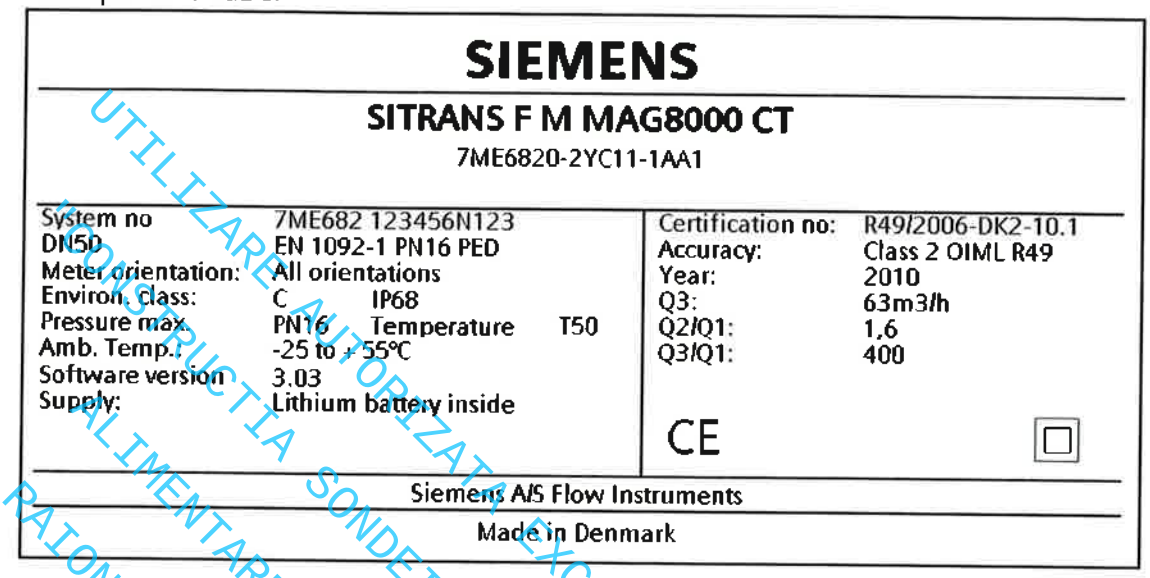
The product requires minimum of 5 x [Dia] straight pipe upstream from the sensor and minimum of 3 x [Dia] straight pipe downstream from the sensor.

DN50-DN150: The sensor can be installed in all orientations.
DN200-DN300: The sensor can only be installed in a horizontal condition.

The meter is approved to be used bidirectional.
MAG8000CT must be installed as described by the manual.

Labeling

Example of a label



SIEMENS

SITRANS F M MAG8000 CT

7ME6820-2YC11-1AA1

System no	7ME682 123456N123			Certification no:	R49/2006-DK2-10.1
DN50	EN 1092-1 PN16 PED			Accuracy:	Class 2 OIML R49
Meter orientation:	All orientations			Year:	2010
Environ. class:	C	IP68		Q3:	63m3/h
Pressure max.	PN16	Temperature	T50	Q2/Q1:	1,6
Amb. Temp.:	-25 to +55°C			Q3/Q1:	400
Software version	3.03				
Supply:	Lithium battery inside				

CE

Siemens A/S Flow Instruments

Made in Denmark

Certificate history

Issue no.	Date	Description
R49/2006-DK2-10.01	2010-05-31	Initial certificate issued.
R49/2006-DK2-10.01 Revision 1	2011-03-29	Revision 1 issued. New meter sizes DN200 & DN300 added.
R49/2006-DK2-10.01 Revision 2	2012-12-17	Revision 2 issued. New transmitter MAG8000 CT GSM added. New software version added. Certificate history added.

OIML Member State
Denmark

Annex I to OIML Certificate no.
R49/2006-DK2-10.01

Task No. 117-29536.01

Issuing authority
Name and address:

FORCE Certification A/S
Park Allé 345
DK - 2605 Brøndby
Denmark

Person responsible: Lars Poder

Applicant/Manufacturer
Name and address:

Siemens A/S Flow Instruments
Nordborgvej 81
DK - 6430 Nordborg
Denmark

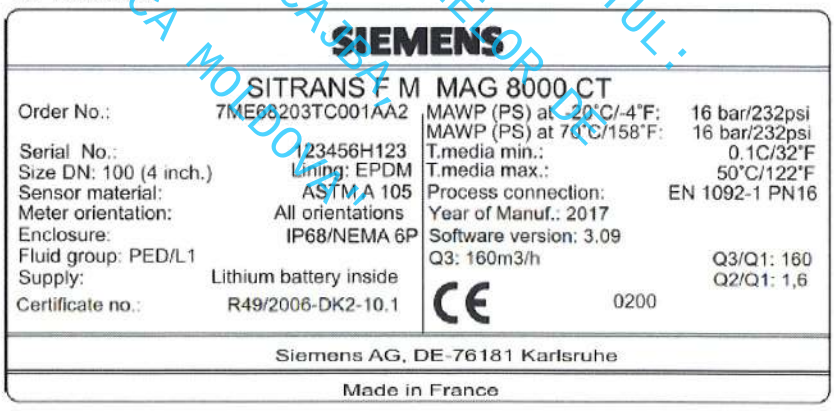
Identification of the certified type: Water meter, electromagnetic flow meter

Type designation: MAG5100W DN50 - 300 with MAG8000CT

Corrections:

a) New address
The manufacturers name and address have been changed from the name and address as follows:
Siemens AG
DE - 76181 Karlsruhe
Germany

b) New example of a label on page 5
The label has been changed because of the change of address as follows:



Issuing Authority: FORCE Certification A/S, OIML Issuing Authority DK2
9 March 2018

Lars Poder
Certification Manager

Physikalisch-Technische Bundesanstalt
Nationales Metrologieinstitut

KBS
Konformitätsbewertungsstelle

Baumusterprüfbescheinigung

Type-examination Certificate

Ausgestellt für: *Issued to:*	Siemens AG 76181 Karlsruhe
gemäß: *In accordance with:*	Anlage 4 Modul B der Mess- und Eichverordnung vom 11.12.2014 (BGBl. I S. 2010) *Annex 4 Modul B of the Measures and Verification Ordinance dated 11.12.2014 (Federal Law Gazette I, p. 2010)*
Geräteart: *Type of instrument:*	Durchflusssensor für Kältezähler *Flow sensor for cooling meter* SITRANS F M MAG 5100 W mit MAG 5000CT oder MAG 6000CT, oder MAG 8000CT
Typbezeichnung: *Type designation:*	7ME652 mit 7ME691 (MAG5000CT) oder 7ME692 (MAG6000CT), oder 7ME682 (MAG8000CT)
Nr. der Bescheinigung: *Certificate No.:*	DE-19-M-PTB-0041
Gültig bis: *Valid until:*	12.07.2029
Anzahl der Seiten: *Number of pages:*	30
Geschäftszeichen: *Reference No.:*	PTB-7.5-4087944
Nr. der Stelle: *Body No.:*	0102

Zertifizierung:
Certification:
Im Auftrag
On behalf of PTB
Gerlinde Eichhorn

Berlin, 12.07.2019
Siegel
Seal

Bewertung:
Evaluation:
Im Auftrag
On behalf of PTB
Dr. Jürgen Rose

Zertifikatsgeschichte

History of the Certificate

Zertifikats-Ausgabe *Issue of the Certificate*	**Gesch.-Z.** *Reference No.*	**Datum** *Date*	**Änderungen** *Modifications*
DE-19-M-PTB-0041	PTB-7.5-4087944	12.07.2019	Erstbescheinigung *Initial certificate*

Vorbemerkungen

Preliminary remarks

Für die in dieser Bescheinigung genannten Geräte gelten die folgenden wesentlichen Anforderungen gemäß
For the instruments mentioned in this Certificate, the following essential requirements apply in accordance with

§ 6 des Mess- und Eichgesetzes vom 25.07.2013 (BGBl. I S. 2722), zuletzt geändert durch Artikel 1 des Gesetzes vom 11.04.2016 (BGBl. I S. 718)

in Verbindung mit

§ 7 der Mess- und Eichverordnung vom 11.12.2014 (BGBl. I S. 2010), zuletzt geändert durch Artikel 3 der Verordnung vom 30.04.2019 (BGBl. I S. 579).

Section 6 of the Measures and Verification Act of 25.07.2013 (Federal Law Gazette – BGBl. I p. 2722), last amended by article 1 of the Act of 11.04.2016 (BGBl. I p. 718), in connection with Section 7 of the Measures and Verification Ordinance of 11.12.2014 (Federal Law Gazette – BGBl. I, p. 2010), last amended by article 3 of the Ordinance of 30.04.2019 (BGBl. I p. 579).

Für die Geräte werden folgende [vom Regelermittlungsausschuss am 25.09.2018 ermittelte] technische Spezifikationen angewendet:
For the instruments, the following technical specifications [determined by the Rule Determination Committee on 25.09.2018] will be applied:

- Technische Richtlinie der PTB K 7.2 zur messtechnischen Prüfung von Kältezählern und kombinierten Kälte-/Wärmezählern, Ausgabe November 2006
- Anforderungen der PTB A 50.7 an elektronische und softwaregesteuerte Messgeräte und Zusatzeinrichtungen für Elektrizität, Gas, Wasser und Wärme einschließlich der Anhänge 1, 2 und 3, Ausgabe April 2002
- Anforderungen der PTB A 50.1 Schnittstellen an Messgeräten und Zusatzeinrichtungen, Ausgabe Dezember 1989

Für die Geräte werden zusätzlich folgende Spezifikationen angewendet:
For the instruments, the following technical specifications will be applied additionally:

- DIN EN 1434 (2015)
- WELMEC-Leitfaden 7.2 (2018)
- AGFW-Anforderungen FW 510 an Kreislaufwasser von Industrie- und Fernwärmeheizanlagen sowie Hinweise auf deren Betrieb (2003). AGFW | Der Energieeffiziverband für Wärme, Kälte und KWK e.V.
- EU-Konformität, OIML R49, MID-001, EN 1434

Ergebnis der Prüfung:
Der nachfolgend beschriebene technische Entwurf des Messgeräts entspricht den o. g. wesentlichen Anforderungen. Mit dieser Bescheinigung ist die Berechtigung verbunden, die in Übereinstimmung mit dieser Bescheinigung gefertigten Geräte mit der Nummer dieser Bescheinigung zu versehen.
Conclusions of the examination: The measuring instrument's technical design which is described below complies with the above-mentioned essential requirements. With this Certificate, permission is given to attach the number of this Certificate to the instruments that have been manufactured in compliance with this Certificate.

Die Geräte müssen folgenden Festlegungen entsprechen:
The instruments must meet the following provisions:

1 Bauartbeschreibung
Design of the instrument

1.1 Aufbau
Construction

Mikroprozessorgesteuerter Durchflusssensor nach dem Magnetisch-Induktiven Messprinzip zur Verwendung als Teilgerät eines Kältezählers für den wahlweisen Einbau im Vor- oder Rücklauf eines Wärmetauscher-Kreislaufsystems. Baureihen: Messaufnehmer Typ MAG 5100W in wahlweiser Kombination mit den Messumformern MAG 5000CT/6000CT (mit Display) oder MAG 8000CT.

MAG 5000/6000

MAG 8000

1.2 Messwertaufnehmer

Sensor

Ausführung Magnetisch-Induktiver Durchflusssensor MAG 5100W mit Steuerelektronik wahlweise der Ausführungen MAG 5000CT/6000CT oder MAG 8000CT zum volumen- oder volumenstromwertigen Signalausgang für den Anschluss an ein separat konformitätsuntersuchtes bzw. geeichtes Rechenwerk für Kältezähler.

1.3 Messwertverarbeitung

Measurement value processing

Die Durchflussbestimmung basiert auf dem Prinzip der Magnetisch-Induktiven Durchflussmessmethode unter elektronischer Ableitung eines z.B. impuls-proportionalen Volumensignal durch identifizierbare Software gemäß Ziffer 5.3.

1.4 Messwertanzeige

Indication of the measurement results

Baureihe MAG 5000CT/6000CT und MAG 8000CT mit zusätzlicher Displayanzeige u.a. zum Volumen außerhalb der Eichpflicht.

1.5 Optionale Einrichtungen und Funktionen

Optional equipment and functions

Wahlweise sind ab Auslieferung rückwirkungsfreie Fernauslesemodule gemäß Ziffer 1.7 und Ziffer 3 optional eingebaut.

1.6 Technische Unterlagen

Technical documents

Die zu diesem Zertifikat gehörenden technischen Unterlagen sind im zugehörigen Zertifizierungs-Dokumentensatz in der PTB hinterlegt. Das Inhaltsverzeichnis des Zertifizierungs-Dokumentensatzes wurde dem Inhaber des Zertifikats zugeschickt.
The technical documents relating to this Certificate are deposited at PTB in the respective Set of Certification Documents. The Table of Contents of the Set of Certification Documents was sent to the owner of the Certificate.

1.7 Integrierte Einrichtungen und Funktionen, die nicht in den Geltungsbereich dieser Baumusterprüfbescheinigung fallen

Integrated equipment and functions which do not fall into the validity range of this Type-examination Certificate

Der Messumformer MAG 5000CT/6000CT und MAG 8000CT besitzt ein Display zur zusätzlichen Anzeige von Durchfluss und anderer Messwerte.

2 Technische Daten

Technical data

2.1 Nennbetriebsbedingungen

Rated operating conditions

- Messgröße und Messbereich

Measurand and Measurement range

SITRANS F M MAG 5100W mit MAG 5000CT/ MAG 6000CT

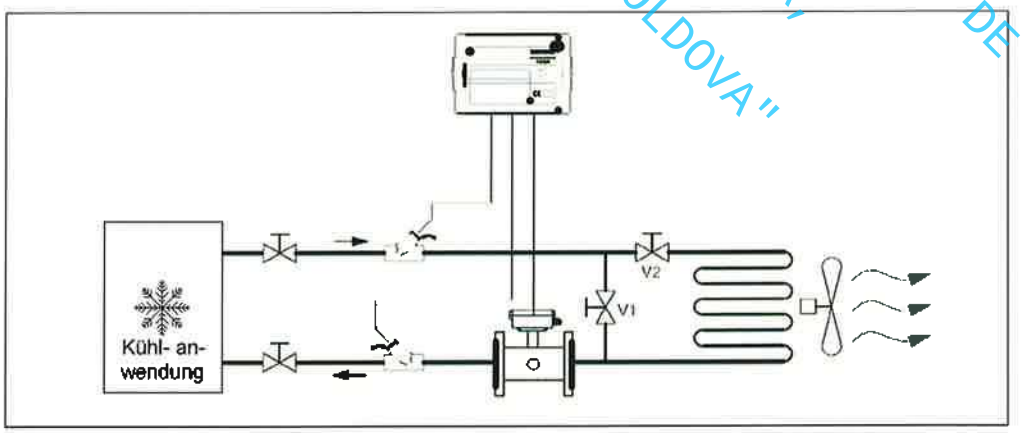
- Nennweiten: DN 15 bis DN 1200 (½" bis 48")
- Einbau in beliebiger Richtung: DN 15 bis DN 300 (½" bis 12")
- Horizontaler Einbau: DN 350 bis DN 1200 (14" to 48")
- Kompakt oder getrennt mit max. 500 m (1640 Fuß) langem Kabel

- Druck: DN 15 ...DN 40: 0,01 ... 40 bar
  DN 40 ..DN 1200: 0,03 ... 16 bar

- Temperatur: Medien: +0,1 ... +50 °C (+32 ... +122 °F)
  Lagerung: -40 ... +70 °C (-22 ... +158 °F)

- Ausgang: Frequenz: 0 ... 10 kHz (programmierbar)
  Impuls (aktiv): programmierbar, DC 24 V, 30 mA, kurzschlussfest, Stromversorgung vom Durchflussmessgerät
  Impuls (passiv): programmierbar, DC 3 ... 30 V, max. 110 mA, Stromversorgung vom angeschlossenen Gerät
  Zeitkonstante: 0,1 ... 30 s (einstellbar)

- Einbaubedingungen



Messbereiche nach EN 1434 (2015)

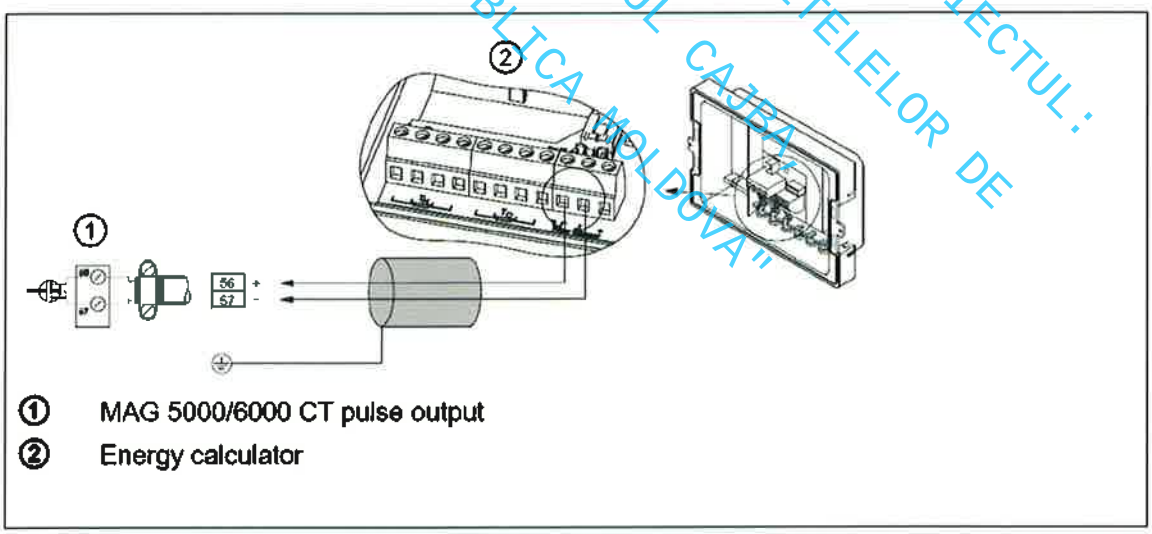
DN	15	25	40	50	65	80	100	125	150	200	250	300
Q_P /Q_I	100	100	100	100	100	100	100	100	100	100	100	100
Q_S (1,25*Q_P)	5,00	11,0	31,25	62,50	78,75	125,0	200,0	312,5	500,0	787,5	1250,0	2000,0
Q_P	4,00	9,00	25,0	50,0	63,0	100,0	160,0	250,0	400,0	630,0	1000,0	1600,0
Q_I	0,04	0,09	0,25	0,50	0,63	1,00	1,60	2,50	4,00	6,30	10,00	16,0

DN	350	400	450	500	600	700	750	800	900	1000	1200
Q_P /Q_I	100	100	100	100	100	100	100	100	100	100	100
Q_S (1,25*Q_P)	2000	3125	5000	5000	7875	7875	7875	7875	7875	7875	7875
Q_P	1600	2500	4000	4000	6300	6300	6300	6300	6300	6300	6300
Q_I	16	25	40	40	63	63	63	63	63	63	63

DN	15	25	40	50	65	80	100	125	150	200	250	300
Q_P /Q_I	100	100	100	250	250	250	250	250	250	250	250	250
Q_S (1,25*Q_P)	5,00	5,00	12,50	50,00	78,75	125,0	200,0	312,5	500,0	787,5	1250	2000
Q_P	4	4	10	40	63	100	160	250	400	630	1000	1600
Q_I	0,04	0,04	0,10	0,16	0,25	0,40	0,64	1,00	1,60	2,52	4,0	6,4

Diese Übersicht zeigt die maximalen Spezifikationen der Durchflusswerte. Weitere Durchflusswerte sind erlaubt gemäß Dokument A5E44461274A unter der Voraussetzung, dass das Verhältnis zwischen dem Dauerdurchfluss und der unteren Grenze des Durchflusses (Qp/Qi) 25, 50, 100 oder 250 beträgt.

- Elektrischer Anschluss



① MAG 5000/6000 CT pulse output
② Energy calculator

SITRANS F M MAG 8000 CT

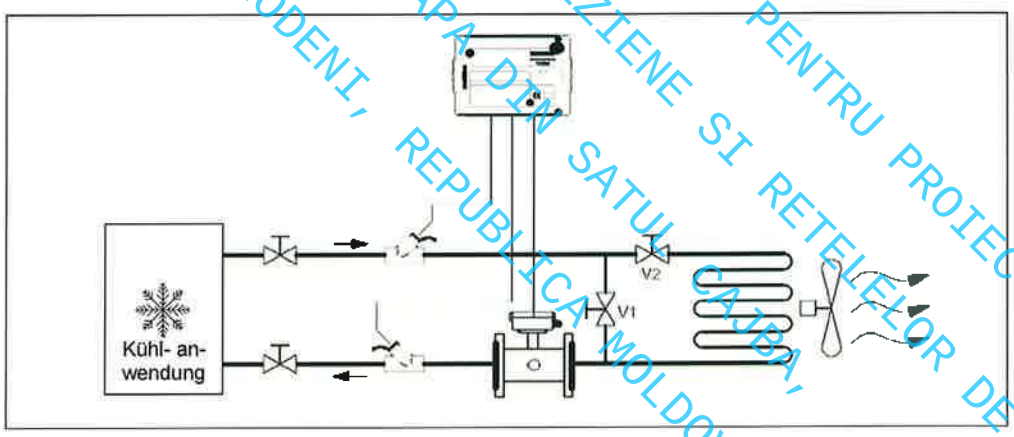
- Nennweiten: DN 50 bis DN 600 (2" bis 24")
- Einbau in beliebiger Richtung: DN 50 bis DN 150 (2" to 6")
- Horizontaler Einbau: DN 200 bis DN 600 (8" to 24")
- Kompakt oder getrennt mit max. 30 m (98 Fuß) langem Kabel

- Druck: DN 50 ... DN 600: 0,01 ... 16 bar

- Temperatur: Medien: +0,1 ... +50 °C (+32 ... +122 °F)
  Lagerung: -40 ... +70 °C (-22 ... +158 °F)

- Ausgang: 2 Ausgänge (passiv), programmierbar, einzeln galvanisch getrennt
  Max. Last: 35 V DC, 50 mA, kurzschlussfest
  Ausgang A: Impulsvolumen
  Ausgang B: programmierbar auf Impulsvolumen (wie Ausgang A), Alarm
  Max. Impulsrate: 50 Hz (Grundversion), 100 Hz (Advanced-Version)
  Impulslänge: 5, 10, 25, 100, oder 500 ms (einstellbar)
  Hoher Impulsausgang für Überprüfung (max. Impulsrate 1000 Hz)

- Einbaubedingungen



Messbereiche nach EN 1434 (2015)

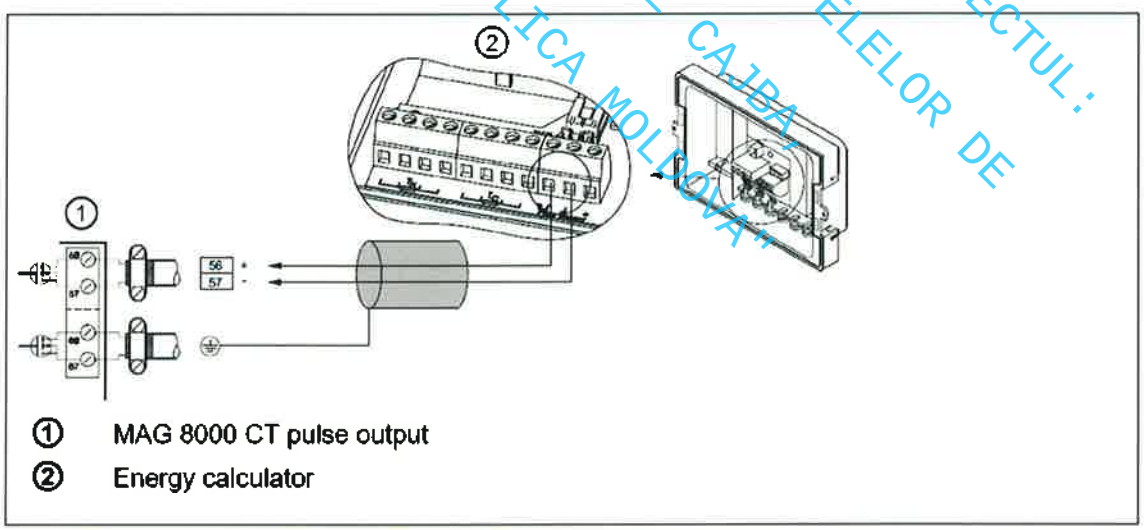
DN	50	65	80	100	125	150	200	250	300
Q_P /Q_I	100	100	100	100	100	100	100	100	100
Q_S (1,25*Q_P)	31,25	50,00	78,75	125,0	200,0	312,5	500,0	787,5	1250,0
Q_P	25,0	40,0	63,0	100,0	160,0	250,0	400,0	630,0	1000,0
Q_I	0,25	0,40	0,63	1,00	1,60	2,50	4,00	6,30	10,0

DN	350	400	450	500	600
Q_P /Q_I	100	100	100	100	100
Q_S (1,25*Q_P)	1250	2000	5000	7875	7875
Q_P	1000	1600	4000	6300	6300
Q_I	10	16	40	63	63

DN	50	65	80	100	125	150	200	250
Q_P /Q_I	250	250	250	250	250	250	250	250
Q_S (1,25*Q_P)	78,75	125,0	200,0	312,5	500,0	787,5	1250,0	2000,0
Q_P	63,0	100,0	160,0	250,0	400,0	630,0	1000,0	1600,0
Q_I	0,25	0,40	0,64	1,00	1,60	2,52	4,00	6,40

Diese Übersicht zeigt die maximalen Spezifikationen der Durchflusswerte. Weitere Durchflusswerte sind erlaubt gemäß Dokument A5E44461274A unter der Voraussetzung, dass das Verhältnis zwischen dem Dauerdurchfluss und der unteren Grenze des Durchflusses (Qp/Qi) 25, 50, 100 oder 250 beträgt.

- Elektrischer Anschluss



① MAG 8000 CT pulse output
② Energy calculator

- Genauigkeitsklasse
Accuracy class

Genauigkeitsklasse 2 gemäß EN 1434 (2015)

- Umgebungsbedingungen/Einflussgrößen
Environmental conditions / influence quantities

- klimatisch
Climatic

höchste Umgebungstemperatur:	+55 °C,
niedrigste Umgebungstemperatur:	-25 °C,
Feuchtigkeitsklasse	MAG5000/6000 IP 67 MAG8000 IP68

- mechanisch
Mechanical

M1

- elektromagnetisch
electromagnetic

E2

2.2 Sonstige Betriebsbedingungen
Other operating conditions

Wärmeträger: Wasser, Einsatzbereich Kühlung

Druckstufe: wahlweise PN/PS 16 oder PN/PS 40

Minimaler Druck in Abhängigkeit vom Durchfluss (zur Vermeidung von Kavitation): 0,01 bar

Versorgung mit Hilfsenergie durch Netzanschluss:

MAG5/6000:	115-230V AC 50-60Hz oder DC 11-30V / AC 11-24V
MAG8000:	AC/DC 12-24V oder 115-230V AC 50-60Hz oder interne oder externe Lithium Batterie 3,6V

3 Schnittstellen und Kompatibilitätsbedingungen
Interfaces and compatibility conditions

Galvanisch getrennte und verbundene Module:

Impulsausgänge intern im Messumformer getrennt.

MAG5000/6000CT:	Keine Kommunikationsmodule zugelassen.
MAG8000 CT:	IrDA Infrarot Datenübertragungsschnittstelle mit MODBUS RTU Protokoll oder über ein optionales wireless communication module.

4 Anforderungen an Produktion, Inbetriebnahme und Verwendung

Requirements on production, putting into use and utilisation

4.1 Anforderungen an die Produktion

Requirements on production

Zur Sicherstellung der Einhaltung der Fehlergrenzen hat der Fertigungs-, Abgleich- und Prüfprozess nach den Vorgaben gemäß den Unterlagen unter Ziffer 1.6 zu erfolgen.

Die Software besteht aus dem kompletten Funktionsblock mit allen rückwirkungsfreien optionalen Zusatzfunktionen. Hierzu ist die jeweilige Softwareversionsnummer gemäß Ziffer 5.3 zu verwenden.

In der Installationsanleitung sind ausschließlich die in dieser Baumusterprüfbescheinigung definierten Nennbetriebs-, Umgebungs- und sonstigen Bedingungen sowie die Vorgaben für den Einbau des Durchflusssensors, dessen Inbetriebnahme und Verwendung festzuhalten.

4.2 Anforderungen an die Inbetriebnahme

Requirements on putting into use

In der Installationsanleitung sind neben Einbauvorgaben Hinweise zur Begrenzung der vom Monteur am Einbauort anzubringenden Verbindungsleitung sowie zu Sicherungsmaßnahmen der elektrischen Anschlussbereiche für den Messgeräteverwender nach den Vorgaben unter Ziffer 6 angegeben.

Besondere Vorgaben über ungestörte gerade Zu- und Ablauflängen zum Durchflusssensor existieren nicht. Allerdings werden im Interesse der Erhöhung der Messgenauigkeit mindestens 5 * DN für den Zulauf und mindestens 2 * DN für den Ablauf sowie bei Anlagen mit unzureichender Temperaturdurchmischung bzw. mit Temperaturschichtung ungestörte gerade Zulauflängen von 10 * DN am Einbauort empfohlen.

4.3 Anforderungen an die Verwendung

Requirements for consistent utilisation

Angaben zur Messbeständigkeit gelten unter der Einhaltung der Umgebungsbedingungen und einer Wasserzusammensetzung gemäß AGFW-Anforderungen FW 510. Im Falle abweichender Zusammensetzungen muss das Messgerät ausgebaut und regelmäßigen Instandsetzungen unterzogen werden. Es dürfen nur Originalbauteile unter den Vorgehensweisen nach den anerkannten Regeln der Technik verwendet werden. Reparatur- und Servicearbeiten dürfen nur durch Personal ausgeführt werden, das von Siemens hierfür zugelassen ist.

5 Kontrolle in Betrieb befindlicher Geräte

Checking of instruments which are in operation

5.1 Unterlagen für die Prüfung

Documents required for the test

Prüfanleitung zur Eichtechnischen Prüfung von Durchflusssensoren für Kältezähler MAG5100 5000/6000 (CT) und MAG8000 (CT), Stand gemäß Zertifizierungsdokumentensatz

5.2 Spezielle Prüfeinrichtungen oder Software

Special test facilities or software

Gegenüber DIN EN 1434-5 und TR K 7.2 sind keine besonderen Prüfeinrichtungen notwendig. Zusätzlich können spezielle Verfahren und Einrichtungen unter Ziffer 5.1 zur Anwendung kommen.

5.3 Identifizierung

Identification

- Hardware

Leiterplattenaufdrucke:

MAG5000/6000CT:

PCBA ID	Revision	Kommentar
A5E01154054001	011	230 Volt Version
A5E01154054002	010	24 Volt Version

MAG8000CT:

PCBA ID	Revision	Kommentar
087L4210	RS-AA/001	POWER SUPPLY 12-24VAC/DC
087L4211	RS-AA/002	POWER SUPPLY 85-264VAC

- Software

Am Display abrufbare Versionsnummern der Software:

	Version	CRC-16 Checksumme
MAG 5000CT	4.09 X05	4DDA8DBEF84A2BAB1A28EABF27CE3A08
MAG 6000CT	4.09 X02	A39561F596DE3DCC2C554698584DC083
MAG 8000CT	3.07	B400612EAB7877459BF1648CEF5DABB4
MAG 8000CT	3.09	9652AA52EA3CBEFB6EF93CB1AEFE6F11

Es werden CRC-16 Checksummenzeichen über die auslieferungsabhängigen Geräteparameter während der Produktion gebildet und gemeinsam mit den Ergebnissen der messtechnischen Schlussprüfung und der Geräteseriennummer archiviert.

5.4 Kalibrier- und Justierverfahren
Calibration-/adjustment procedure

Zum Nachweis der Einhaltung der Fehlergrenzen für Durchflusssensoren von Kältezählern (MPE) nach der TR K 7.2 erfolgt gemäß den Angaben in den Unterlagen unter Ziffer 5.1 und 5.2 unter Beachtung der EN 1434-5 die messtechnische Prüfung.

Die Werte des hochaufgelösten Prüfausganges müssen mit der Volumenanzeige im Normalzustand übereinstimmen. Bei prüfintegrierter Abfrage unter Benutzung einer Prüfsumme (CRC-16 Checksummenzeichen) kann dieser Test nach Produktionsanlauf entfallen.

6 Sicherungsmaßnahmen
Security measures

6.1 Mechanische Siegel
Mechanical seals

Sicherungen: Zeichnungen siehe unter Ziffer 8, Stand gemäß Zertifizierungsdokumentensatz

6.2 Elektronische Siegel
Electronic seals

- keine

Eichtechnisches Logbuch: Datenlogger mit Speicherung von Fehlermeldungen, keine Parametriermöglichkeit am Einbauort (siehe unter Ziffer 8)

7 Kennzeichnungen und Aufschriften
Labelling and inscriptions

7.1 Informationen, die dem Gerät beizufügen sind
Information to be enclosed with the instrument

Installationsanleitung, Stand gemäß Zertifizierungsdokumentensatz

7.2 Kennzeichen und Aufschriften
Markings and inscriptions

Typenschild: Zeichnungen siehe unter Ziffer 8, Stand gemäß Zertifizierungsdokumentensatz

Oberhalb und unterhalb der LCD-Anzeige und des Typenschildes können kundenspezifische Logos oder Kennzeichnungen angebracht werden. Der Inhalt des Typenschildes und die Herstellerkennzeichnungen bleiben davon unberührt.

8 Abbildungen

Figures

Prüfanleitung zur Eichtechnischen Prüfung von Durchflusssensoren für Kältezähler MAG 5100 W 5000/6000 (CT) und MAG8000 (CT) und Datenlogger, Stand gemäß Zertifizierungsdokumentensatz

Zeichnungen Sicherungen, Stand gemäß Zertifizierungsdokumentensatz

Zeichnungen Typenschild, (Stand gemäß Zertifizierungsdokumentensatz

SIEMENS

Prüfanleitung zur Eichtechnischen Prüfung von Durchflusssensoren für Kältezähler MAG5100 5000/6000 (CT) und MAG8000 (CT)

1. **Vorbereitung zur Eichung**
   Vor Beginn der Messtechnischen Prüfung ist der Durchflusssensor zu reinigen und auf eventuelle Beschädigungen oder Fehlermeldungen zu untersuchen. Die Reinigung kann mit einem feuchten Tuch erfolgen.

2. **Hinweis**
   Reparatur- und Servicearbeiten dürfen nur durch Personal ausgeführt werden, das von Siemens Flow Instruments hierfür zugelassen ist.
   Alle Arbeiten, die sicherheits- oder eichrelevant sind, dürfen nur von geschultem Personal der Prüf- oder Revisionsstellen für Durchflussmessgeräte durchgeführt werden.

3. **Eichung**
   Die Eichung der Durchflusssensoren für Kühlbetrieb ist bei einer Wassertemperatur von 15 ±5°C in folgenden Durchflussbereichen durchzuführen:

   - $q_i \leq q \leq 1{,}1\ q_i$
   - $0{,}1\ q_p \leq q \leq 0{,}11 q_p$
   - $0{,}9\ q_p \leq q \leq 1{,}0 q_p$

   Für die Messtechnische Prüfung des Durchflusssensors wird der Frequenzausgang bzw. Impulsausgang des zugehörigen Messumformers benutzt.
   Bei der Prüfung der Durchflusssensoren ist sämtlichen im Bauartzulassungszeugnis und in der Bedienungsanleitung enthaltenen Hinweisen zu folgen (z.B. Anforderungen bezüglich der geraden Ein- und Auslaufstrecken, Einbaulagen, Impulswertigkeiten, elektrische Leitfähigkeit des Wassers usw.)

   Bei der Eichung der Durchflusssensoren für Kühlbetrieb gelten die Fehlergrenzen gemäß den spezifischen Anforderungen MI-004 der Richtlinie 2014/32/EU des Europäischen Parlaments und Rates vom 26. Februar 2014 über Messgeräte (MID).

4. **Eichtechnische Sicherung**
   Nach erfolgreicher Eichung ist das Gerät an denen auf Seite 12 und 13 des Bauartzulassungszeugnisses beschriebenen Stellen zu Plombieren.

SIEMENS

Datenlogger MAG5000/6000 (CT)

Fehlersystem

Der Messumformer ist mit einem Fehler- und Statusprotokollsystem mit vier Informationsgruppen ausgestattet.

(I) Information - Das System misst normal weiter, Relais- und Stromausgänge sind nicht beeinträchtigt.

(W) Warnung - Das System misst weiter, doch es ist ein Ereignis aufgetreten, das zu einer Fehlfunktion des Systems führen kann und die Aufmerksamkeit des Bedieners erfordert. Die Fehlerursache verschwindet möglicherweise von selbst.

(P) Permanenter Fehler - Kann zu Fehlfunktion in der Anwendung führen, Bedienereingriff ist erforderlich.

(F) Schwerer Fehler - Wirkt sich erheblich auf den Betrieb des Durchflussmessers aus. Sofortiger Bedienereingriff ist erforderlich.

Für die Registrierung von Informationen und Fehlern stehen zwei Menüs in den Service- und Bedienermenüs zur Verfügung.

- Anstehende Fehler
- Statusprotokoll

Anstehende Fehler

Die ersten neun anstehenden Fehler werden in der Liste der anstehenden Fehler gespeichert. Wird der Fehler behoben, wird er aus der Liste der anstehenden Fehler gelöscht.

Die Akzeptanzstufe für "anstehende Fehler" kann für bestimmte Anwendungen individuell konfiguriert werden.

Die Akzeptanzstufe wird im Grundeinstellungsmenü (Seite 41) festgelegt.

Akzeptanzstufen

Die folgenden drei Akzeptanzstufen sind wählbar.

- Schwerer Fehler: Nur schwere Fehler werden als Fehler registriert.
- Permanenter Fehler: Permanente und schwere Fehler werden als Fehler registriert.
- Warnung (Voreinstellung): Warnungen, permanente und schwere Fehler werden als Fehler registriert.

Die Fehlerinformationen werden in Titelzeilen und untergeordneten Titelzeilen angezeigt, siehe Layout der Anzeige (Seite 38). Die Titelzeile zeigt den Zeitraum seit Auftreten des Fehlers in Tagen, Stunden und Minuten an. Die untergeordnete Titelzeile zeigt abwechselnd einen Fehlertext und einen Text für die Abhilfe an. Der Fehlertext weist auf Fehlertyp (I, W, P oder F), Fehlernummer und Fehlertext hin. Der Text für die Abhilfe informiert den Bedienер über zu ergreifende Maßnahmen, um den Fehler zu beheben.

Statusprotokoll

Die letzten neun Fehler werden im Statusprotokoll gespeichert. Die Fehler werden 180 Tage lang im Statusprotokoll gespeichert, auch wenn sie behoben sind.

Alarmfeld

Das Alarmfeld auf der Anzeige blinkt ständig, wenn ein Fehler ansteht.

Fehlerausgang

Digital- und Relaisausgang können für jeden Fehler einzeln aktiviert werden (Fehlerstufe). Der Relaisausgang ist die für die Fehlerstufe gewählte Voreinstellung. Ein Ausgang kann auch so eingestellt werden, dass er bei einer einzelnen Fehlernummer aktiviert wird.

Alarmfeld, Fehlerausgang und anstehende Fehler funktionieren immer gemeinsam.

Der Analogausgang geht im Modus 4 ... 20 mA auf den Pegel 1 mA.

Bedienermenü

Anstehende Fehler und Statusprotokoll sind im Bedienermenü standardmäßig aktiviert ( ).

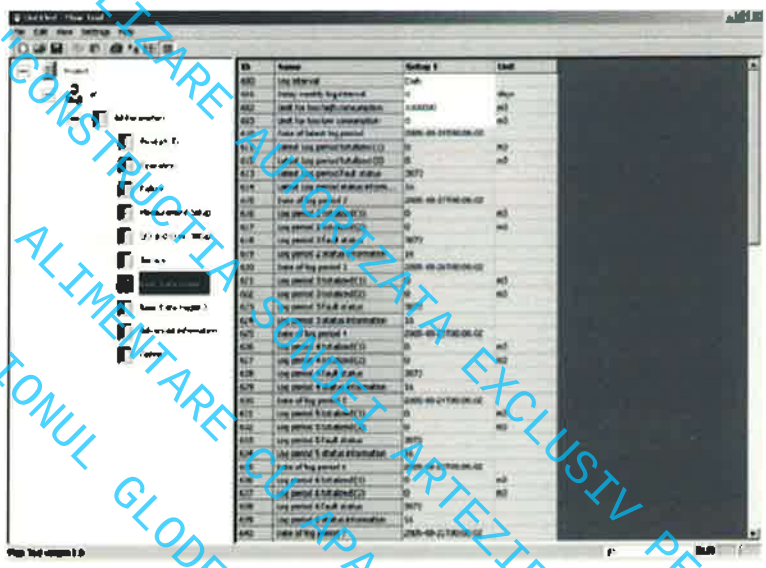
Liste der Fehlernummern

Fehler nummer	*Fehlertext* Text für die Abhilfe	Anmerkung	Ausgangs-status	Eingangs-status
1	*I1 - Spannung ein* OK	Gerät ist eingeschaltet	Aktiv	Aktiv
2	*I2 - Zusatzmodul* Vorhanden	Ein neues Modul wurde ins System eingebaut	Aktiv	Aktiv
3	*I3 - Zusatzmodul* Installieren	Ein Zusatzmodul ist defekt oder wurde ausgebaut. Hierbei kann es sich um ein internes Zusatzmodul handeln.	Aktiv	Aktiv
4	*I4 - Param. korrigiert* OK	Ein weniger kritischer Parameter des Messumformers wurde durch den Standardwert ersetzt.	Aktiv	Aktiv
20	*W20 - Summierer 1* Manuell zurücksetzen	Während der Initialisierung ergab die Prüfung des gespeicherten Summiererwerts einen Fehler. Sie können sich nicht mehr auf den gespeicherten Summiererwert verlassen. Sie müssen den Summiererwert manuell zurücksetzen, um sich auf künftige Messwerte verlassen zu können.	Aktiv	Aktiv
20	*W20 - Summierer 2* Manuell zurücksetzen	Während der Initialisierung ergab die Prüfung des gespeicherten Summiererwerts einen Fehler. Sie können sich nicht mehr auf den gespeicherten Summiererwert verlassen. Sie müssen den Summiererwert manuell zurücksetzen, um sich auf künftige Messwerte verlassen zu können.	Aktiv	Aktiv
21	*W21 - Impulsüberlauf* Impulseinstellungen ändern	Der tatsächliche Durchfluss ist im Vergleich zur Impulsbreite und zum Volumen/Impuls zu groß.	Verringerte Impulsbreite	Aktiv
22	*W22 - Zeitüberschreitung Charge* Installation prüfen	Die Chargendauer hat eine vorgegebene Maximalzeit überschritten.	Chargenausgang auf Null	Aktiv
23	*W23 - Chargenüberlauf* Installation prüfen	Das Chargenvolumen hat ein festgelegtes Maximalüberlaufvolumen überschritten.	Chargenausgang auf Null	Aktiv
24	*W24 - Neg. Chargenfluss* Strömungsrichtung prüfen	Negative Strömungsrichtung während Charge	Aktiv	Aktiv
30	*W30 - Überlauf* Q_{max} anpassen	Durchfluss ist größer als Einstellung Q_{max}	Max. 120 %	Aktiv
31	*W31 - Leerrohr*	Rohr ist leer	Null	Aktiv
40	*P40 - SENSORPROM®* Einbauen/wechseln	SENSORPROM® ist nicht eingebaut	Aktiv	Aktiv

41	*P41 - Parameterbereich* Aus- und einschalten	Ein Parameter ist außerhalb des Bereichs. Der Parameter konnte nicht durch den Standardwert ersetzt werden. Der Fehler wird beim nächsten Einschalten nicht mehr angezeigt.	Aktiv	Aktiv
42	*P42 - Stromausgang* Kabel prüfen	Aktuelle Stromschleife ist unterbrochen oder der Schleifenwiderstand ist zu groß.	Aktiv	Aktiv
43	*P43 - Interner Fehler* Aus- und einschalten	Es sind zu viele Fehler gleichzeitig aufgetreten. Einige Fehler werden nicht korrekt erkannt.	Aktiv	Aktiv
44	*P44 - CT SENSORPROM®* 	SENSORPROM®-Speicherbaustein wurde als CT-Ausführung genutzt.	Aktiv	Aktiv
60	*F60 - CAN-Komm.-Fehler* Messumformer/Zusatzmodul	CAN-Bus-Kommunikationsfehler. Ein Zusatzmodul, das Anzeigemodul oder der Messumformer ist defekt.	Null	Inaktiv
61	*F60 - SENSORPROM®-Fehler* Austauschen	Sie können sich auf die Daten im SENSORPROM®-Speicherbaustein nicht mehr verlassen.	Aktiv	Aktiv
62	*F62 - SENSORPROM®-ID* Austauschen	Die ID des SENSORPROM®-Speicherbausteins entspricht nicht der Produkt-ID. Der SENSORPROM®-Speicherbaustein stammt von einem anderen Produkttyp: SITRANS F C, SITRANS F US usw.	Null	Inaktiv
63	*F63 - SENSORPROM®* Austauschen	Der SENSORPROM®-Speicherbaustein lässt sich nicht mehr auslesen.	Aktiv	Aktiv
70	*F70 - Spulenstrom* Kabel prüfen	Die Spulenerregung ist ausgefallen.	Aktiv	Aktiv
71	*F71 - Interner Fehler* Messumformer austauschen	Interner Konvertierungsfehler in ASIC.	Aktiv	Aktiv

SIEMENS

Datenlogger MAG8000



Der integrierte Datenlogger kann Werte für 26 Protokollzeiträume erfassen, in denen die Daten täglich, wöchentlich oder monatlich gespeichert werden.

Der Datenlogger speichert im ausgewählten Zeitraum die von den Zählern 1 und 2 erfassten Verbrauchsdaten.

Der erfasste Verbrauch an vorwärts fließendem Medium wird als positiver Wert, der Verbrauch an rückwärts fließendem Medium als negativer Wert gespeichert.

Für denselben Zeitraum werden außerdem der Alarm- und der Messgerätestatus gespeichert. Dadurch kann nachvollzogen werden, welcher Alarm jeweils aktiv war bzw. dass Abrechnungsdaten im betreffenden Zeitraum beeinflusst wurden.

Die protokollierten Daten sind mit einem Zeit- und Datumsstempel versehen. Die Datenspeicherung im Logger erfolgt kontinuierlich. Dabei werden alte Daten nach dem Prinzip „First in – First out" überschrieben. Die jeweils zuletzt gespeicherten Informationen werden mit Log 1 gekennzeichnet. Bei der nächsten Speicherung von Loggerdaten wird Log 1 in Log 2 umbenannt usw.

Mit dem Verbrauchsalarm wird überwacht, ob der aktuelle Verbrauch an Zähler 1 oberhalb oder unterhalb der Verbrauchsgrenzwerte liegt.

Anwendungskennzeichnung (FT1 und FT2)

Tag-Nummer (bei Ziffernanzeige in der Anzeige sichtbar) und Standort des Messgeräts; bis zu 15 Zeichen je Information.

Uhrzeit und Datum (FT100)

Angabe des aktuellen Datums und der Uhrzeit (max. jährliche Abweichung: 15 min.)

Zähler (FT101 und FT102 und FT103)

- 2 Zähler, vorwärts, rückwärts. Berechnung des bidirektionalen Nettodurchflusses, frei wählbarer Startwert.
- 1 Kundenzähler. Folgt der Einstellung von Zähler 1 und ist über Anzeigetaste oder Software mit Protokollierung von Datum und Uhrzeit zurücksetzbar.

Messung (FT300 ... FT334)

- Frei wählbare Volumen- und Durchflusseinheit. Standardeinheiten in der Anzeige sind m^3 m^3/h. Alle anderen Einheiten werden mit einem Aufkleber auf der Anzeige kenntlich gemacht.
- Anregungsfrequenz bei Batteriebetrieb (manuell ausgewählt):
  - Basic-Ausführung, max. wählbare Anregungsfrequenz 1/15 Hz
  - Advanced-Ausführung, max. wählbare Anregungsfrequenz 6,25 Hz und abhängig vom Messaufnehmer
  - Die Standard-Anregungsfrequenz beim MAG 8000 (7ME6810) und MAG 8000 CT (7ME6820) wird typischerweise für einen Einsatz von 6 Jahren in der Abrechnung ausgewählt:
    1/15 Hz für DN 25 ... 150 (1" ... 6")
    1/30 Hz für DN 200 ... 600 (8" ... 24")
    1/60 Hz für DN 700 ... 1200 (28" ... 48")
- Die Anregungsfrequenz bei Netzspannung entspricht jeweils der maximalen Anregungsfrequenz des Messaufnehmers.
- Filterkonstante bezogen auf Anzahl der Anregungen
- Schleichmengenunterdrückung, 1% von Qn (Q3)
- Leerrohrerkennung (bei Aktivierung erscheint das Symbol in der Anzeige)
- Filterauswahl für Netzstromfrequenz (50/60 Hz)
- Korrekturfaktor für Umkehr der Strömungsrichtung oder zum Einstellen der Durchflussmessung

Datenlogger (FT600 ... FT739)

- Protokollierung von 26 Aufzeichnungen: wählbar als tägliche, wöchentliche oder monatliche Protokollierung
- Jede Protokollierung beinhaltet:
  - Verbrauch nach Zähler 1
  - Verbrauch nach Zähler 2
  - Alarm in aktuellem Zeitraum (13 Alarme)
  - Status des Messgeräts (8 Werte)
  - Alarm wegen zu hohem oder zu niedrigem Verbrauch im ausgewählten Protokollzeitraum
  - Für Zähler 1 können die Werte aller 26 Zeiträume in der Anzeige abgelesen werden

Alarm (FT200 ... FT274)

- Der aktive Alarm erscheint in der Anzeige
- Alle Alarme werden überwacht und einzeln mit statistischen Daten erfasst
  - Gesamtdauer (Stunden) der Aktivierung eines Alarms
  - Anzahl der Aktivierungen des Alarms
  - Zeitpunkt der ersten Anzeige des Alarms
  - Zeitpunkt des letzten Erlöschens des Alarms
- Falls aktiviert: Bei schwerem Fehler wird der Messbetrieb unterbrochen
  - Signalisolierung – Störfestigkeit des Durchflusssignals beeinträchtigt (nur Advanced-Ausführung)
  - Spulenstrom – Fehler beim Ansteuern des Messaufnehmer-Magnetfeldes
  - Verstärker – Fehler im Signalstromkreis
  - Prüfsumme – Fehler bei der Datenberechnung oder -behandlung
- Als Warnung ausgegebene Fehler
  - Spannung niedrig – vom Kunden wählbares Netz- oder Batterie-Spannungsniveau für Alarm wegen Stromausfalls
  - Zu hoher Durchfluss – Durchfluss im Messaufnehmer höher als Qmax (125 % Qn (Q3, Q4))
  - Impulsüberlauf an den Ausgängen A und B – Ausgewähltes Impulsvolumen ist im Vergleich zum tatsächlichen Durchfluss und der max. Ausgangsimpulsrate zu niedrig.
  - Verbrauch – Der im Datenlogger gespeicherte Verbrauch über- bzw. unterschreitet den vom Kunden angegebenen oberen oder unteren Grenzwert
  - Leckage – Leckage gemäß Kundeneinstellungen wurde erkannt (nur bei Advanced-Version)
  - Rohrleitung leer – Kein Wasser in der Rohrleitung/im Messaufnehmer
  - Impedanz zu niedrig – Die gemessene Elektrodenimpedanz liegt unter dem von Kunden festgelegten unteren Grenzwert
  - Durchflussgrenzwert – Der aktuelle Durchfluss überschreitet den ausgewählten oberen Grenzwert für hohen Durchfluss

Messgerätestatus (FT120)

Überwachung wichtiger Abrechnungsparameter und -Daten

- Änderung der Stände von Zähler 1 und 2
- Änderung des Tarifzählers
- Änderung der Tarifeinstellungen
- Änderung von Datum und Uhrzeit
- Alarm wurde ausgelöst (nähere Einzelheiten siehe Alarmprotokoll)
- Fehlerprotokoll wurde zurückgesetzt
- Hardwareschlüssel wurde beschädigt
- Messgerät wurde erneut eingeschaltet

Datenschutz

- Alle Daten werden in einem EEPROM gespeichert. Von den Zählerständen 1 und 2 werden alle 10 Minuten, von den Statistikwerten jede Stunde und von den Stromverbrauchs- und Temperaturmessungen alle 4 Stunden Sicherungskopien angefertigt.
- Passwortschutz aller Parameter und Hardwareschutz der Kalibrier- und Abrechnungsparameter.

Batteriestrommanagement

- Aussagekräftige Informationen zur Restkapazität der Batterie.
- Bei der Kapazitätsberechnung werden alle Verbraucher berücksichtigt. Bei Änderungen in der Umgebungstemperatur wird die verfügbare Kapazität entsprechend korrigiert.

Diagnose

- Laufende Selbsttests, u. a. zu folgenden Kriterien:
  - Spulenstrom zur Ansteuerung des Magnetfelds
  - Signaleingangsstromkreis
  - Datenberechnung, -verarbeitung und -speicherung
- Diagnosefunktionen
  - Alarmstatistik und -protokollierung zwecks Fehleranalyse
  - Impedanz der Elektroden zur Prüfung auf Medienkontakt
  - Durchflusssimulation zur Überprüfung der Impuls- und Kommunikationssignalkette für die korrekte Skalierung
  - Anzahl der Messungen (Anregungen) durch Messaufnehmer
  - Messumformer-Temperatur (zur Berechnung der Batteriekapazität)
  - Alarm wegen zu niedriger Impedanz bei Medienwechsel
  - Durchflussalarm bei Überschreiten definierter Höchstdurchflussmengen
  - Verifizierungsmodus zur schnellen Überprüfung der Messgenauigkeit

- Diagnosefunktionen der Advanced-Ausführung:
  - Prüfung der Isolierung auf Übersprechen
  - Nutzung des Messgeräts
  - Verbrauchsprofil
  - Statistische Durchfluss- und Verbrauchsdaten

Isolationsprüfung (nur Advanced-Ausführung)

Prüfung der Störfestigkeit des Signals gegen Störungen und mangelhafte Anschlüsse. Das Prüfintervall ist wählbar. Für die Dauer der Prüfung (4 min.) Unterbrechung der Messungen.

Leckageerkennung (nur Advanced-Ausführung)

Überwachung des geringsten Durchflusses bzw. Volumens in einem ausgewählten Zeitfenster innerhalb von 24 Stunden. Leckagen werden innerhalb des wählbaren Zeitraums dadurch erkannt, dass der überwachte Wert das mögliche Leckageniveau überschreitet. Die Mindest- und Höchstwerte werden unter Angabe des Datums gespeichert. Der zuletzt gespeicherte Wert wird in der Anzeige ausgegeben.

Nutzung des Messgeräts (nur Advanced-Ausführung)

6 Register zur Überwachung der Gesamtdauer, mit der das Messgerät in verschiedenen Durchflussintervallen betrieben wurde. Die registrierten Intervalle sind frei wählbar und stellen einen Prozentsatz von Qn (Q3) dar.

Tarif (nur Advanced-Ausführung)

6 Tarifregister erfassen das Volumen in den ausgewählten Tarifffenstern und speichern die Information mit Uhrzeit und/oder Durchflussrate.

Die Angabe des Tarifs kann auch für die Erstellung eines Verbrauchsprofils genutzt werden, wenn der Verbrauch auf unterschiedliche Zeitintervalle oder Durchflussraten bezogen ist.

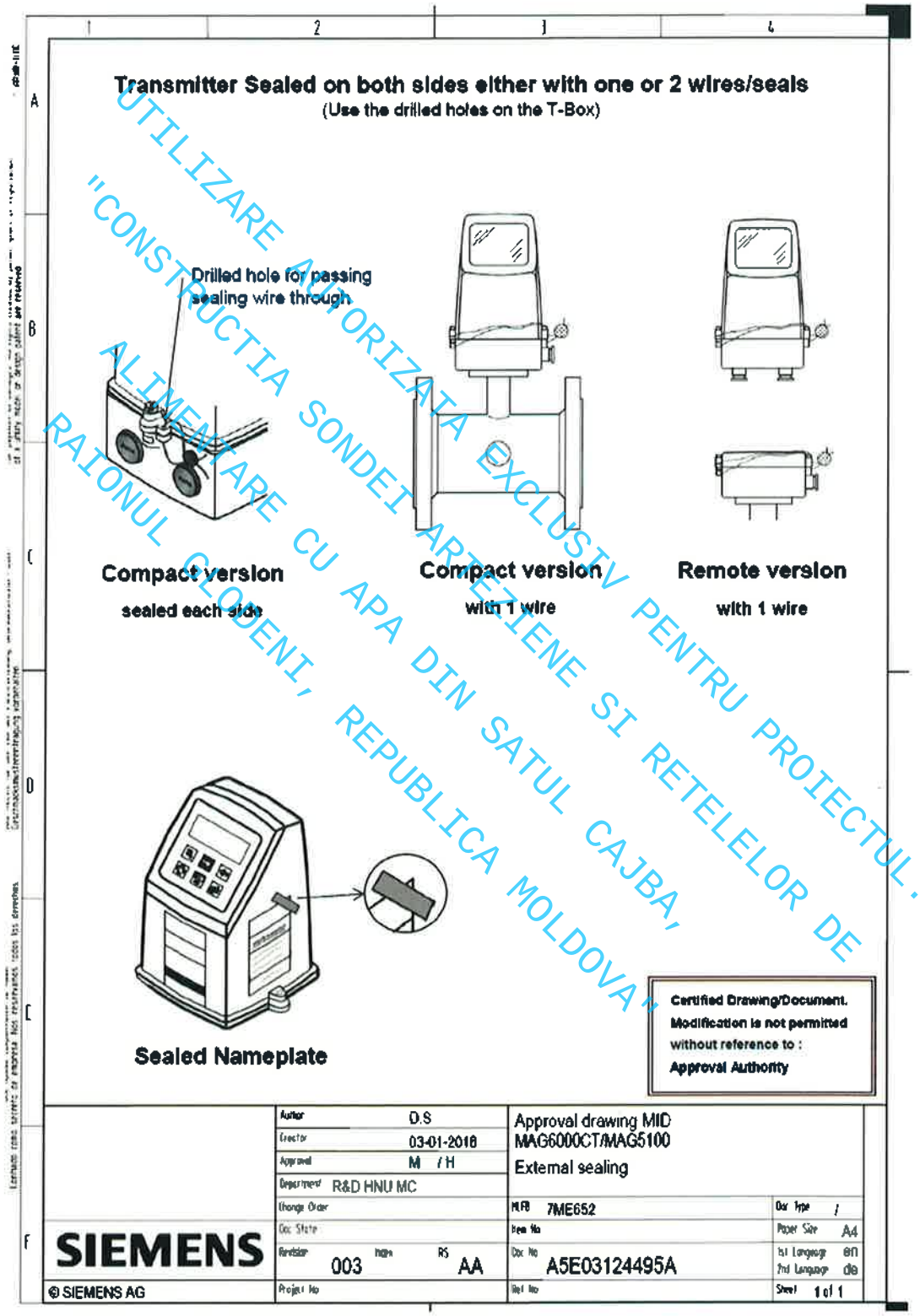
Die Tarifwerte erscheinen in der Anzeige.

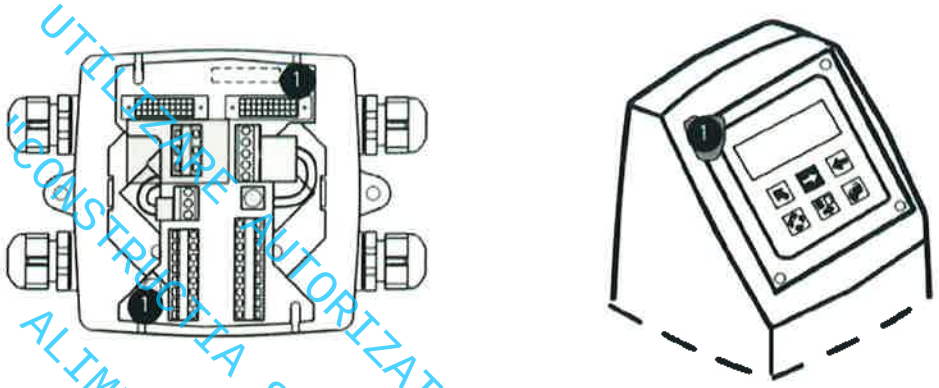
Stichtag (nur Advanced-Ausführung)

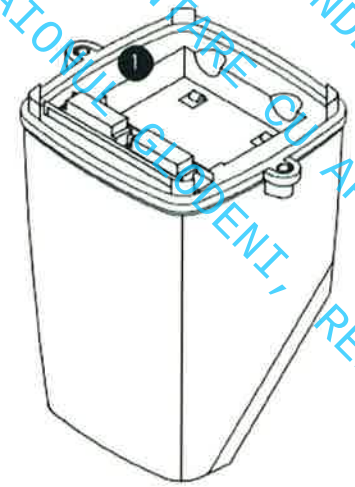
Für ein vordefiniertes Datum wird der Indexwert von Zähler 1 gespeichert. Die vorherigen Werte werden so gespeichert, dass die letzten beiden Summenwerte für den Index von Zähler 1 angezeigt werden können. Die Stichtagswerte erscheinen in der Anzeige.

Statistik (nur Advanced-Ausführung)

- Minimaler Durchfluss mit Registrierung von Uhrzeit und Datum
- Maximaler Durchfluss mit Registrierung von Uhrzeit und Datum
- Minimaler Tagesverbrauch mit Registrierung des Datums
- Maximaler Tagesverbrauch mit Registrierung des Datums
- Gesamtverbrauch und Tagesverbrauch in den letzten 7 Tagen
- Verbrauch im aktuellen Monat
- Verbrauch im letzten Monat







1 Sealing locations

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	Author D.S	Approval drawing MID MAG6000CT/MAG5100 Internal sealing	
	Creator 04-01-2018		
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	Department R&D HNU MC		
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SIEMENS	Doc State	Item No	Paper Size A4
	Revision 002 Index AA	Doc No A5E03125315A	1st Language en 2nd Language de
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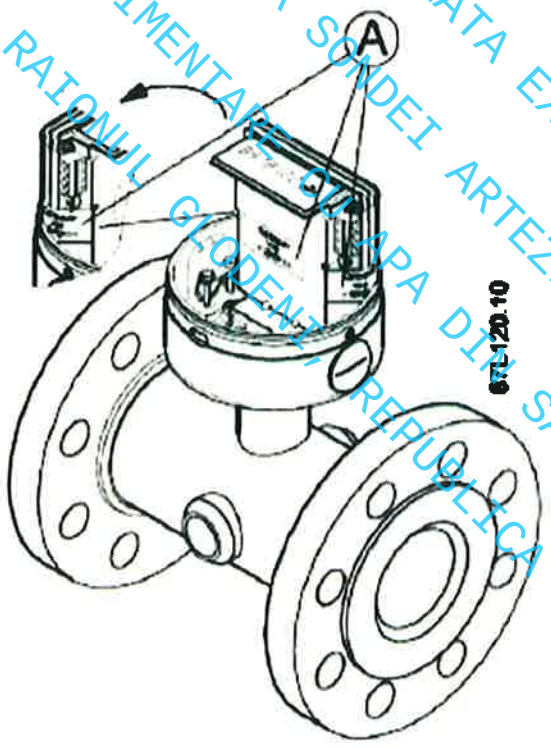
Sicherungsanordnung

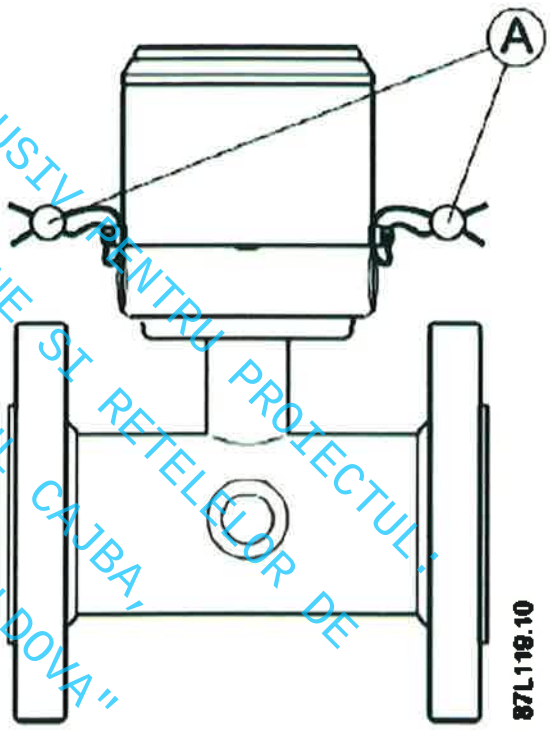
MAG 8000

Intern

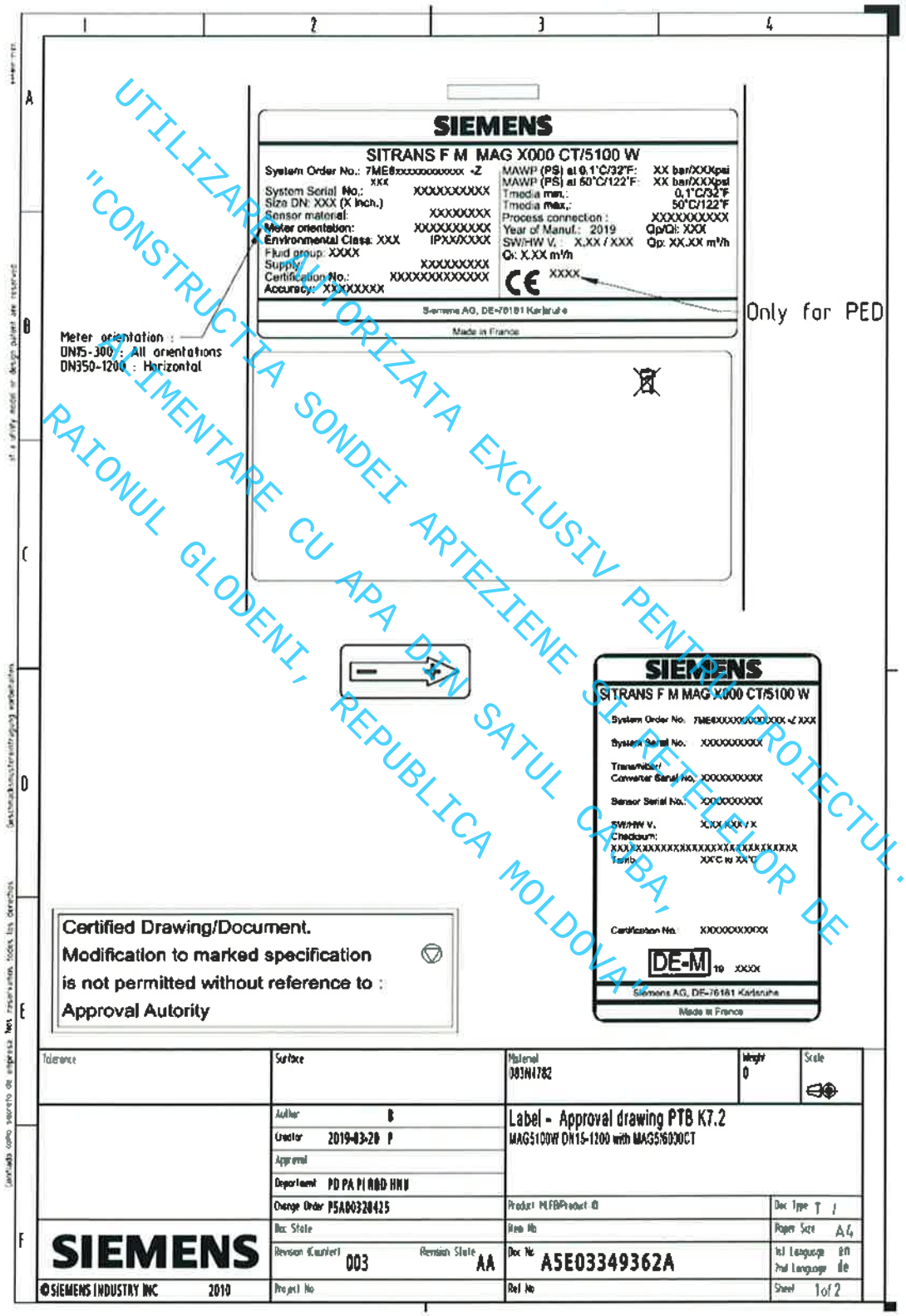


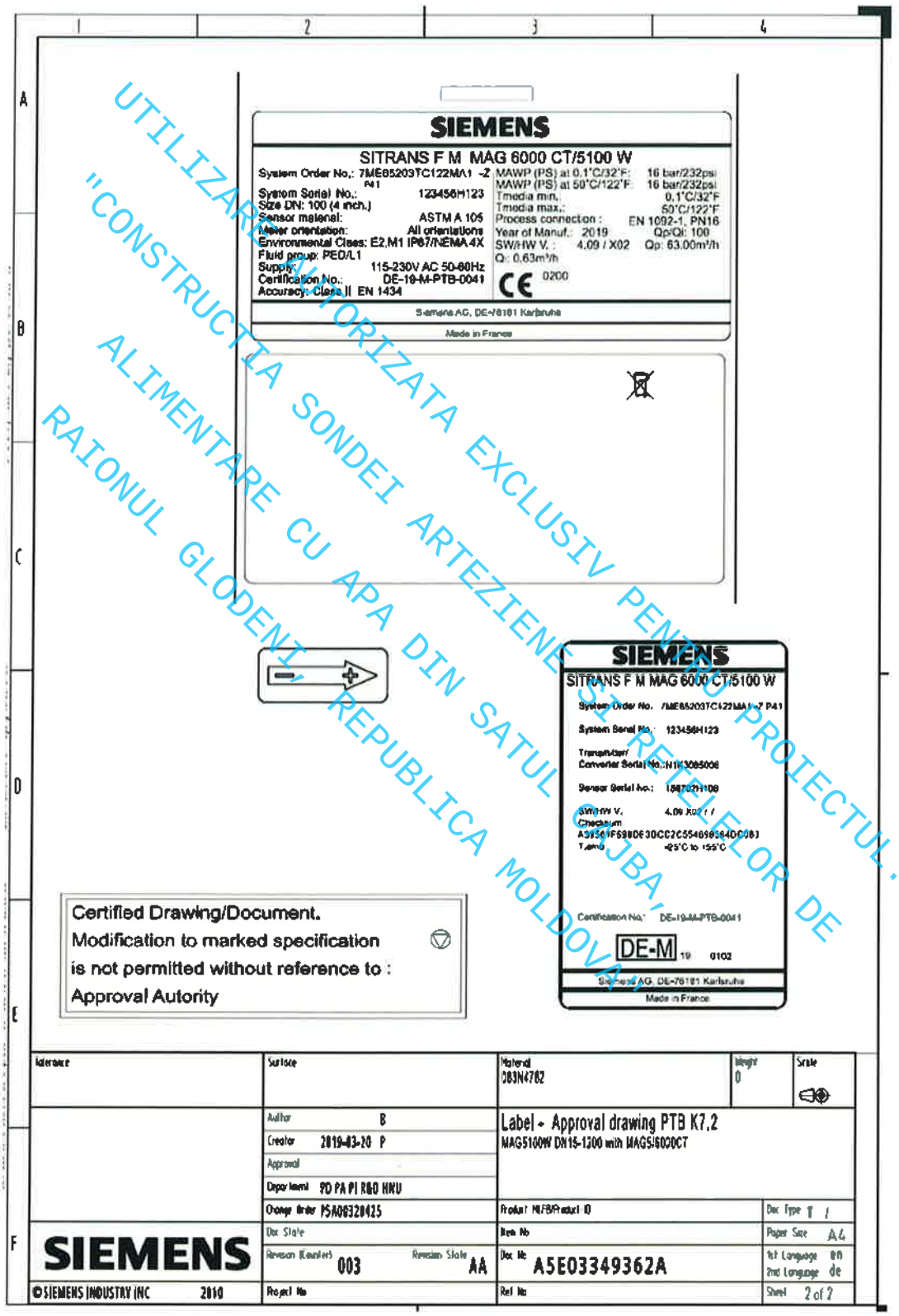
Die mit "A" gekennzeichneten internen Stellen sind mit Klebemarken zu sichern.

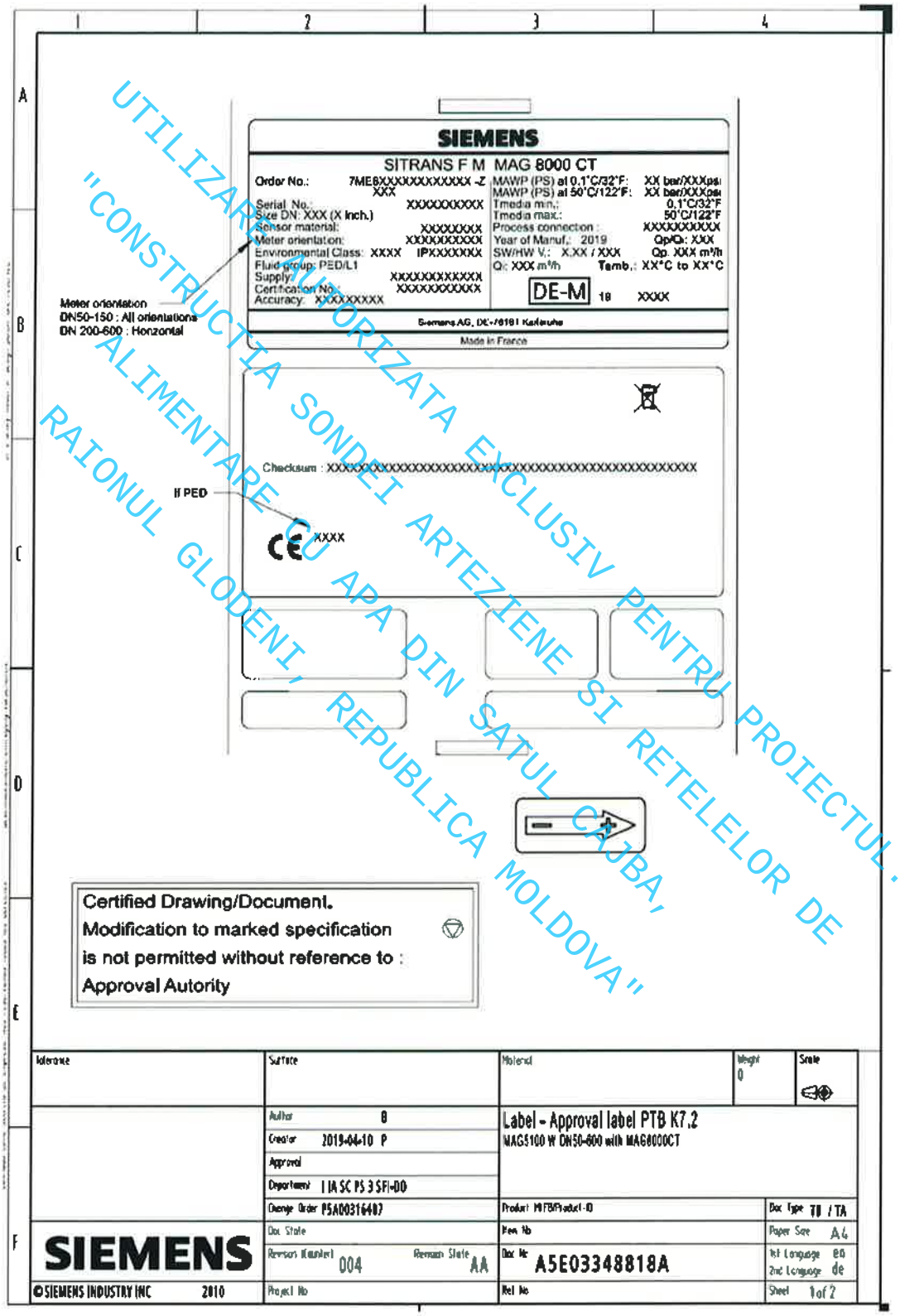
Extern

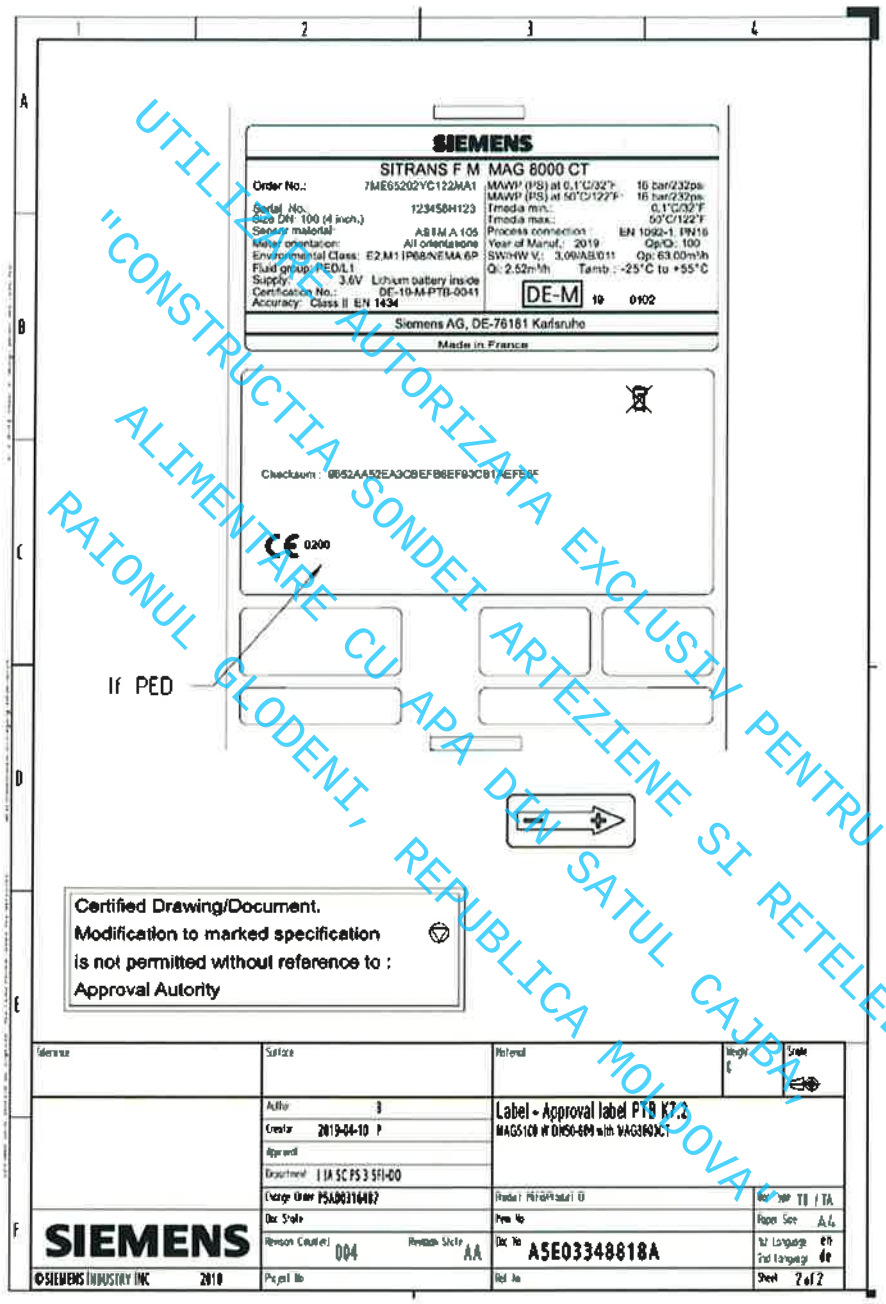


Benutzersicherung durch Plombierdraht und Plomben









IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SIR 10.0067X

Issue No: 3

Certificate history:
Issue No. 3 (2018-04-20)
Issue No. 2 (2017-01-30)
Issue No. 1 (2013-05-28)
Issue No. 0 (2011-09-30)

Status: **Current**

Date of Issue: **2018-04-20**

Applicant: **Siemens AG**
DE-76181 Karlsruhe
Germany

Equipment: **SITRANS F M MAGFLO MAG3100Ex - DN350 to DN2000**

Optional accessory:

Type of Protection: **Increased Safety, Intrinsically Safe and Dust**

Marking:

Remote Version (MAG3100 Only)
Ex e ia IIC T3-T6 Gb or Ex e ia IIB T3-T6 Gb
Ex tD A21 IP67 T*°C (* pipe temperature +5K)
Ta = -25°C to +60°C
Compact Version (MAG3100 with MAG6000)
Ex d e [ia] ia IIC T3-T6 Gb or Ex d e [ia] ia IIB T3-T6 Gb
Ex tD A21 IP67 T**°C (** pipe temperature +5K, but not less than 85°C)

Approved for issue on behalf of the IECEx Certification Body: A G Boyes

Position: Certification Support Officer

Signature:
(for printed version)

Date: 2018-04-20

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SIRA Certification Service
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Hawarden, Deeside, CH5 3US
United Kingdom

IECEx Certificate of Conformity

Certificate No: IECEx SIR 10.0067X Issue No: 3

Date of Issue: 2018-04-20 Page 2 of 4

Manufacturer: **Siemens AG**
DE-76181 Karlsruhe
Germany

Additional Manufacturing location(s):

Siemens Production Automatisation S.A.S.
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67506 Haguenau Cedex
France

Siemens Sensors & Communication Ltd.
117, Guangxian Road
Qi Xian Ling
High Tech Park
116023 DALIAN
China

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2004 Edition:4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-0 : 2007-10 Edition:5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-11 : 2006 Edition:5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-7 : 2006-07 Edition:4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
IEC 61241-0 : 2004 Edition:1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61241-1 : 2004 Edition:1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/SIR/ExTR11.0247/00 GB/SIR/ExTR13.0108/00 GB/SIR/ExTR17.0010/00
GB/SIR/ExTR18.0064/00

Quality Assessment Report:

DE/TUN/QAR06.0006/05 GB/SIR/QAR09.0004/02 GB/SIR/QAR15.0019/00
GB/SIR/QAR15.0021/00 US/UL/QAR09.0009/00

IECEx Certificate of Conformity

Certificate No: IECEx SIR 10.0067X Issue No: 3

Date of Issue: 2018-04-20 Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The SITRANS F M MAGFLO MAG3100 Ex Flowsensor comprises a pair of increased safety windings and a pair of intrinsically safe magnetic sensing electrodes that are mounted to a pipe body. The size of the process pipe ranges between DN350 (350 mm) to DN2000 (2000 mm). See Certificate Annexe for a full description.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See Certificate Annexe.

IECEx Certificate of Conformity

Certificate No:	IECEx SIR 10.0067X	Issue No: 3
Date of Issue:	2018-04-20	Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

This issue recognises the following changes; refer to the certificate annex for a comprehensive history:

1. The company name and address was changed:

   From Siemens A/S Flow Instruments, Coriolisvej 1, 6400 Sonderborg, DK-6400, Denmark

   To Siemens AG, DE-76181 Karlsruhe, Germany

   In addition, the following sites were recognised as Additional Manufacturing locations:

   Siemens Production Automatisation S.A.S., 1 Chemin de la Sandlach, 67506 Haguenau Cedex, France

   Siemens Sensors & Communication Ltd., 117, Guangxian Road, Qi Xian Ling, High Tech Park, 116023 DALIAN, China

Annex:

IECEx SIR 10.0067X Issue 3 Annexe.pdf

Annexe to: **IECEx SIR 10.0067X Issue 3**

Applicant: **Siemens AG**

Apparatus: **SITRANS F M MAGFLO MAG3100Ex - DN350 to DN2000**

The SITRANS F M MAGFLO MAG3100 Ex Flowsensor comprises a pair of increased safety windings and a pair of intrinsically safe magnetic sensing electrodes that are mounted to a pipe body. The size of the process pipe ranges between DN350 (350 mm) to DN2000 (2000 mm).

The pipe body is fitted with clips, which secure the increased safety windings, and pipe flanges for installation to the process pipe work. Two, diametrically opposed tubes are welded to the sides of the pipe and these contain intrinsically safe electrodes that pass through the wall of the pipe into the bore. An outer casing manufactured from steel encloses the windings and wiring, but the diametrically opposed tubes pass through this outer casing and the open ends are sealed by tamperproof plugs.

The increased safety windings are manufactured from self-bonding insulated copper winding wire and are electrically connected in series. In the remote configuration the connection leads from the windings and the electrodes are taken back to a junction box which is mounted on a tube welded to the outer casing. The leads pass through the tube and enter the rear of the enclosure where they are terminated on terminal blocks. The junction box meets IP67 ingress protection and has numerous cable entry points that facilitate cable connections between the Flowsensor and MAG6000 Transmitter (IECEx SIR 09.0083X). In the compact configuration, the Flowsensor has its junction box replaced with a direct connection to the MAG6000 Transmitter. The connection leads from the windings and the electrodes are taken through the welded tube and terminated within the Transmitter.

The sensing circuit leads are made from single core screened cable, the screens being terminated on an earth terminal near the intrinsically safe terminal block. Additional earthing electrodes fitted through the wall of the pipe may be provided. The earthing electrodes are fitted into holes in the sensor tube and are secured by a continuous weld. Alternatively the electrodes may be screwed in and Loctite applied to the threads to seal them.

The associated safety coding for the MAG6000 when remotely mounted is Ex d e [ia] ia. The MAG6000 has two terminal sections to facilitate remote wiring in the 'remote configuration', the main terminal chamber and an optional pedestal terminal enclosure. Therefore the Ex 'e' and 'ia' coding refers to the connections made within the pedestal terminal enclosure, fitted only in the remote configuration to facilitate cabling between the MAG6000 and MAG3100.

Therefore the compact configuration of the MAG6000 with MAG3100 gives a resulting safety code of Ex d e [ia] ia.

The parameters for the SITRANS F M MAGFLO MAG3100Ex Flowmeter are as follows:

Remote version:

Terminals 0, 81, 82,83,84 (Ex ia):	Ui = 30 V, Ii = 50 mA, Pi = 0.5 W, Ci = 50 nF, Li = 2 µH
Terminals 85, 86 (Ex e):	Ui = 30 V (70 Vpk), Ii = 130 mA

Compact version: See certificate IECEx SIR 09.0083X 'compact version'.

Conditions Of Certification

i. When used with hazardous gases, the maximum allowable process fluid temperature for the equipment is dependent on the temperature classification of the hazardous area (Group II) and the maximum ambient temperature as follows:

Maximum Process Fluid Temperature (°C)	Temperature Class	Maximum ambient temperature
75°C	T6 (85°C)	+60°C
90°C	T5 (100°C)	+60°C
125°C	T4 (135°C)	+60°C
180°C	T3 (200°C)	+60°C
150°C (Compact configuration only)	T3 (200°C)	+50°C

ii. When used with hazardous dusts, the surface temperature is equal to:
- The process fluid temperature +5 K when configured as the Remote Version
- The process fluid temperature +5 K but not less than +85°C when configured as the Compact Version.

iii. In operation, the output is earthed through the conductive medium being measured and therefore potential equalisation is necessary throughout the hazardous area. The apparatus housing shall be connected to the potential equalising conductor in the hazardous area.

iv. The external connections to the Ex 'e' Terminals (85 and 86) of the Remote version shall comply with the following:
- The wire conductors shall have a cross-sectional area between 0.5 mm² and 4 mm².
- No more than one single or multiple strand wire conductor shall normally be connected to each of the terminals. If multiple conductors are required, these shall be joined in a suitable manner, e.g. two conductors into a single insulated crimped boot lace ferrule.
- The insulation on the wire conductors shall extend to within 1mm of the metal of the terminal throat.
- The terminal screws shall be tightened down with a torque between 0.5 Nm and 0.7 Nm.
- The terminals shall never be exposed to temperatures outside of the range −50°C to +130°C; in addition, they shall only be installed and wired with cable in an ambient temperature of -10°C to +80°C. Furthermore, in the event of there being a process temperatures of +180°C in conjunction with an upper ambient temperature of +50°C or greater the terminal strips should not be installed or wired with cable.

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Web: www.csagroupuk.org

Conditions Of Manufacture

i. This certificate relies on the following previously certified products. When used as part of the SITRANS F M MAGFLO MAG3100 Ex Flowsensor, the key attributes listed in the table below shall still be maintained by their original certificate.

Product	Certificate number	Key attributes
Weidmuller BK 2/E Terminal	IECEx SIR 05.0035U	Ex e II
Hawke type PET5 Pillar Earth Terminal	IECEx BAS 090010U	Ex e IIC Gb

ii. The 'Remote' configuration of the apparatus shall have terminals 85 and 86 subjected to a dielectric strength test as per Clause 7.1 of IEC 60079-7:2006 at 500V r.m.s between all electrical connections and the enclosure case.

iii. The 'Remote' configuration of the apparatus shall have terminals 0, 81, 82, 83, and 84 subjected to a routine test voltage of 500 V r.m.s. a.c. between the enclosure case and all electrical connections including the cable screens. There shall be no breakdown of insulation and the maximum current shall not exceed 5 mA, as required by clauses 6.3.12 and 10.3 of IEC 60079-11:2006.

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1 - This variation introduced the following changes:

i. The lower ambient temperature for the DN350 – DN2000 Flowsensors was approved to be extended from -20°C to -25°C.

ii. The terminal chamber may be filled with an encapsulant as an option to improve the ingress protection.

Issue 2 - This variation introduced the following changes:

i. The company address was changed from Nordborgvej 81, 6430 Nordborg, Denmark to Coriolisvej 1, 6400 Sonderborg, Denmark.

ii. To permit the Gas Group marking IIB to be introduced which requires the introduction of an option to apply a thicker paint layer. There are no other modifications in the products.

Issue 3 - This variation introduced the following changes:

i. The company name and address was changed:
From Siemens A/S Flow Instruments, Denmark to Coriolisvej 1, 6400 Sonderborg, Denmark
To Siemens AG, DE-76181 Karlsruhe, Germany
In addition, the following sites were recognised as Additional Manufacturing locations:
Siemens Production Automatisation S.A.S., 1 Chemin de la Sandlach, 67506 Haguenau Cedex, France
Siemens Sensors & Communication Ltd., 117, Guangxian Road, Qi Xian Ling, High Tech Park, 116023 DALIAN, China

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Web: www.csagroupuk.org

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx SIR 09.0083X

Issue No: 6

Status: **Current**

Date of Issue: **2018-05-04**

Applicant: **Siemens AG**
DE-76181 Karlsruhe
Germany

Certificate history:
Issue No. 6 (2018-05-04)
Issue No. 5 (2017-01-30)
Issue No. 4 (2013-04-04)
Issue No. 3 (2012-12-10)
Issue No. 2 (2012-01-20)
Issue No. 1 (2011-08-10)
Issue No. 0 (2010-01-11)

Equipment: **SITRANS F M MAGFLO / MAG6000 INDUSTRY Compact and Remote Version**

Optional accessory:

Type of Protection: **Flameproof, Increased Safety, Intrinsic Safety and Dust**

Marking:

Ex d e [ia] ia IIC T6 Gb
Ex tD A21 IP67 T85°C
Ta -25°C to +60°C
or
Ex d e [ia] ia IIB T6 Gb
Ex tD A21 IP67 T85°C
Ta -25°C to +60°C
Note these markings are for the Remote Version only, the marking applicable to the Compact Version depends upon the construction, refer to the latest issue of certificate IECEx SIR 10.0093X.
IEC 60079-0:2004 has been included in the list of standard because there is a dated reference to it in IEC 60079-11:2006

Approved for issue on behalf of the IECEx Certification Body: A G Boyes

Position: Certification Support Officer

Signature:
(for printed version)

Date: 2018-05-04

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the Official IECEx Website.

Certificate issued by:

SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom

IECEx Certificate of Conformity

Certificate No:	IECEx SIR 09.0083X	Issue No: 6
Date of Issue:	2018-05-04	Page 2 of 4
Manufacturer:	**Siemens AG** DE-76181 Karlsruhe **Germany**	

Additional Manufacturing location(s):

Siemens Production Automatisation S.A.S.
1 Chemin de la Sandlach
67506 Haguenau Cedex
France

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2004 Edition:4.0	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
IEC 60079-0 : 2007-10 Edition:5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-1 : 2007-04 Edition:6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2006 Edition:5	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-7 : 2006-07 Edition:4	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
IEC 61241-0 : 2004 Edition:1	Electrical apparatus for use in the presence of combustible dust - Part 0: General requirements
IEC 61241-1 : 2004 Edition:1	Electrical apparatus for use in the presence of combustible dust - Part 1: Protection by enclosures "tD"

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

GB/SIR/ExTR09.0175/00 GB/SIR/ExTR11.0158/00 GB/SIR/ExTR11.0272/00
GB/SIR/ExTR12.0009/00 GB/SIR/ExTR12.0309/00 GB/SIR/ExTR13.0063/00
GB/SIR/ExTR17.0010/00 GB/SIR/ExTR18.0064/00

Quality Assessment Report:

DE/TUN/QAR06.0006/05 DK/ULD/QAR09.0001/01 GB/SIR/QAR15.0019/00
US/UL/QAR09.0009/00

IECEx Certificate of Conformity

Certificate No:	IECEx SIR 09.0083X	Issue No: 6
Date of Issue:	2018-05-04	Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The equipment is a transmitter that is intended to be used with an associated electro-magnetic flowmeter (the certification of which is not covered by this certificate). There are two versions of the transmitter, a compact version, intended to be directly attached to the flowmeter, and a remote version, intended to be located separate from a flowmeter and connected to it via cabling. Refer to the Annexe for full description, ratings and ALL conditions.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to the Annexe.

IECEx Certificate of Conformity

Certificate No:	IECEx SIR 09.0083X	Issue No: 6
Date of Issue:	2018-05-04	Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

This issue recognises the following changes; refer to the certificate annex for a comprehensive history:

1. The company name and address was changed:

   From Siemens A/S Flow Instruments, Coriolisvej 1, 6400 Sonderborg, DK-6400, Denmark

   To Siemens AG, DE-76181 Karlsruhe, Germany

   In addition, the following site was recognised as an Additional Manufacturing location:

   Siemens Production Automatisation S.A.S., 1 Chemin de la Sandlach, 67506 Haguenau Cedex, France

Annex:

IECEx SIR 09-0083X_Iss6 Annexe.pdf

The transmitter enclosure has two main chambers separated by a cable feed through (Ex d) bushing. The chambers consist of the main flameproof (Ex d) chamber with display window and a terminal chamber that is either increased safety (Ex e) or flameproof (Ex d) depending on the required end use. In addition the remote version of the transmitter has a separate second intrinsically safe (Ex ia)/ increased safety (Ex e) terminal chamber mounted to the pedestal section of the MAG6000 that contains terminal blocks intended for the connection of the cabling between the flowmeter and the MAG6000 transmitter.

The main flameproof chamber contains an assembly of two printed circuit boards mounted on top of each other together with, an optional 'HART' interface module, a Foundation Fieldbus/Profibus printed circuit board assembly, and a display/capacitive touch screen sensor switch module.

The optional flameproof or increased safety terminal chamber contains a terminal printed circuit board assembly fitted with (Ex e) terminals intended for external mains supply and data interface connections. External wiring connections are made either via separate flameproof or increased safety cable glands mounted in the wall of the enclosure, one for the mains supply cable and the other for the data interface cable.

The intrinsically safe/increased safety chamber for the remote version of the transmitter contains a terminal assembly comprising a certified increased safety (Ex e) terminal block and a separate 'plug in' terminal block intended for the intrinsic safety connections, both these terminal blocks being for external wiring connections to the separate flowmeter.

The compact version of the MAG6000 has the following ratings

Compact version	MAG6000i Model 7ME63x0-xxxxx-xD/E	MAG6000i Model 7ME63x0-xxxxx-xG
	Original Parameters	Revised Parameters
Supply - Terminals L & N	24 V rated version: Um = 30 V 230 V rated version: Um = 250 V	U_m = 264 V
Current Output - Terminals 31 & 32 ('ia' circuits)	Passive mode configuration (I-OUT PASSIVE) (see Special Conditions for Safe Use): U_i = 28 V I_i = 100 mA Pi = 0.7 W C_i = 19.7 nF L_i = 36 µH	Passive mode configuration (I-OUT PASSIVE) (see Special Conditions for Safe Use): U_i = 30 V I_i = 100 mA Pi = 1 W C_i = 22 nF L_i = 34 µH
Current Output - Terminals 31 & 32 ('ia' circuits) (Continued)	Active mode configuration (I-OUT ACTIVE) (see Special Conditions for Safe Use): Uo = 30 V Io = 87.8 mA Po = 0.66 W Co(IIB) = 557 nF Co(IIC) = 63 nF Lo(IIB) = 18.41 mH Lo(IIC) = 4.57 mH	Active mode configuration (I-OUT ACTIVE) (see Special Conditions for Safe Use): U_o = 28 V I_o = 87 mA P_o = 0.61 W C_o(IIB) = 628 nF C_o(IIC) = 61 nF L_o(IIB) = 18.5 mH L_o(IIC) = 4.6 mH
Relay Output - Terminals 44, 45 & 46 ('ia' circuits)	Ui = 30 V Ii = 200 mA Pi = 1.2 W Ci = 3.3 nF Li = 0	U_i = 30 V I_i = 200 mA P_i = 1.2 W C_i = 7.5 nF L_i = 0

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Compact version	MAG6000i Model 7ME63x0-xxxxx-xD/E	MAG6000i Model 7ME63x0-xxxxx-xG
	Original Parameters	Revised Parameters
Frequency/pulse output – Terminals 56 & 57 ('ia' circuits)	Ui = 28 V Ii = 100 mA Pi = 1.2 W Ci = 14.2 nF Li = 36 µH	U_i = 28 V I_i = 100 mA P_i = 1.2 W C_i = 11 nF L_i = 34 µH
Digital input – Terminals 77 & 78 ('ia' circuits)	Ui = 30 V Pi = 1.2 W Ci = 2.2 nF Li = 0	U_i = 30 V P_i = 1.2 W C_i = 0 L_i = 0
Foundation Fieldbus/Profibus (FISCO) – Terminals 95 & 96 ('ia' circuits)	Ui = 17.5 V Ii = 380 mA Pi = 5.32 W Ci = 0 Li = 0	U_i = 17.5 V I_i = 380 mA P_i = 5.32 W C_i = 0 L_i = 0
Terminals 91, 92, 93, 94, & 97	No connection permitted	No connection permitted

The MAG6000I Ex is intended to be powered via an 18 Vdc to 30V dc or 85 Vac to 250 Vac power supply connected to the terminals L and N.

The remote version of the MAG6000 has the following ratings:

Remote version	MAG6000i Model 7ME693-2BA4/5	MAG6000i Model 7ME693-2BA6
	Original Parameters	Revised Parameters
Supply - Terminals L & N	24 V rated version: Um = 30 V 230 V rated version: Um = 250 V	U_m = 264 V
Current Output (I-OUT) - Terminals 31 & 32 ('ia' circuits)	Passive mode configuration (I-OUT PASSIVE) (see Special Conditions for Safe Use): Ui = 28 V Ii = 100 mA Pi = 0.7 W Ci = 19.7 nF Li = 36 µH	Passive mode configuration (I-OUT PASSIVE) (see special conditions for safe use): U_i = 30 V I_i = 100 mA P_i = 1 W C_i = 22 nF L_i = 34 µH
	Active mode configuration (I-OUT ACTIVE) (see special conditions for safe use): Uo = 30 V Io = 87.8 mA Po = 0.66 W Co(IIB) = 557 nF Co(IIC) = 63 nF Lo(IIB) = 18.41 mH Lo(IIC) = 4.57 mH	Active mode configuration (I-OUT ACTIVE) (see special conditions for safe use): U_o = 28 V I_o = 87 mA P_o = 0.61 W C_o(IIB) = 628 nF C_o(IIC) = 61 nF L_o(IIB) = 18.5 mH L_o(IIC) = 4.6 mH
Relay Output - Terminals 44, 45 & 46 ('ia' circuits)	Ui = 30 V Ii = 200 mA Pi = 1.2 W Ci = 3.3 nF Li = 0	U_i = 30 V I_i = 200 mA P_i = 1.2 W C_i = 7.5 nF L_i = 0

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Remote version	MAG6000i Model 7ME693-2BA4/5	MAG6000i Model 7ME693-2BA6
	Original Parameters	Revised Parameters
Frequency/pulse output – Terminals 56 & 57 ('ia' circuits)	Ui = 28 V Ii = 100 mA Pi = 1.2 W Ci = 14.2 nF Li = 36 µH	U_i = 28 V I_i = 100 mA P_i = 1.2 W C_i = 11 nF L_i = 34 µH
Digital input – Terminals 77 & 78 ('ia' circuits)	Ui = 30 V Pi = 1.2 W Ci = 2.2 nF Li = 0	U_i = 30 V P_i = 1.2 W C_i = 0 L_i = 0
Sensor electrode input – Terminals 0, 81, 82, 83 & 84 ('ia' circuits)	Uo = 30 V Io = 6.1 mA Po = 45.5 mW Co(IIB) = 560 nF Co(IIC) = 66 nF Lo(IIB) = 1 H Lo(IIC) = 0.96 H	U_o = 30 V I_o = 6.1 mA P_o = 45.5 mW C_o(IIB) = 560 nF C_o(IIC) = 66 nF L_o(IIB) = 1 H L_o(IIC) = 0.96 H
Sensor coil driver output – Terminals 85 & 86	Not applicable. These are 'Ex e' terminals	Not applicable. These are 'Ex e' terminals
Foundation Fieldbus/Profibus (FISCO) – Terminals 95 & 96 ('ia' circuits)	Ui = 17.5 V Ii = 380 mA Pi = 5.32 W Ci = 0 Li = 0	U_i = 17.5 V I_i = 380 mA P_i = 5.32 W C_i = 0 L_i = 0
Terminals 91, 92, 93, 94 & 97	No connection permitted	No connection permitted

Specific Conditions of Use

Intrinsic safety and Ex e (terminal chamber) Conditions

i. The equipment can be supplied with its Current Output (Terminals 31 and 32) configured in either an Active Mode (I-OUT ACTIVE) or a Passive Mode (I-OUT PASSIVE), the configured mode of any particular transmitter being marked on a label fitted to the inside of the mains supply/data interface terminal chamber lid. The user shall refer to this label to determine the configured mode of a particular transmitter to determine which one of the two sets of parameters specified for the Current Output is applicable. The mode of a transmitter is not user configurable.

ii. The external connections to Terminals 85 and 86 shall comply with the following: -
- The wire conductors shall have a cross-sectional area between 0.5mm² and 2.5mm²
- No more than one single or multiple strand wire conductor shall normally be connected to each of the terminals. If multiple conductors are required, these shall be joined in a suitable manner, e.g. two conductors into a single insulated crimped boot lace ferrule
- The insulation on the wire conductors shall extend to within 1mm of the metal of the terminal throat
- The terminal screws shall be tightened down with a torque between 0.4 Nm and 0.45 Nm

iii. Only the Exe/Exi terminal chamber may be opened to obtain access to the I.S. terminals when an explosive gas or dust atmosphere may be present.

iv. The equipment internal circuits at the following terminals are not capable of withstanding a 500 V r.m.s. a.c. test to earth as required by clause 6.3.12 of IEC 60079-11:2007. This must be taken into account in any equipment installation:
- Terminals 77 and 78 – Digital input
- Terminals 95 and 96 – Foundation Fieldbus/Profibus (FISCO). (Not applicable to Model 7ME693-2BA6)
- Terminals 0, 81, 82, 83 and 84 – Sensor electrode input (Remote Version only)

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Flameproof Ex d Conditions

i. No more than one single or multiple strand lead shall normally be connected into either side of each terminal covered by Sira 01ATEX3248U. If multiple connectors are required, these shall be joined in a suitable manner, e.g. two conductors into a single insulated crimped boot lace ferrule.
ii. Leads connected to the terminals shall be insulated for the appropriate voltage and this insulation shall extend to within 1 mm of the metal of the terminal throat.
iii. All terminal screws, used and unused, shall be tightened down to between 0.4 Nm and 0.45 Nm.
iv. All cable glands used with the equipment must be suitably certified and maintain the IP rating of the equipment.

General

i. The equipment shall only be connected (Terminals L1 and N) to a supply circuit that has a maximum prospective short circuit current of 35 A a.c. or less.
ii. The changes involved with Issue 2 introduced entity parameters that are not back compatible with previous versions; therefore, Issues 0 and 1 of this certificate are obsolete and shall only be used for historical reference.

Conditions Of Manufacture

Intrinsic safety and Ex e (terminal chamber) Conditions

i. Transformer T200 in this equipment shall be subjected to a routine test voltage of 2500 V r.m.s. between primary and secondary and between feedback and secondary. There shall be no breakdown of insulation as required by clause 11.2 of IEC 60079-11:2007.
ii. The equipment shall be subjected to a routine test voltage of 1500 V r.m.s. between Terminals 0, 31, 32, 44, 45, 46, 56, 57, 77, 78, 81, 82, 83, 84, 95 and 96 and Terminals L1 and N in accordance with clause 10.3 of IEC 60079-11:2006 Ed 5. There shall be no breakdown of insulation as required by clause 6.3.12 of IEC 60079-11:2006 Ed 5. Alternatively, the test may be performed at 1800 V r.m.s. for a minimum of 1 second. Additionally Terminals L1 and N shall be tested in accordance with clause 7.1 of IEC 60079-7:2006 Ed 4 between themselves and the enclosure at a routine test voltage of 1500 V r.m.s. There shall be no breakdown of insulation.
iii. The products covered by this certificate incorporate previously certified devices, it is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with these devices, and the manufacturer shall inform Sira of any modifications of the devices that may impinge upon the explosion safety design of the products.
iv. The Compact Version of the equipment, as supplied, shall only be connected and mounted on another item of certified Ex e or Ex d equipment (e.g. an electro-magnetic flowmeter). This 'other equipment' shall be certified for such an arrangement i.e. the associated certificate shall cover the mounting and connection of the SITRANS F M MAGFLO6000 INDUSTRY. Additionally the compact marking for the equipment shall be covered by the certificates for the associated Ex e or Ex d equipment, only the remote marking of the SITRANS F M MAGFLO6000 INDUSTRY is covered by this certificate.
v. The Ex 'e' terminals used on the terminal PCB shall be WAGO type 236 which are ATEX component certified under certificate PTB 06ATEX1061U'.
vi. When supplied in the 'Remote Version' the pedestal sub-assembly shall be subjected to a routine dielectric strength test in accordance with clause 7.1 of IEC 60079-7:2006 Ed 4. Terminals 85 and 86 shall be tested between themselves and the enclosure at a test voltage of 500 V r.m.s. before being wired/connected to the MAG6000. Alternatively, the test may be performed at 600 V r.m.s. for a minimum of 100 ms, there shall be no breakdown of insulation

Flameproof Ex d Conditions

i. The bottom bush seal on the SITRANS F M MAGFLO6000 INDUSTRY shall be tightened to a torque of 5 Nm.

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General

i. The manufacturer shall not make any products in accordance with Issues 0 and 1 of this certificate, it is also their responsibility to ensure that all supporting documentation e.g. catalogues, instruction leaflets etc. do not quote the entity parameters stated in Issues 0 and 1 of this certificate.

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1 - This variation introduced the following changes:

i. Change of ambient temperature range from -10°C to -20°C.
ii. Change of protection level for terminals 95 and 96 to Ex 'ia' The marking has been amended accordingly to remove the protection level 'ib. (Note - terminals 95 and 96 have been renamed to be "Foundation Fieldbus/Profibus (FISCO)".
iii. New STAC PCB design, new microprocessor.
iv. The Applicants name was changed from Siemens Flow Instruments A/S to Siemens A/S Flow Instruments.
v. Additional routine test for the Remote Version in the Conditions of Manufacture.
vi. Change of manufacturer name and address from: Siemens Flow Instruments A/S Norborgvej, 6430 Nordborg, DK-6400, Denmark to Siemens Production Automatisation S.A.S, 1 Chemin de la Sandlach, 67506 Haguenau Cedex, France.

Issue 2 - This variation introduced the following changes: GB/SIR/ExTR11.0272/00 covers changes 1 to 3, GB/SIR/ExTR12.0009/00 covers changes 4 and 5

i. The product description was amended to bring it into line with certificate number Sira 11ATEX2124X also associated with this equipment.
ii. The Condition of Manufacture that detailed routine, dielectric strength testing of terminals 31, 32, 44, 45, 46, 56, 57, 77, 78, 95, 96 and Terminals L1 and N located in the supply/data terminals chamber was replaced.
iii. The inclusion of a new Special Conditions For Safe Use' to indicate that the equipment is only suitable for connection to a supply circuit that has a maximum prospective short circuit current of 35 A a.c. or less.
iv. The STAC PCB (A5E01154980A) has been replaced with new version, A5E01154980C, that incorporates various PCB component changes.
v. The entity parameters for Terminals 31 and 32 were modified (Passive mode only), the Description of Equipment was amended to recognise this change.

Issue 3 - This variation introduced the following changes:

i. The minimum ambient temperature limit was lowered from -20°C to -25°C.
ii. The conditions of certification to be changed to permit access to the I.S. terminals when the hazardous gas or dust is present.
iii. The introduction of a new model of the **MAG6000i** comprising the Model 7ME63x0-xxxxx-xG or Model 7ME693-2BA6, which incorporates the following:
   - New main circuit design based on the MASS digital product assessed under Sira report R26197A/00, see section 3.2 of this report. The original circuit design has been updated to replace the power supply and crowbar circuits with the up-to-date versions used on the MASS Digital (FCT030 and FC430) design. Additionally new 4-20mA output design used on the MASS Digital has been included on the MAG6000 circuit.
   - As a consequence of the new circuits the condition of certification can be removed for the Foundation Fieldbus/Profibus(FISCO) terminals 95 and 96. applicable only to these two versions.
   - New Terminal Board design.
   - Addition of a routine pressure test as a condition of certification.
   - The description was modified to reflect this new model.

Sira Certification Service
Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom
Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: ukinfo@csagroup.org
Web: www.csagroupuk.org

Issue 4 - This variation introduced the following changes:

i. Following satisfactory exemption pressure testing, the need for routine testing is not required, therefore the condition, 'The enclosure compartments are to be routinely pressure tested at 16.9 bar (Model 7ME63x0-xxxxx-xG or Model 7ME693-2BA6 only)', was removed.
ii. It was recognised the terminal chamber warning label 'Do not open when energised' is no longer needed, therefore, the non-safety related label drawing, A5E03640569A, was removed from the list of approved drawings.
iii. Minor changes to the spacing class documents and PCB layout were acknowledged.

Issue 5 - This variation introduced the following changes:

i. The company address was changed from Nordborgvej 81, 6430 Nordborg, Denmark to Coriolisvej 1, 6400 Sonderborg, Denmark.
ii. To permit the Gas Group marking IIB to be introduced which requires the introduction of an option to apply a thicker paint layer. There are no other modifications in the products.

Issue 6 - This variation introduced the following changes:

i. The company name and address was changed:
From Siemens A/S Flow Instruments, Denmark to Coriolisvej 1, 6400 Sonderborg, Denmark
To Siemens AG, DE-76181 Karlsruhe, Germany
In addition, the following site was recognised as an Additional Manufacturing location:
Siemens Production Automatisation S.A.S., 1 Chemin de la Sandlach, 67506 Haguenau Cedex, France

Sira Certification Service
Unit 6 Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom
Tel: +44 (0) 1244 670900
Fax: +44 (0) 1244 681330
Email: ukinfo@csagroup.org
Web: www.csagroupuk.org

Hygiene-Institut des Ruhrgebiets
Institut für Umwelthygiene und Toxikologie
Direktor: Prof. Dr. rer. nat. L. Dunemann
Träger: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V.

Hygiene-Institut · Postfach 10 12 55 · 45812 Gelsenkirchen

WAGU Gummitechnik GmbH
Friedrich-Harkort-Str. 17
59581 Warstein

Besucher-/Paketanschrift:
Rotthauser Str. 21, 45879 Gelsenkirchen

Zentrale	(0209) 9242-0
Durchwahl	(0209) 9242-230
Telefax	(0209) 9242-222
E-Mail	c.schell@hyg.de
Internet	www.hyg.de

Unser Zeichen: W-293461-18-Sl/Krü
Vormals: W-227645-13-Sl
Ansprechpartner: Frau Dr. Ch. Schell

Gelsenkirchen, den 10.01.2018

PRÜFZEUGNIS

(Verlängerung von Prüfzeugnis W-227645-13-Sl)

Vermehrung von Mikroorganismen auf Werkstoffen für den Trinkwasserbereich
Prüfung gemäß DVGW Technische Regeln, Arbeitsblatt W 270, November 2007

Antragsteller: WAGU Gummitechnik GmbH
Friedrich-Harkort-Str. 17
59581 Warstein

Werkstoff: **Wagunit H 1005**

Prüfungsart: Werkstoffprüfung

Der Werkstoff **Wagunit H 1005** erfüllt gemäß Prüfbericht **W-227645-13-Sl** vom **21.03.2013** die Anforderungen nach DVGW Arbeitsblatt W 270 für den Einsatz im Trinkwasserbereich. Details zum genauen Ablauf der Prüfung sowie die Einzelergebnisse sind dem Prüfbericht zu entnehmen.
Die Gültigkeit dieses Prüfzeugnisses beginnt mit dem Ausstellungsdatum und endet bei unveränderten Voraussetzungen am **21.03.2023**.

Der Direktor des Hygiene-Instituts
i.A.

Dr. Ch. Schell
Bereichsleiterin mikrobiologische Hygiene- und Materialprüfungen
Abteilung Wasserhygiene und Umweltmikrobiologie

Träger: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V., Vereinsregister: **VR 519** Amtsgericht Gelsenkirchen, USt.-ID: **DE125018356**
Vorstand: Prof. Dr. Werner Schlake (Vors.), Prof. Dr. Jürgen Kretschmann, Dr. Emanuel Grün, Dr. Dirk Waider, Prof. Dr. Lothar Dunemann (geschäftsführ. Vorstand)

Hygiene-Institut des Ruhrgebiets
Institut für Umwelthygiene und Toxikologie
Direktor: Prof. Dr. rer. nat. L. Dunemann
Träger: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V.

Hygiene-Institut · Postfach 10 12 55 · 45812 Gelsenkirchen

WAGU Gummitechnik GmbH
Friedrich-Harkort-Str. 17
59581 Warstein

Visitors/ postal address:
Rotthauser Str. 21, 45879 Gelsenkirchen, Germany

Switchboard	(0049209) 9242-0
Phone	(0049209) 9242-230
Fax	(0049209) 9242-222
E-Mail	c.schell@hyg.de
Internet	www.hyg.de

Reference:	W-293461e-18-Sl/Krü
Before:	**W-227645-13-Sl**
Contact person:	Mrs. Dr. Ch. Schell

Gelsenkirchen, 10.01.2018

TEST CERTIFICATE

(Prolongation of test certificate W-227645-13-Sl)

Enhancement of Microbial Growth on Materials to Come into Contact with Drinking water
Test pursuant to DVGW Technical Standard W 270, November 2007

Client:	WAGU Gummitechnik GmbH Friedrich-Harkort-Str. 17 59581 Warstein
Test material:	**Wagunit H 1005**
Test method:	Material test

According to test report **W-227645-13-Sl** of **21.03.2013**, the material **Wagunit H 1005** is conform to the requirements for the use in the area of drinking water systems pursuant to DVGW Technical Standard W 270. Details regarding testing procedure and test results are itemized in the test report.
This test certificate is valid from the date of issue and, given that the conditions and requirements remain unaltered, expires on **21.03.2023**.

The Director of the Institute
p.p.

Dr. Ch. Schell
Head of Laboratory
Department of Water Hygiene and Environmental Microbiology

Träger: Verein zur Bekämpfung der Volkskrankheiten im Ruhrkohlengebiet e.V., Vereinsregister: **VR 519** Amtsgericht Gelsenkirchen, USt.-ID: **DE125018356**
Vorstand: Prof. Dr. Werner Schlake (Vors.), Prof. Dr. Jürgen Kretschmann, Dr. Emanuel Grün, Dr. Dirk Waider, Prof. Dr. Lothar Dunemann (geschäftsführ. Vorstand)

Approval Number: 1610511
Test Report: MAT/LAB 242L

Water Regulations Advisory Scheme Ltd.
Unit 13,
Willow Road,
Pen y Fan Industrial Estate,
Crumlin,
Gwent,
NP11 4EG

3rd October 2016

Compounds AG
Barzloostrasse 1,
CH - 8330 Pfaffikon,
ZH Switzerland

WATER REGULATIONS ADVISORY SCHEME LTD. (WRAS)
MATERIAL APPROVAL

The material referred to in this letter is suitable for contact with wholesome water for domestic purposes having met the requirements of BS6920-1:2000 and/or 2014 'Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water'.

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

RUBBERS - ETHYLENE PROPYLENE DIENE MONOMER (EPDM) - MATERIAL ONLY. **5365**

Sunaflex T 8157. Black coloured, compression moulded EPDM rubber material. Shore hardness 60. Tested in-radius size 1.0mm. For use with water up to 85°C.

APPROVAL NUMBER: 1610511
APPROVAL HOLDER: COMPOUNDS AG

The Scheme reserves the right to review approval.
Approval 1610511 is valid between October 2016 and October 2021

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, "Materials which have passed full tests of effect on water quality".

The Directory may be found at: www.wras.co.uk/directory

Yours faithfully

Jason Furnival
Approvals & Enquiries Manager
Water Regulations Advisory Scheme

Compounds AG
Barzloostrasse 1
CH-8330 Pfäffikon ZH
3.10.16

WRAS MATERIAL APPROVAL - MATERIALS WHICH HAVE PASSED FULL TESTS OF EFFECT ON WATER QUALITY

The material referred to in this letter is suitable for contact with water for domestic purposes. **Approval of this material does not signify the approval of its mechanical or physical properties for any use.**

Manufacturers or applicants may only quote in their sales literature terms which are used in this letter, namely that; 'the material as listed, having passed the tests of effect on water quality, is suitable for use in contact with wholesome water'

This may be abbreviated to 'Water Regulations Advisory Scheme - Approved Material' or 'WRAS Approved Material'.

The scope of an Approval does not extend to rebranded materials unless otherwise agreed by the Scheme.

Use of the WRAS Approved Material Logo

Approval holders may use the WRAS Approved Material logo and make reference to any approval issued by WRAS Ltd. in respect of a particular material or range of materials provided the approval is, and remains valid.

Approval holders are entitled to use the logo on the packing, promotional literature and point of sale advertising Approved Materials.

Modifications to existing Approvals

It is a condition of WRAS Material Approval that NO changes or modifications to the Approved Material, be made without the Approval Holder first notifying WRAS Ltd. Full details of the proposed changes must be provided to the Scheme. Failure to comply with this condition will immediately invalidate a previously granted Approval.

Re-Approval

WRAS will write to you 1 year before the approval expires asking whether you would like to renew it. Please complete the relevant section of the MA3 application form which will be included with the letter and return to WRAS (via e-mail or post).

Please note it is the responsibility of the Approval Holder to ensure the Approval remains valid. WRAS Ltd. accepts no liability for the delay in granting approval where this is caused by circumstances outside of the Scheme's control.

Compounds AG
Barzloostrasse 1
CH-8330 Pfäffikon ZH
3.10.16

Traducere din limba engleză

SIEMENS

Declaraţie de conformitate CE
Nr. 083R3044 DS07

CE

Producător:	Siemens A/S Instrumente de debit
Adresa:	Nordborgvej 81; DK-6430, Nordborg, Danemarca
Descrierea produsului:	Transmiţător de debit SITRAS F M Tip MAG 6000 I, MAG5000, MAG6000, MAG5000CT, MAG6000CT, folosit cu senzori MAG1100, MAG 1100F, MAG1100HT, MAG1100 (Ex), MAG3100, MAG3100P, MAG3100HT, MAG3100 (Ex), MAG5100W şi sistemele MAG8000, MAG8000CT şi MAG8000 irigaţie

Produsul descris mai sus, în forma livrată, este conform cu prevederile următoarelor directive europene:

2004/108/CE EMC	Directiva Parlamentului şi Consiliului European privind armonizarea legilor Statelor Membre în ceea ce priveşte compatibilitatea electromagnetică şi anularea Directivei 89/336/CEE.
2006/95/CE LVD	Directiva Parlamentului şi Consiliului European privind armonizarea legilor Statelor Membre în ceea ce priveşte echipamentul electric proiectat pentru utilizarea cu anumite limite de tensiune.
94/9/CE ATEX	Directiva Parlamentului şi Consiliului European privind armonizarea legilor Statelor Membre în ceea ce priveşte echipamentul şi sistemele de protecţie destinate utilizării în atmosfere cu potenţial exploziv.
2004/22/CE MID	Directiva Parlamentului şi Consiliului European privind armonizarea legilor Statelor Membre în ceea ce priveşte echipamentul destinat sistemelor legale de măsurare metrologică.
97/23/CE PED	Directiva Parlamentului şi Consiliului European privind armonizarea legilor Statelor Membre în ceea ce priveşte echipamentele aflate sub presiune.

Anexa A face parte integrantă din această declaraţie.
Prezenta declaraţie atestă conformitatea cu directivele specificate, însă nu asigură proprietăţile. Documentaţia privind siguranţa produsului va fi luată în considerare în detaliu.

Siemens A/S Instrumente de debit
DK-6430 Nordborg
Danemarca
Nr. SE 31 03 21 72 /Nr. CVR 16 99 30 85

Telefon: +45 7488 5252
Fax: +45 7488 5250
E-mail: flow.sfi@siemens.com
Pagina de start: www.siemens.com/flow

SIEMENS

Anexa A la declaraţia de conformitate CE
nr. 083R3044 DS07

Nordborg, 08.12.2011

Siemens A/S Instrumente de debit
Gert Jørgensen, Manager R&D testare şi certificare sisteme
[semnătură indescifrabilă]
Nume, funcţie semnătură

Ove Kirk Andersen, Manager calitate
[semnătură indescifrabilă]
Nume, funcţie semnătură

Conformitatea cu directivele indicate la pagina 1 este asigurată prin aplicarea următoarelor standarde (în funcţie de versiune):

Directivă	Standard / număr de referinţă	Ediţie	MAG 6000 I	MAG 5000/6000	MAG 5000CT / 6000 CT	MAG 1100 /1100F / 1100 HT	MAG 1100 (Ex)	MAG 3100 /3100P /3100HT	MAG 3100 (Ex)	MAG 5100 W	MAG 8000	MAG 8000 CT	MAG 8000 Irigare
2006/95/CE	EN61010-1	2001	x	x	x	x	x	x	x	x	x	x	x
2004/108/CE	EN61326-1*	2006	x	x	x	x	x	x	x	x	x	x	x
2004/108/CE	EN61326-2-5	2006	x	x	x	x	x	x	x	x	x	x	x
94/9/CE	EN 1127-1	2007					X						
94/9/CE	EN60079-0	2006	X	X			X		X				
94/9/CE	EN60079-0	2009	X										
94/9/CE	EN60079-1	2007	X						X				
94/9/CE	EN60079-7	2007	X	X			X		X				
94/9/CE	EN60079-11	2007	X				X		X				
94/9/CE	EN61241-0	2006	x				X		X				
94/9/CE	EN61241-1	2004	x				X		X				
97/23/CE	PED ESR anexa 1	2004				x	X	x	X	X	x	X	
2004/22/CE	OIML R49	2006			X 1,3					X 2,3		X3	

* toate mediile incluse 1: numai cu MAG5100W 2: numai cu MAG5000CT/6000CT 3: numai marcat cu [m+an]

Anexa A face parte integrantă din această declaraţie.
Prezenta declaraţie atestă conformitatea cu directivele specificate, însă nu asigură proprietăţile. Documentaţia privind siguranţa produsului va fi luată în considerare în detaliu.

Siemens A/S Instrumente de debit
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SIEMENS

Anexa A la declaraţia de conformitate CE
nr. 083R3044 DS07

Certificate	MAG 6000 I	MAG 5000/6000	MAG 5000CT / 6000 CT	MAG 1100 /1100F / 1100 HT	MAG 1100 (Ex)	MAG 3100 /3100P /3100HT	MAG 3100 (Ex)	MAG 5100 W	MAG 8000	MAG 8000 CT	MAG 8000 Irigare
*SIRA 07 ATEX 1182X (MAG3100 DIN ≤300)							X				
*SIRA 07 ATEX 3181X					X						
*DEMKO 03 ATEX 135254X (barieră de siguranţă)		x									
*SIRA 03 ATEX 3339X (MAG3100 DN>300)							X				
SIRA 11ATEX2124X	X										
TUV 97 ATEX 1215 Q		X			X		X				
Certificat forţă A/S, DK-0200-PED-H-002				X	X	X	X	X	X	X	
Certificat forţă A/S, DK-0200-MI001-001			X					X			
Certificat forţă A/S, DK-0200-MI001-011										X	
Certificat forţă A/S, DK-0200-MID-D-007			X					X		X	

* Produsul este conform cu cerinţele directivei 94/9/CE. Unul sau mai multe dintre standardele prevăzute în certificatele de examinare a tipului CE, marcate cu *, au fost deja înlocuite de ediţii noi. Producătorul declară că acest produs este de asemenea conform cu noile ediţii, deoarece cerinţele modificate ale noilor ediţii nu afectează acest produs.

Inspecţie / monitorizare:

Directivă		Organism notificat pentru asigurarea calităţii	nr.
94/9/CE	ATEX	UL International Demo, Lyskaer 8, DK-2730 Herlev, Danemarca	0539
94/9/CE	ATEX	TUV Nord Cer GmbH, Langemarckstrasse 20, 45141 Essen	0044
97/23/CE	PED	Certificare FORCE A/S, Park Allee 345, Brøndby, Danemarca	0200
2004/22/CE	MID	Certificare FORCE A/S, Park Allee 345, Brøndby, Danemarca	0200

Anexa A face parte integrantă din această declaraţie.
Prezenta declaraţie atestă conformitatea cu directivele specificate, însă nu asigură proprietăţile. Documentaţia privind siguranţa produsului va fi luată în considerare în detaliu.

Siemens A/S Instrumente de debit
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SIEMENS

Manufacturer Declaration

Functional Safety according to IEC 61508

No. A5E47953272A - 001

Manufacturer:	Siemens AG Digital Industries Process Automation
Address:	DE-76181 Karlsruhe
Product description:	Flowmeter SITRANS F M MAG 6000 I + MAG 1100 / 3100 / 5100 W

7ME6930-***-**** MAG 6000 I**
7ME61a0-***-*d** MAG 1100**
7ME63b0-***-*d** MAG 3100**
7ME65c0-***-*e** MAG 5100 W**

a=1,2,4; b=1,2,4; c=2,8; d=A,B,C,D,E; e=A,C

We as manufacturer declare that the above identified devices are suitable for use in safety instrumented systems. The devices are capable of flow measurement for a safety instrumented function of Safety Integrity Level (SIL) 1 according to IEC 61508:2010. The total tolerance of the Safety Function is calculated according this formula:

Total tolerance (Safety Function) = ± [application specific measuring error + 2% safety accuracy of full span].

The SITRANS F M Product Manual shall be observed. Product revisions will be carried out by the manufacturer in accordance with IEC 61508.

The safety related characteristics and conditions are listed on page 3.

These characteristics are valid for low demand mode of operation. The PFD_{Avg} value is valid under the assumption of Mean Time To Restoration MTTR = 8 h and Proof Test Interval T_{Proof} = 8760 h.

Karlsruhe, 23.07.2019

Siemens Aktiengesellschaft

V. Rissland / Research & Development
(Name, function / Funktion)

i.V.

Signature / Unterschrift

J. Pflaum / Quality Management
(Name, function / Funktion)

i.V.

Signature / Unterschrift

SIEMENS

Herstellererklärung

Funktionale Sicherheit gemäß der Norm IEC 61508

Nr. A5E47953272A - 001

Hersteller:	Siemens AG Digital Industries Process Automation
Anschrift:	DE-76181 Karlsruhe
Produktbezeichnung	Duchflussmesser SITRANS F M MAG 6000 I + MAG 1100 / 3100 / 5100 W
	7ME6930-***-**** MAG 6000 I** **7ME61a0-*****-*d** MAG 1100** **7ME63b0-*****-*d** MAG 3100** **7ME65c0-*****-*e** MAG 5100 W**
	a=1,2,4; b=1,2,4; c=2,8; d=A,B,C,D,E; e=A,C

Wir als Hersteller erklären hiermit, dass die oben genannten Geräte für den Einsatz in einem sicherheitsgerichteten System geeignet sind. Die Geräte sind zur Durchflussmessung in einem sicherheitsgerichteten System bis Sicherheits-Integritätslevel (SIL) 1 nach IEC 61508:2010 geeignet. Die Genauigkeit der Sicherheitsfunktion berechnet sich nach der Formel:

Genauigkeit (Sicherheitsfunktion) = ± [applikationsspezifischer Messfehler + 2% Sicherheitsgenauigkeit bezogen auf die volle Messspanne].

Die Anweisungen des SITRANS F M Produkthandbuches müssen befolgt werden. Produktänderungen werden vom Hersteller nach den Anforderungen der IEC 61508 durchgeführt.

Die Sicherheitskennzahlen und Vorgaben zur Verwendung werden auf Seite 3 gelistet.

Diese Kennzahlen sind gültig für eine Betriebsart mit niedriger Anforderungsrate. Der PFD_{AVG} Wert ist gültig unter der Annahme von einer mittleren Dauer bis zur Wiederherstellung MTTR = 8 h und einem Intervall für die Wiederholungsprüfung T_{Proof} = 8760 h.

Karlsruhe, 23.07.2019

Siemens Aktiengesellschaft

V. Rissland / Research & Development
(Name, function / Funktion)

i.V.

Signature / Unterschrift

J. Pflaum / Quality Management
(Name, function / Funktion)

i.V.

Signature / Unterschrift

Manufacturer Declaration – Functional Safety
Herstellererklärung – Funktionale Sicherheit

Nr. A5E47953272A - 001

Product description: *Produktbezeichnung*	Flowmeter / Duchflussmesser SITRANS F M MAG 6000 I + MAG 1100 / 3100 / 5100 W **7ME6930-*****-**** MAG 6000 I** **7ME61a0-*****-*d** MAG 1100** **7ME63b0-*****-*d** MAG 3100** **7ME65c0-*****-*e** MAG 5100 W** a=1,2,4; b=1,2,4; c=2,8; d=A,B,C,D,E; e=A,C

Safety Related Characteristics	
Safety Function	**Flow Measurement Value by analog output 4-20 mA**
Device Type	**B**
SIL Safety Integrity Level	**1**
HFT	**0**
PFD_{Avg} (1 year)	**$3.06*10^{-4}$**
PFH	**$1.74*10^{-7}$**
SFF Safe Failure Fraction	**64 %**
DC Diagnostic Coverage	**60 %**
λ_D Dangerous Failure Rate	**174 FIT**
λ_{DD} Dangerous detected Failure Rate	**104 FIT**
λ_{DU} Dangerous undetected Failure Rate	**70 FIT**

The Safety assessment is based on equipment proven in use and on field feedback.

For use of the Flowmeter in Safety Instrumentation Systems these conditions apply:

1) The Flowmeter Measurement Value shall be output by the Analog Output 4-20 mA.
2) All device errors and alarms shall be indicated as Failure Current by the Analog Output 4-20 mA.

Die Sicherheitsbeurteilung basiert auf Betriebsbewährung und der Auswertung der Feldstatistik.

Für die Verwendung des Durchflussmessers in sicherheitsgerichteten Systemen müssen folgende Bedingungen eingehalten werden:

1) Der Messwert des Durchflussmessers muss über den Analogausgang 4-20 mA ausgegeben werden.
2) Alle Fehlermeldungen und Alarme des Gerätes müssen als Fehlerstrom über den Analogausgang 4-20 mA ausgegeben werden.

SIEMENS

Manufacturer Declaration

Functional Safety according to IEC 61508

No. A5E47953260A - 001

Manufacturer:	Siemens AG Digital Industries Process Automation
Address:	DE-76181 Karlsruhe
Product description:	Flowmeter SITRANS F M MAG 5000 + MAG 1100 / 3100 / 5100 W
	7ME6910-***-**** MAG 5000** **7ME61a0-*****-*d** MAG 1100** **7ME63b0-*****-*d** MAG 3100** **7ME65c0-*****-*d** MAG 5100 W**
	a=1,2,4; b=1,2,4; c=2,8; d=A,K,L

We as manufacturer declare that the above identified devices are suitable for use in safety instrumented systems. The devices are capable of flow measurement for a safety instrumented function of Safety Integrity Level (SIL) 1 according to IEC 61508:2010. The total tolerance of the Safety Function is calculated according this formula:

Total tolerance (Safety Function) = ± [application specific measuring error + 2% safety accuracy of full span].

The SITRANS F M Product Manual shall be observed. Product revisions will be carried out by the manufacturer in accordance with IEC 61508.

The safety related characteristics and conditions are listed on page 3.

These characteristics are valid for low demand mode of operation. The PFD_{Avg} value is valid under the assumption of Mean Time To Restoration MTTR = 8 h and Proof Test Interval T_{Proof} = 8760 h.

Karlsruhe, 23.07.2019

Siemens Aktiengesellschaft

V. Rissland / Research & Development
(Name, function / Funktion)

Signature / Unterschrift

J. Pflaum / Quality Management
(Name, function / Funktion)

Signature / Unterschrift

SIEMENS

Herstellererklärung

Funktionale Sicherheit gemäß der Norm IEC 61508

Nr. A5E47953260A - 001

Hersteller:	Siemens AG Digital Industries Process Automation
Anschrift:	DE-76181 Karlsruhe
Produktbezeichnung	Duchflussmesser SITRANS F M MAG 5000 + MAG 1100 / 3100 / 5100 W
	7ME6910-***-**** MAG 5000** **7ME61a0-*****-*d** MAG 1100** **7ME63b0-*****-*d** MAG 3100** **7ME65c0-*****-*d** MAG 5100 W**
	a=1,2,4; b=1,2,4; c=2,8; d=A,K,L

Wir als Hersteller erklären hiermit, dass die oben genannten Geräte für den Einsatz in einem sicherheitsgerichteten System geeignet sind. Die Geräte sind zur Durchflussmessung in einem sicherheitsgerichteten System bis Sicherheits-Integritätslevel (SIL) 1 nach IEC 61508:2010 geeignet. Die Genauigkeit der Sicherheitsfunktion berechnet sich nach der Formel:

Genauigkeit (Sicherheitsfunktion) = ± [applikationsspezifischer Messfehler + 2% Sicherheitsgenauigkeit bezogen auf die volle Messspanne].

Die Anweisungen des SITRANS F M Produkthandbuches müssen befolgt werden. Produktänderungen werden vom Hersteller nach den Anforderungen der IEC 61508 durchgeführt.

Die Sicherheitskennzahlen und Vorgaben zur Verwendung werden auf Seite 3 gelistet.

Diese Kennzahlen sind gültig für eine Betriebsart mit niedriger Anforderungsrate. Der PFD_{AVG} Wert ist gültig unter der Annahme von einer mittleren Dauer bis zur Wiederherstellung MTTR = 8 h und einem Intervall für die Wiederholungsprüfung T_{Proof} = 8760 h.

Karlsruhe, 23.07.2019

Siemens Aktiengesellschaft

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J. Pflaum / Quality Management
(Name, function / Funktion)

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Manufacturer Declaration – Functional Safety
Herstellererklärung – Funktionale Sicherheit

Nr. A5E47953260A - 001

Product description: *Produktbezeichnung*	Flowmeter / Duchflussmesser SITRANS F M MAG 5000 + MAG 1100 / 3100 / 5100 W **7ME6910-*****-**** MAG 5000** **7ME61a0-*****-*d** MAG 1100** **7ME63b0-*****-*d** MAG 3100** **7ME65c0-*****-*d** MAG 5100 W** a=1,2,4; b=1,2,4; c=2,8; d=A,K,L

Safety Related Characteristics	
Safety Function	**Flow Measurement Value by analog output 4-20 mA**
Device Type	**B**
SIL Safety Integrity Level	**1**
HFT	**0**
PFD_{Avg} (1 year)	**$7.59*10^{-4}$**
PFH	**$4.31*10^{-7}$**
SFF Safe Failure Fraction	**64 %**
DC Diagnostic Coverage	**60 %**
λ_D Dangerous Failure Rate	**431 FIT**
λ_{DD} Dangerous detected Failure Rate	**258 FIT**
λ_{DU} Dangerous undetected Failure Rate	**173 FIT**

The Safety assessment is based on equipment proven in use and on field feedback.

For use of the Flowmeter in Safety Instrumentation Systems these conditions apply:

1) The Flowmeter Measurement Value shall be output by the Analog Output 4-20 mA.
2) All device errors and alarms shall be indicated as Failure Current by the Analog Output 4-20 mA.

Die Sicherheitsbeurteilung basiert auf Betriebsbewährung und der Auswertung der Feldstatistik.

Für die Verwendung des Durchflussmessers in sicherheitsgerichteten Systemen müssen folgende Bedingungen eingehalten werden:

1) Der Messwert des Durchflussmessers muss über den Analogausgang 4-20 mA ausgegeben werden.
2) Alle Fehlermeldungen und Alarme des Gerätes müssen als Fehlerstrom über den Analogausgang 4-20 mA ausgegeben werden.

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SIEMENS

Manufacturer Declaration

Functional Safety according to IEC 61508

No. A5E47953267A - 001

Manufacturer:	Siemens AG Digital Industries Process Automation
Address:	DE-76181 Karlsruhe
Product description:	Flowmeter SITRANS F M MAG 6000 + MAG 1100 / 3100 / 5100 W

7ME6920-***-**** MAG 6000**
7ME61a0-***-*d** MAG 1100**
7ME63b0-***-*d** MAG 3100**
7ME65c0-***-*d** MAG 5100 W**

a=1,2,4; b=1,2,4; c=2,8; d=A,H,J

We as manufacturer declare that the above identified devices are suitable for use in safety instrumented systems. The devices are capable of flow measurement for a safety instrumented function of Safety Integrity Level (SIL) 1 according to IEC 61508:2010. The total tolerance of the Safety Function is calculated according this formula:

Total tolerance (Safety Function) = ± [application specific measuring error + 2% safety accuracy of full span].

The SITRANS F M Product Manual shall be observed. Product revisions will be carried out by the manufacturer in accordance with IEC 61508.

The safety related characteristics and conditions are listed on page 3.

These characteristics are valid for low demand mode of operation. The PFD_{Avg} value is valid under the assumption of Mean Time To Restoration MTTR = 8 h and Proof Test Interval T_{Proof} = 8760 h.

Karlsruhe, 23.07.2019

Siemens Aktiengesellschaft

V. Rissland / Research & Development
(Name, function / Funktion)

Signature / Unterschrift

J. Pflaum / Quality Management
(Name, function / Funktion)

Signature / Unterschrift

SIEMENS

Herstellererklärung

Funktionale Sicherheit gemäß der Norm IEC 61508

Nr. A5E47953267A - 001

Hersteller:	Siemens AG Digital Industries Process Automation
Anschrift:	DE-76181 Karlsruhe
Produktbezeichnung	Duchflussmesser SITRANS F M MAG 6000 + MAG 1100 / 3100 / 5100 W
	7ME6920-***-**** MAG 6000** **7ME61a0-*****-*d** MAG 1100** **7ME63b0-*****-*d** MAG 3100** **7ME65c0-*****-*d** MAG 5100 W**
	a=1,2,4; b=1,2,4; c=2,8; d=A,H,J

Wir als Hersteller erklären hiermit, dass die oben genannten Geräte für den Einsatz in einem sicherheitsgerichteten System geeignet sind. Die Geräte sind zur Durchflussmessung in einem sicherheitsgerichteten System bis Sicherheits-Integritätslevel (SIL) 1 nach IEC 61508:2010 geeignet. Die Genauigkeit der Sicherheitsfunktion berechnet sich nach der Formel:

Genauigkeit (Sicherheitsfunktion) = ± [applikationsspezifischer Messfehler + 2% Sicherheitsgenauigkeit bezogen auf die volle Messspanne].

Die Anweisungen des SITRANS F M Produkthandbuches müssen befolgt werden. Produktänderungen werden vom Hersteller nach den Anforderungen der IEC 61508 durchgeführt.

Die Sicherheitskennzahlen und Vorgaben zur Verwendung werden auf Seite 3 gelistet.

Diese Kennzahlen sind gültig für eine Betriebsart mit niedriger Anforderungsrate. Der PFD_{AVG} Wert ist gültig unter der Annahme von einer mittleren Dauer bis zur Wiederherstellung MTTR = 8 h und einem Intervall für die Wiederholungsprüfung T_{Proof} = 8760 h.

Karlsruhe, 23.07.2019

Siemens Aktiengesellschaft

V. Rissland / Research & Development
(Name, function / Funktion)

i.V.

Signature / Unterschrift

J. Pflaum / Quality Management
(Name, function / Funktion)

i.V.

Signature / Unterschrift

Manufacturer Declaration – Functional Safety
Herstellererklärung – Funktionale Sicherheit

Nr. A5E47953267A - 001

Product description: *Produktbezeichnung*	Flowmeter / Duchflussmesser SITRANS F M MAG 6000 + MAG 1100 / 3100 / 5100 W **7ME6920-*****-**** MAG 6000** **7ME61a0-*****-*d** MAG 1100** **7ME63b0-*****-*d** MAG 3100** **7ME65c0-*****-*d** MAG 5100 W** a=1,2,4; b=1,2,4; c=2,8; d=A,H,J

Safety Related Characteristics	
Safety Function	**Flow Measurement Value by analog output 4-20 mA**
Device Type	**B**
SIL Safety Integrity Level	**1**
HFT	**0**
PFD_{Avg} (1 year)	**$1.07*10^{-3}$**
PFH	**$6.05*10^{-7}$**
SFF Safe Failure Fraction	**64 %**
DC Diagnostic Coverage	**60 %**
λ_D Dangerous Failure Rate	**605 FIT**
λ_{DD} Dangerous detected Failure Rate	**363 FIT**
λ_{DU} Dangerous undetected Failure Rate	**242 FIT**

The Safety assessment is based on equipment proven in use and on field feedback.

For use of the Flowmeter in Safety Instrumentation Systems these conditions apply:

1) The Flowmeter Measurement Value shall be output by the Analog Output 4-20 mA.
2) All device errors and alarms shall be indicated as Failure Current by the Analog Output 4-20 mA.

Die Sicherheitsbeurteilung basiert auf Betriebsbewährung und der Auswertung der Feldstatistik.

Für die Verwendung des Durchflussmessers in sicherheitsgerichteten Systemen müssen folgende Bedingungen eingehalten werden:

1) Der Messwert des Durchflussmessers muss über den Analogausgang 4-20 mA ausgegeben werden.
2) Alle Fehlermeldungen und Alarme des Gerätes müssen als Fehlerstrom über den Analogausgang 4-20 mA ausgegeben werden.

CERTIFICATE

This is to certify that

Siemens AG

DI FA

Gleiwitzer Straße 555
90475 Nürnberg
Germany

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality Management System**.

Scope:
Development, Production, Sales and Service of Automation Products, -Systems and -Solutions

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2015

Certificate registration no.	001323 QM15
Date of revision	2019-04-01
Valid from	2018-03-26
Valid until	2021-03-25
Date of certification	2018-03-26

DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-16074-01-00

DQS GmbH

Stefan Heinloth
Managing Director

Annex to certificate
Registration No. 001323 QM15

Siemens AG
DI FA

Gleiwitzer Straße 555
90475 Nürnberg
Germany

Location	Scope
071211 **Siemens AG** **DI FA** **Leipziger Straße 400** **09247 Chemnitz** **Germany**	Development of Automation Products
360077 **Siemens AG** **DI FA** **Lyoner Straße 27** **60528 Frankfurt am Main** **Germany**	Development, Engineering and After Sales of production and logistics facilities
413053 **Siemens AG** **DI FA** **Östliche Rheinbrückenstraße 50** **76187 Karlsruhe** **Germany**	Development of Automation Products and -Systems
347432 **Siemens AG** **DI FA** **Gleiwitzer Straße 555** **90475 Nürnberg** **Germany**	Development, Sales and Service of Automation Products, -Systems and -Solutions
332160 **Siemens AG** **DI FA** **Breslauer Straße 5** **90766 Fürth** **Germany**	Development, Production, Sales and Service of Automation Products and -Systems

Annex to certificate
Registration No. 001323 QM15

Siemens AG

DI FA

Gleiwitzer Straße 555
90475 Nürnberg
Germany

Location	Scope
347433 **Siemens AG** **DI FA** **Siemensstraße 2-4** **90766 Fürth** **Germany**	Development of Automation Products and -Systems
081342 **Siemens AG** **DI FA** **Frauenauracher Straße 80** **91056 Erlangen** **Germany**	Development and Sales of Automation Systems and -Solutions
065229 **Siemens AG** **DI FA** **Werner-von-Siemens-Straße 50** **92224 Amberg** **Germany**	Development, Production and Service of Automation Products

This annex (edition: 2019-04-01) is only valid in connection with the above-mentioned certificate.

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

DQS Holding GmbH has issued an IQNet recognized certificate that the organization

Siemens AG
DI FA

Gleiwitzer Straße 555
90475 Nürnberg
Germany

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality Management System**.

Scope:
Development, Production, Sales and Service of Automation Products, -Systems and -Solutions

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 9001 : 2015

Issued on: 2018-03-26
Expires on: 2021-03-25

This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand-alone document.

Registration number: DE-001323 QM15

Alex Stoichitoiu
President of IQNet

Michael Drechsel
Managing Director of
DQS Holding GmbH

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Siemens AG

DI FA

Gleiwitzer Straße 555
90475 Nürnberg
Germany

Location	Scope
071211 **Siemens AG** **DI FA** **Leipziger Straße 400** **09247 Chemnitz** **Germany**	Development of Automation Products
360077 **Siemens AG** **DI FA** **Lyoner Straße 27** **60528 Frankfurt am Main** **Germany**	Development, Engineering and After Sales of production and logistics facilities
413053 **Siemens AG** **DI FA** **Östliche Rheinbrückenstraße 50** **76187 Karlsruhe** **Germany**	Development of Automation Products and -Systems
347432 **Siemens AG** **DI FA** **Gleiwitzer Straße 555** **90475 Nürnberg** **Germany**	Development, Sales and Service of Automation Products, -Systems and -Solutions

Annex to IQNet Certificate Number: 001323 QM15

Siemens AG

DI FA

Gleiwitzer Straße 555
90475 Nürnberg
Germany

Location	Scope
332160 **Siemens AG** **DI FA** **Breslauer Straße 5** **90766 Fürth** **Germany**	Development, Production, Sales and Service of Automation Products and -Systems
347433 **Siemens AG** **DI FA** **Siemensstraße 2-4** **90766 Fürth** **Germany**	Development of Automation Products and -Systems
081342 **Siemens AG** **DI FA** **Frauenauracher Straße 80** **91056 Erlangen** **Germany**	Development and Sales of Automation Systems and -Solutions
065229 **Siemens AG** **DI FA** **Werner-von-Siemens-Straße 50** **92224 Amberg** **Germany**	Development, Production and Service of Automation Products

CERTIFICATE

This is to certify that

Siemens AG

DI MC

Frauenauracher Str. 80
91056 Erlangen
Germany

with the organizational units/sites as listed in the annex

has implemented and maintains an **Environmental Management System**.

Scope:
Development, production and sales of products for Automation and Drives

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 14001 : 2015

Certificate registration no.	001258 UM15
Date of revision	2019-09-02
Valid from	2017-07-30
Valid until	2020-07-29
Date of certification	2019-09-02

DAkkS Deutsche Akkreditierungsstelle D-ZM-16074-01-00

DQS GmbH

Markus Bleher
Managing Director

Annex to certificate
Registration No. 001258 UM15

Siemens AG
DI MC

Frauenauracher Str. 80
91056 Erlangen
Germany

Location	Scope
259346 **Siemens s.r.o. odštepnÿ závod** **Elektromotory Frenštát** **Markova 952** **744 01 Frenštát pod Radhoštěm** **Czech Republic**	Development, production, test and service of standard motors, components and customer-specific design
259345 **Siemens s.r.o. odštěpný závod** **Elektromotory Mohelnice** **Nádražní 25** **789 85 Mohelnice** **Czech Republic**	Development, production, test and service of standard motors, components and customer-specific design
081340 **Siemens AG** **Clemens-Winkler-Str. 3** **09116 Chemnitz** **Germany**	Development, production and sales of products for Automation and Drives
409908 **Siemens AG** **Bahnhofstrasse 40-44** **72072 Tübingen** **Germany**	Development, production, sales and service of gears and geared motors
352323 **Siemens AG** **Vogelweiherstraße 1-15** **90441 Nürnberg** **Germany**	Development, production, test, sales and service of electrical machines and electrical drive systems for industrial and Tracktion use as well as related components
081342 **Siemens AG** **Frauenauracher Straße 80** **91056 Erlangen** **Germany**	Development, production and sales of products for Automation and Drives

Annex to certificate
Registration No. 001258 UM15

Siemens AG

DI MC

Frauenauracher Str. 80
91056 Erlangen
Germany

Location	Scope
060257 **Siemens AG** **Industriestraße 1** **97616 Bad Neustadt** **Germany**	Development, production and sales of products for Automation and Drives
259348 **Siemens** **Varey Road** **Congleton** **Cheshire** **CW12 1PH** **United Kingdom**	Design / development, production and service of Standard Drives

This annex (edition: 2019-09-02) is only valid in connection with the above-mentioned certificate.

THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

DQS Holding GmbH has issued an IQNet recognized certificate that the organization

Siemens AG
DI MC

Frauenauracher Str. 80
91056 Erlangen
Germany

with the organizational units/sites as listed in the annex

has implemented and maintains an **Environmental Management System**.

Scope:
Development, production and sales of products for Automation and Drives

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 14001: 2015

Issued on: 2019-09-02
Expires on: 2020-07-29

This attestation is directly linked to the IQNet Partner's original certificate and shall not be used as a stand-alone document.

Registration number: DE-001258 UM15

Alex Stoichitoiu
President of IQNet

Michael Drechsel
Managing Director of
DQS Holding GmbH

IQNet Partners*:

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CQC *China* CQM *China* CQS *Czech Republic* Cro Cert *Croatia* DQS Holding GmbH *Germany* FCAV *Brazil*
FONDONORMA *Venezuela* ICONTEC *Colombia* Inspecta Sertifiointi Oy *Finland* INTECO *Costa Rica*
IRAM *Argentina* JQA *Japan* KFQ *Korea* MIRTEC *Greece* MSZT *Hungary* Nemko AS *Norway* NSAI *Ireland*
NYCE-SIGE *México* PCBC *Poland* Quality Austria *Austria* RR *Russia* SII *Israel* SIQ *Slovenia*
SIRIM QAS International *Malaysia* SQS *Switzerland* SRAC *Romania* TEST St Petersburg *Russia* TSE *Turkey* YUQS *Serbia*
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Annex to IQNet Certificate Number: 001258 UM15

Siemens AG

DI MC

Frauenauracher Str. 80
91056 Erlangen
Germany

Location	Scope
259346 **Siemens s.r.o. odštěpný závod Elektromotory Frenštát** **Markova 952** **744 01 Frenštát pod Radhoštěm** **Czech Republic**	Development, production, test and service of standard motors, components and customer-specific design
259345 **Siemens s.r.o. odštěpný závod Elektromotory Mohelnice** **Nádražní 25** **789 85 Mohelnice** **Czech Republic**	Development, production, test and service of standard motors, components and customer-specific design
081340 **Siemens AG** **Clemens-Winkler-Str. 3** **09116 Chemnitz** **Germany**	Development, production and sales of products for Automation and Drives
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352323 **Siemens AG** **Vogelweiherstraße 1-15** **90441 Nürnberg** **Germany**	Development, production, test, sales and service of electrical machines and electrical drive systems for industrial and Tracktion use as well as related components

Annex to IQNet Certificate Number: 001258 UM15

Siemens AG

DI MC

Frauenauracher Str. 80
91056 Erlangen
Germany

Location	Scope
081342 **Siemens AG** **Frauenauracher Straße 80** **91056 Erlangen** **Germany**	Development, production and sales of products for Automation and Drives
060257 **Siemens AG** **Industriestraße 1** **97616 Bad Neustadt** **Germany**	Development, production and sales of products for Automation and Drives
259348 **Siemens** **Varey Road** **Congleton** **Cheshire** **CW12 1PH** **United Kingdom**	Design / development, production and service of Standard Drives

Electromagnetic flowmeters

SITRANS F M MAG 5100 W

Operating Instructions • 11/2010

SITRANS F

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Electromagnetic Flowmeters SITRANS F M MAG 5100 W

Operating Instructions

Introduction 1

Safety notes 2

Description 3

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Connecting 5

Service and maintenance 6

Troubleshooting/FAQs 7

Technical data 8

Appendix A

Electromagnetic sensor type SITRANS F M MAG 5100 W for use with transmitter types SITRANS F M MAG 5000/6000/6000I

11/2010
A5E03063678-02

Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ CAUTION

with a safety alert symbol, indicates that minor personal injury can result if proper precautions are not taken.

CAUTION

without a safety alert symbol, indicates that property damage can result if proper precautions are not taken.

NOTICE

indicates that an unintended result or situation can occur if the corresponding information is not taken into account.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation for the specific task, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

⚠ WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be adhered to. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of the Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Siemens AG
Industry Sector
Postfach 48 48
90026 NÜRNBERG
GERMANY

order number: A5E03063678
℗ 11/2010

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Introduction

1

These instructions contain all the information you need for using the device.

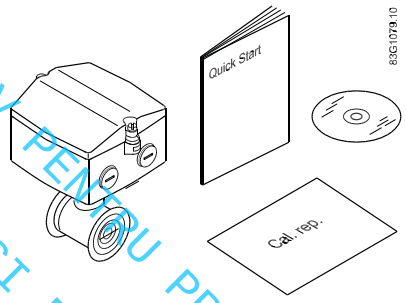
The instructions are aimed at persons mechanically installing the device, connecting it electronically, configuring the parameters and commissioning it as well as service and maintenance engineers.

Note

It is the responsibility of the customer that the instructions and directions provided in the manual are read, understood and followed by the relevant personnel before installing the device.

1.1 Items supplied

- SITRANS F M MAG 5100 W
- Calibration report
- SITRANS F M literature CD
- Quick Start guide



1.2 History

The contents of these instructions are regularly reviewed and corrections are included in subsequent editions. We welcome all suggestions for improvement.

The following table shows the most important changes in the documentation compared to each previous edition.

Edition	Remarks
11/2010	Minor updates
07/2010	First edition Replaces MAG 5100 W part of SITRANS F M Handbook (A5E02435647) and MAG 5100 W instruction (A5E00718677)

1.3 Further Information

The contents of these Operating Instructions shall not become part of or modify any prior or existing agreement, commitment or legal relationship. All obligations on the part of Siemens AG are contained in the respective sales contract which also contains the complete and solely applicable warranty conditions. Any statements contained herein do not create new warranties or modify the existing warranty.

Product information on the Internet

The Operating Instructions are available on the CD-ROM shipped with the device, and on the Internet on the Siemens homepage, where further information on the range of SITRANS F flowmeters may also be found:

Product information on the internet (http://www.siemens.com/flowdocumentation)

Worldwide contact person

If you need more information or have particular problems not covered sufficiently by the operating instructions, please get in touch with your contact person. You can find contact information for your local contact person on the Internet:

Local contact person (http://www.automation.siemens.com/partner)

See also

Technical support (Page 30)

Safety notes

2

CAUTION
Correct, reliable operation of the product requires proper transport, storage, positioning and assembly as well as careful operation and maintenance. Only qualified personnel should install or operate this instrument.

Note

Alterations to the product, including opening or improper repairs of the product, are not permitted.

If this requirement is not observed, the CE mark and the manufacturer's warranty will expire.

2.1 Laws and directives

General requirements

Installation of the equipment must comply with national regulations.

Instrument safety standards

The device has been tested at the factory, based on the safety requirements. In order to maintain this condition over the expected life of the device the requirements described in these Operating Instructions must be observed.

CAUTION
Material compatibility Siemens Flow Instruments can provide assistance with the selection of wetted sensor parts. However, the full responsibility for the selection rests with the customer and Siemens Flow Instruments can take no responsibility for any failure due to material incompatibility.

CE marked equipment

All meters carry either a CE mark or a CE mark followed by eg.200

- CE200: This indicates that the product conforms to:
  - PED 97/23/EC
  - LVD 2006/95/EC
  - EMC 2004/108/EC
- CE: This indicates that the product conforms to:
  - LVD 2006/95/EC
  - EMC 2004/108/EC

Compliance with PED directive

"Pressure Equipment Directive" (PED) is mandatory for all pressure equipment sold within the EU and EFTA.

Siemens Flow Instruments products confirms to PED by following the tables below.

Table 2- 1 MAG 5100 W (7ME6580 only DN15 ... 600 (½" ... 24"))

Flange mm	PN 10	PN 16	PN 40	150 lb	300 lb
15	N/A	N/A	SEP	SEP	N/A
25	N/A	N/A	SEP	SEP	N/A
40	N/A	N/A	SEP	SEP	N/A
50	N/A	SEP	N/A	SEP	N/A
65	N/A	SEP	N/A	SEP	N/A
80	N/A	SEP	N/A	SEP	N/A
100	SEP	SEP	N/A	SEP	N/A
125	N/A	SEP	N/A	PED	N/A
150	N/A	PED	N/A	PED	N/A
200	SEP	PED	N/A	PED	N/A
250	LVD	PED	N/A	PED	N/A
300	LVD	PED	N/A	PED	N/A
350	LVD	PED	N/A	PED	N/A
400	LVD	PED	N/A	PED	N/A
450	LVD	PED	N/A	PED	N/A
500	LVD	PED	N/A	PED	N/A
600	LVD	PED	N/A	PED	N/A
700	LVD	PED*	N/A	N/A	PED
750	N/A	N/A	N/A	N/A	PED

800	LVD	PED*	N/A	N/A	PED
900	LVD	PED*	N/A	N/A	PED
1000	LVD	PED*	N/A	N/A	PED
1050	N/A	N/A	N/A	N/A	PED
1100	N/A	N/A	N/A	N/A	PED
1200	LVD	PED*	N/A	N/A	PED

The key to the tables is as follows:

PED	Product covered by PED and only available as fully PED-conforming
PED*	Product covered by PED but available as either conforming or non-conforming to PED
SEP	Excluded from PED under Sound Engineering Practice
LVD	Excluded from PED under the Low Voltage Directive

2.2 Installation in hazardous area

⚠ WARNING
Equipment used in hazardous areas must be approved for use in hazardous area and marked accordingly. It is required that the special conditions for safe use provided in the manual and in the FM / CSA certificates are followed!

Hazardous area approvals

The device is approved for use in hazardous area and has the following approvals:

- MAG 5100 W DN 15 ... 1200: FM / CSA Class I, Div. 2

WARNING

Make sure the hazardous area approval is suitable for the environment in which the device will be installed.

WARNING

All approvals are based on non-flammable processes only!

WARNING

Potential equalization

In operation, the output is earthed through the conductive medium being measured and therefore potential equalisation is necessary throughout the hazardous area.

The apparatus housing shall be connected to the potential equalising conductor in the hazardous area.

WARNING

Laying of cables

Cables for use in hazardous area must satisfy the requirements for having a proof voltage < AC 500 V applied between the conductor/ground, conductor/shield and shield/ground.

Connect the devices that are operated in hazardous areas as per the stipulations applicable in the country of operation.

2.3 Certificates

Certificates are posted on the Internet and on the documentation CD-ROM shipped with the device.

See also

Technical data (Page 37)

Certificates on the Internet (http://www.siemens.com/processinstrumentation/certificates)

Description

3

The main applications of the SITRANS F M electromagnetic flow sensors can be found in the following fields:

- Process industry
- Chemical industry
- Steel industry
- Mining
- Utility
- Power generation & distribution
- Oil & gas / HPI
- Water & waste water
- Pulp & paper

3.1 System components

The SITRANS F M USM II flowmeter system includes:

- Transmitter (types: SITRANS F M MAG 5000/6000 or MAG 6000 I)
- Sensor (types: SITRANS F M MAG 1100/1100F, MAG 3100/3100 P or MAG 5100 W)
- Communication module (optional) (types: HART, PROFIBUS PA/DP, MODBUS RTU RS 485, Foundation Fieldbus H1, Devicenet)
- SENSORPROM memory unit

Communication solutions

The SITRANS F USM II range of add on modules, presently including HART, Foundation Fieldbus. MODBUS RTU RS 485, PROFIBUS PA / DP and Devicenet, are all applicable with the SITRANS F M MAG 6000 transmitter.

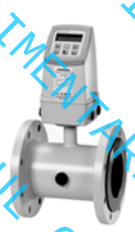
The SITRANS F M MAG 5100 W sensor housing and flanges are designed in carbon steel and terminal box in fibre glass reinforced polyamide. Measuring pipe is made of stainless steel (AISI 304) and liners are available in NBR Hard Rubber, Ebonite Hard Rubber, or EPDM, which makes the sensor highly resistant to a wide range of chemicals. Electrodes are made of Hastelloy.

MAG 5100W DN15 ... 40

MAG 5100W DN50 ... 300

MAG 5100W DN350 ... 1200 (7ME6520)

MAG 5100W DN25 ... 2000 (7ME6580)



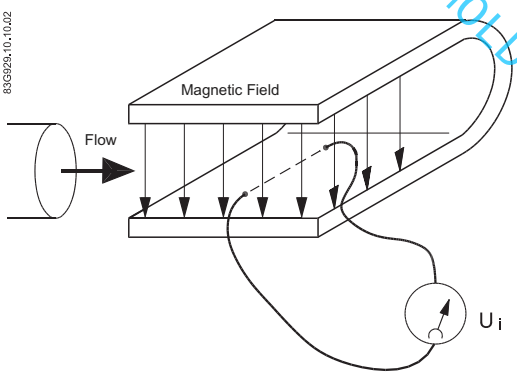
MAG 5100W compact installation with MAG 5000/6000 IP67

MAG 5100W compact installation with MAG 6000 I

The sensors carry a wide range of approvals, see Technical data (Page 37).

3.2 Theory of operation

The flow measuring principle is based on Faraday's law of electromagnetic induction.



U_i = When an electrical conductor of length L is moved at velocity v, perpendicular to the lines of flux through a magnetic field of strength B, the voltage Ui is induced at the ends of the conductor

U_i = L x B x v

- Ui = Induced voltage
- L = Conductor length = Inner pipe diameter = k_1
- B = Magnetic field strength = k_2
- v = Velocity of conductor (media)
- k = k_1 x k_2

Ui = k x v, the electrode signal is directly proportional to the fluid velocity

Operating principle

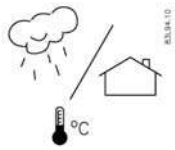
The coil current module generates a pulsating magnetizing current that drives the coils in the sensor. The current is permanently monitored and corrected. Errors or cable faults are registered by the self-monitoring circuit.

Input circuit amplifies the flow proportional induced voltage signal from the electrodes. The input impedance is extremely high: >10^{14} Ω which allows flow measurements on fluids with conductivities as low as 5 µS/cm. Measuring errors due to cable capacitance are eliminated due to active cable screening.

Digital signal processor converts the analog flow signal to a digital signal and suppresses electrode noise through a digital filter. Inaccuracies in the transmitter as a result of long-term drift and temperature drift are monitored and continuously compensated for via the self-monitoring circuit. The analog to digital conversion takes place in an ultra low noise ASIC with 23 bit signal resolution. This has eliminated the need for range switching. The dynamic range of the transmitter is therefore unsurpassed with a turn down ratio of minimum 3000:1.

Installing/Mounting

4



SITRANS F flowmeters with minimum IP67/NEMA 4X enclosure rating are suitable for in- and outdoor installations.

- Make sure that pressure and temperature specifications indicated on the device nameplate / label will not be exceeded.

WARNING
Installation in hazardous location Special requirements apply to the location and interconnection of sensor and transmitter. See "Installation in hazardous area" (Page 9)

4.1 Installation safety precautions

WARNING
In applications with working pressures/media that can be dangerous to people, surroundings, equipment or others in case of pipe fracture, we recommend that special precautions such as special placement, shielding or installation of a security guard or a security valve are taken when the sensor is mounted.

- Ensure that stresses and loading caused by e.g. earthquakes, traffic, high winds and fire damage if appropriate are taken into account during installation.
- Ensure that the flowmeter is installed such that it does not act as a focus for pipeline stresses. External loadings are not taken into account in the flowmeter design.
- Provide adequate protection to minimise any risk of contact with hot surfaces.

WARNING
Prevent personal injuries by assuring that operation below pressure guards cannot take place, if working with vacuum or fluids boiling readily.

4.2 Determining a location

NOTICE
The sensor must always be completely filled with liquid.

- Locate the the flowmeter in u-shaped pipes if pipes are only partially filled or have free outlet

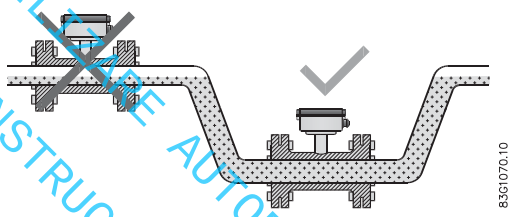


Figure 4-1 Correct installation in U-tube

- Avoid the following installations
  - Installation at the highest point in the pipe system
  - Installation in vertical pipes with free outlet

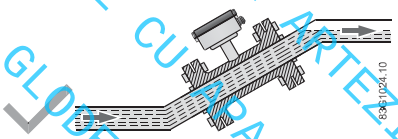


Figure 4-2 Correct installation with filled pipes

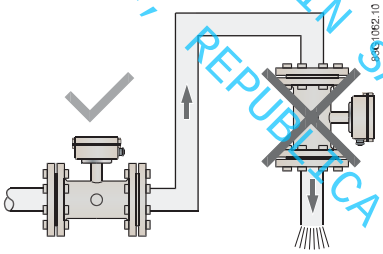


Figure 4-3 Correct installation at low point in system before outlet

Inlet and outlet conditions

To achieve accurate flow measurement it is essential to have straight lengths of inlet and outlet pipes and a certain distance to pumps and valves.

It is also important to centre the flowmeter in relation to pipe flanges and gaskets.

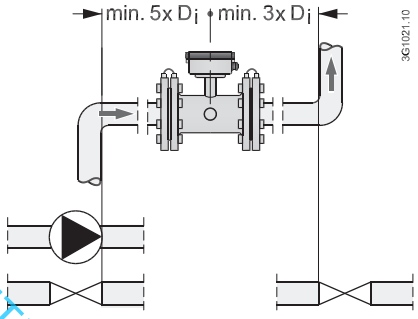
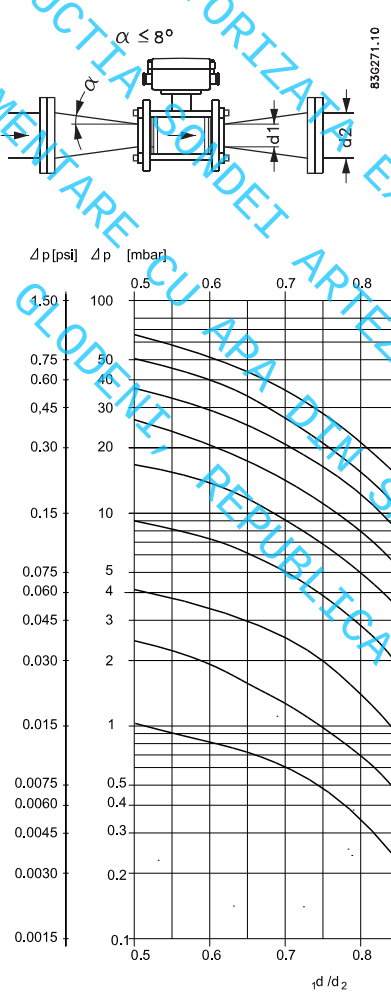


Figure 4-4 Inlet and outlet conditions

Installation in large pipes

The flowmeter can be installed between two reducers (e.g. DIN 28545). At 8° the following pressure drop curves apply. The curves are applicable to water.



Example:

A flow of 3 m/s (V) in a sensor with a diameter reduction from DN 100 to DN 80 (d_1/d_2 = 0.8) gives a pressure drop of 2.9 mbar.

4.3 Orienting the sensor

The sensor operates in all orientations, but Siemens has the following recommendations:

- Vertical installation with an upwards flow

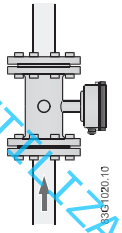


Figure 4-5 Vertical orientation, upwards flow

CAUTION
Abrasive liquids / liquids containing solid particles A vertical installation minimizes wear and deposits in the sensor

NOTICE
Gas/air bubbles in the liquid A vertical installation minimizes any negative effect of gas/air bubbles in the liquid

- Horizontal installation, terminal box upwards or downwards

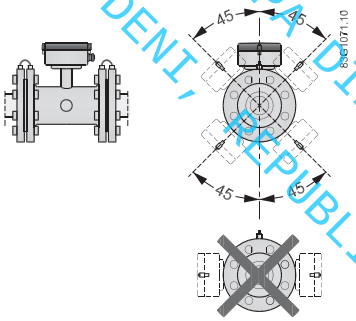


Figure 4-6 Horizontal installation, various terminal box positions

CAUTION
Do NOT mount the sensor with the terminal box sideways This will position the electrodes at the top where there is possibility for air bubbles and at the bottom where there is possibility for mud, sludge, sand etc.

NOTICE
Empty pipe detection For applications with empty pipe detection, the sensor can be tilted 45°, as shown above.

4.4 Mounting

- Install the sensor in rigid pipelines in order to support the weight of the meter.
- Center the connecting pipelines axially in order to avoid turbulent flow profiles.
- Use proper gaskets according to liner type

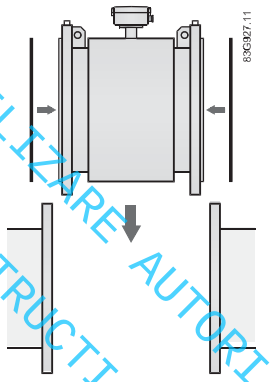


Figure 4-7 Correct installation with gaskets

Vibrations

Avoid strong vibrations.

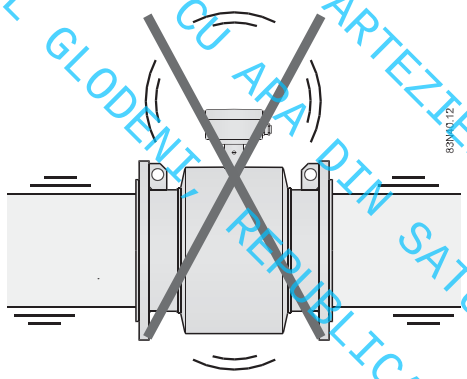


Figure 4-8 Avoid vibrations

CAUTION

In applications with strong vibrations, Siemens recommend remote mounting of the transmitter!

Torques

Fasten screws according to the torques values below

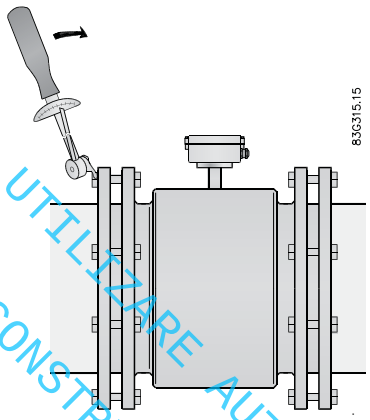


Figure 4-9 Torques values

NOTICE
Torque values are calculated on the basis of use of gaskets.

Table 4- 1 Maximum allowable torques

DN		PN 10		PN 16		PN 40		Class 150		AWWA	
Mm	Inch	Nm	F/lbs	Nm	F/lbs	Nm	F/lbs	Nm	F/lbs	Nm	F/lbs
15	½	N/A	N/A	N/A	N/A	10	7	6	5	N/A	N/A
25	1"	N/A	N/A	N/A	N/A	10	7	11	5	N/A	N/A
40	1½"	N/A	N/A	N/A	N/A	16	12	9	7	N/A	N/A
50	2"	N/A	N/A	N/A	N/A	N/A	N/A	25	18	N/A	N/A
65	2½"	N/A	N/A	25/25	18/18	N/A	N/A	25	18	N/A	N/A
80	3"	N/A	N/A	25/25	18/18	N/A	N/A	34	25	N/A	N/A
100	4"	N/A	N/A	25/25	18/18	N/A	N/A	26	19	N/A	N/A
125	5"	N/A	N/A	29/32	21/24	N/A	N/A	42	31	N/A	N/A
150	6"	N/A	N/A	50/50	37/37	N/A	N/A	57	42	N/A	N/A
200	8"	50/50	37/37	50/52	37/38	N/A	N/A	88	65	N/A	N/A
250	10"	50/50	37/37	82/88	61/65	N/A	N/A	99	73	N/A	N/A
300	12"	57/62	42/46	111/117	82/86	N/A	N/A	132	97	N/A	N/A
350	14"	60/60	44/44	120/120	89/89	N/A	N/A	225	166	N/A	N/A
400	16"	88/88	65/65	170/170	125/125	N/A	N/A	210	155	N/A	N/A
450	18"	92/92	68/68	170/170	125/125	N/A	N/A	220	162	N/A	N/A
500	20"	103/103	76/76	230/230	170/170	N/A	N/A	200	148	N/A	N/A
600	24"	161/161	119/119	350/350	258/258	N/A	N/A	280	207	N/A	N/A
700	28"	200/200	148/148	304/304	224/224	N/A	N/A	N/A	N/A	200	148
750	30"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	240	177

DN		PN 10		PN 16		PN 40		Class 150		AWWA	
800	32"	274/274	202/202	386/380	285/285	N/A	N/A	N/A	N/A	260	192
900	36"	288/288	213/213	408/408	301/301	N/A	N/A	N/A	N/A	240	177
1000	40"	382/382	282/282	546/546	403/403	N/A	N/A	N/A	N/A	280	207
1050	42"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	280	207
1100	44"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	290	214
1200	48"	395/395	292/292	731/731	539/538	N/A	N/A	N/A	N/A	310	229
1400	54"	-/503	-/317	-/736	-/543	N/A	N/A	N/A	N/A	528	389
1600	66"	-/684	-/505	-/913	-/674	N/A	N/A	N/A	N/A	698	515
1800	72"	-/771	-/569	-/937	-/692	N/A	N/A	N/A	N/A	700	516
2000	78"	-/867	-/640	-/1128	-/832	N/A	N/A	N/A	N/A	890	656

4.5 Potential equalization

To obtain optimum results from the measuring system, the sensor must have the same electrical potential as the liquid being measured.

This is achieved by means of built-in grounding electrodes.

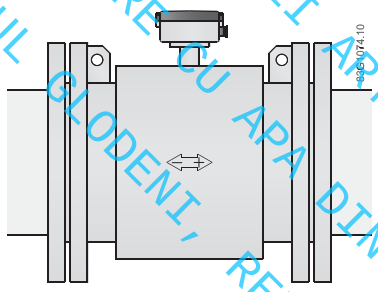


Figure 4-10 Potential equalization with earthing electrodes

Cathodic protected piping

Special attention must be paid to systems with cathodic protection

⚠ WARNING
Use in hazardous area!
Cathodic pipe protection is not allowed in hazardous areas

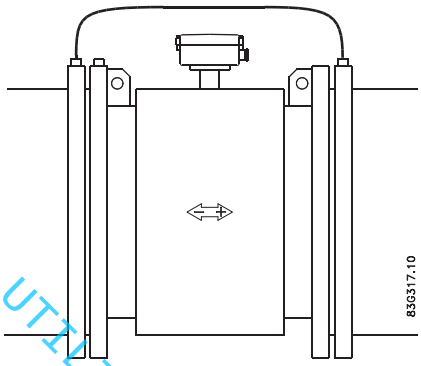


Figure 4-11 Cathodic protection

- Isolate the sensor from cathodic protected pipes using insulated bolts.
- Use bypass cable between the mating flanges

NOTICE
Remote mounted sensor versions If the above is not acceptable, remote mounted sensors can alternatively be connected as follows: • Connect coil current cable shield at sensor end via a 1.5 µF condensator • Make sure that electrode cable shield is not connected at both ends

Connecting

5

The following contains a short description of how to connect a remote mounted sensor to a transmitter type SITRANS F M MAG 5000 / 6000 or MAG 6000 I. For more information, e.g. about wiring of power supply and outputs, refer to the Operating Instructions for the respective transmitters.

Before connecting

- Check that serial numbers on sensor and SENSORPROM® unit are identical.

WARNING

The pertinent regulations must be observed for electrical installation.

- Never install the device with the mains voltage switched on!
- Danger of electric shock!
- The electrodes and magnetic current line may only be connected when the device is not connected to the power supply.
- If the housing is under voltage (power supply), the cover may be unscrewed by qualified personnel only.

WARNING

Mains supply from building installation Class II

A switch or circuit breaker (max. 15 A) must be installed in close proximity to the equipment and within easy reach of the operator. It must be marked as the disconnecting device for the equipment.

Cable specifications

- Only use cables with at least the same degree of protection as the sensor to install the sensor.
- The line length from the cable gland to the terminals must be kept as short as possible. Line loops in the terminal box must be avoided.

- To guarantee the IP 67 degree of protection, use cables with the required specifications.

⚠ WARNING
Protective conductor terminal The required cable is min. AGW16 or 1.5 Cu.

⚠ WARNING
Wire insulation The insulation between the connected mains supply and 24 V AC/DC supply for the flowmeter must at least be rated with double or reinforced insulation at mains voltage. For field wiring installation: Ensure that the **National Installation Code** of the country in which the flowmeters are installed is met.

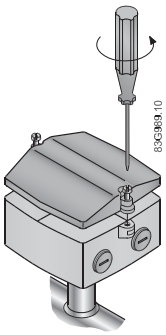
See also

Cable data (Page 40)

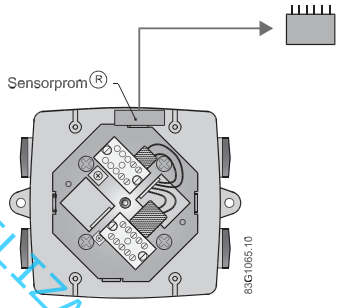
5.1 Remote installation

NOTICE
Remote installation only The following applies to remote installation of MAG 5000 / 6000 or MAG 6000 I.

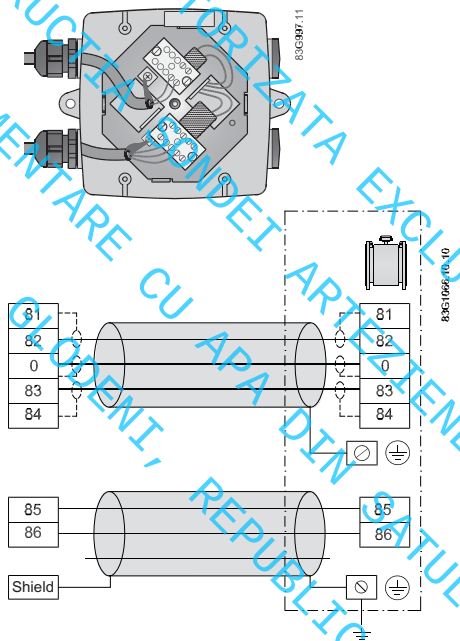
1. Unscrew and remove terminal box lid.



2. Remove SENSORPROM® unit from sensor and mount it on connection plate in transmitter, see relevant transmitter operating instructions.



3. Fit the ½" NPT or M20 cable glands for supply and output cables.
4. Fit and connect electrode and coil cables as shown below.



CAUTION

Unshielded cable ends

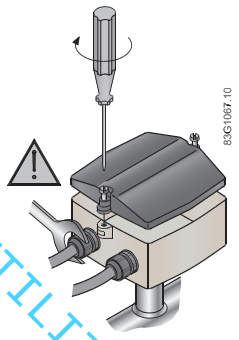
Keep unscreened cable ends as short as possible.

CAUTION

Prevent interference

Separate electrode and coil cables to prevent interference.

5. Tighten cable glands well to obtain optimum sealing.



WARNING
Mount terminal box lid before power up.

5.2 Installation check

The meter is now ready to go into normal operation - for commissioning and setting of parameters refer to the relevant transmitter manual.

Before commissioning it must be checked that:

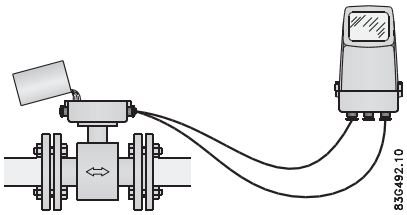
- The device has been installed and connected in accordance with the guidelines provided in chapter 4 Installing/mounting (Page 15) and 5 Connecting (Page 23)

5.3 Potting

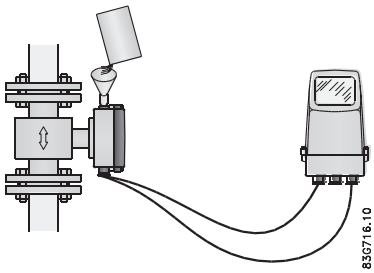
If sensor is buried or permanently submerged, terminal box must be encapsulated with silicon dielectric gel (non-toxic, transparent and self-healing gel)

CAUTION
Do **not** pot meter before electrical connections have been made.

- Mix the two components of the potting kit well and pour into terminal box.
- Let cure for approximately 24 hours at approximately 25°C (77°F). Curing time increases by 100% per -10°C (-18°F).



Horizontal orientation



Vertical orientation

NOTICE
Gel can be penetrated with test instruments or be removed in case of cable replacement.

5.4 Direct burial

Recommendations for direct burial of remote sensor:

- Check for visible damages in paint finish !
- Use protection conduit !
- Protect sensor with pea gravel at least 3000 mm around sensor. This provides some drainage and also avoids caking sensor with earth. It also helps to locate sensor in case excavation takes place.

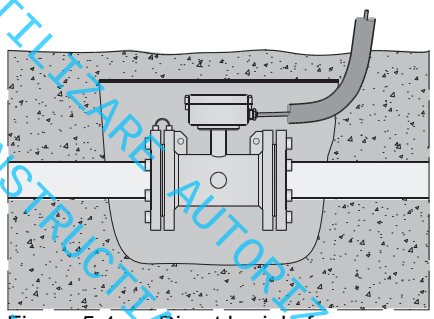


Figure 5-1 Direct burial of sensor

CAUTION

Sensor should not be subject to heavy vehicles applying excessive weight above sensor or pipeline

CAUTION

SENSORPROM® memory unit

Remove the SENSORPROM® from terminal box on sensor and relocate in remote transmitter prior to burying sensor.

All sensor data plate information and serial number should be recorded for each sensor prior to burying. This will ensure correct matching with SENSORPROM® unit.

WARNING

Electrical cable identification

Use suitable coil and electrode cables

Lay electrical cable identification tape above pea gravel before it is covered with earth.

Service and maintenance

6

6.1 Maintenance

The device is maintenance-free, however, a periodic inspection according pertinent directives and regulations must be carried out.

An inspection can include check of:

- Ambient conditions
- Seal integrity of the process connections, cable entries, and cover screws
- Reliability of power supply, lightning protection, and grounds

6.2 Recalibration

Siemens A/S Flow Instruments offers to recalibrate the sensor. The following calibrations are offered as standard:

- Standard matched pair calibration

Note

For recalibration the memory unit must always be returned with the sensor

6.3 Transportation/storage

The sensor is a fragile piece of equipment. Impact and shock can cause measuring inaccuracy. Therefore during transportation it must be placed in the transportation box delivered by Siemens Flow Instruments. If this is not possible, the alternative sensor packaging must be able to withstand the hazards from transportation.

Handling

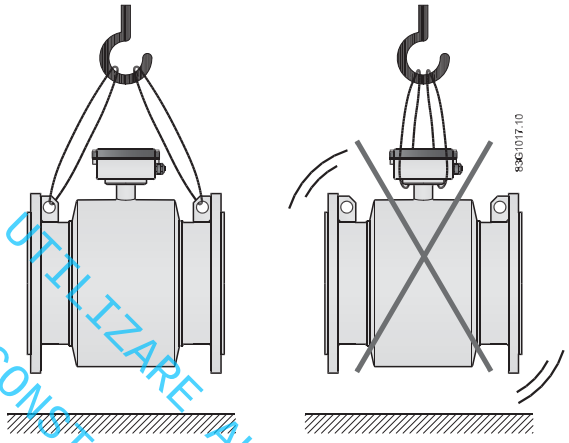


Figure 6-1 Handling of sensor

6.4 Unit repair

CAUTION
Repair and service must be carried out by Siemens authorized personnel only.

Note

Siemens Flow Instruments defines sensors as non-repairable products.

6.5 Technical support

If you have any technical questions about the device described in these Operating Instructions and do not find the right answers, you can contact Technical Support:

- Via the Internet using the **Support Request:**
  Support request (http://www.siemens.com/automation/support-request)
- Via Phone:
  - Europe: +49 (0)911 895 7222
  - America: +1 423 262 5710
  - Asia-Pacific: +86 10 6475 7575

Further information about our technical support is available in the Internet at Technical support (http://support.automation.siemens.com/WW/view/en/16604318)

Service & Support on the Internet

In addition to our documentation, we offer a comprehensive knowledge base online on the Internet at:

Service and support (http://www.siemens.com/automation/service&support)

There you will find:

- The latest product information, FAQs, downloads, tips and tricks.
- Our newsletter, providing you with the latest information about your products.
- A Knowledge Manager to find the right documents for you.
- Our bulletin board, where users and specialists share their knowledge worldwide.
- You can find your local contact partner for Industry Automation and Drives Technologies in our partner database.
- Information about field service, repairs, spare parts and lots more under "Services."

Additional Support

Please contact your local Siemens representative and offices if you have additional questions about the device

Find your contact partner at:

Local contact person (http://www.automation.siemens.com/partner)

6.6 Return procedures

Enclose the delivery note, the cover note for return delivery together with the declaration of decontamination form on the outside of the package in a well-fastened clear document pouch.

Required forms

- **Delivery Note**
- **Cover Note for Return Delivery** with the following information

  Cover note (http://support.automation.siemens.com/WW/view/en/16604370)
  - product (ordering number)
  - number of devices or spare parts returned
  - reason for the return

- **Declaration of Decontamination**

  Declaration of Decontamination (http://pia.khe.siemens.com/efiles/feldg/files/Service/declaration_of_decontamination_en.pdf)

  With this declaration you certify *that the returned products/spare parts have been carefully cleaned and are free from any residues.*

  If the device has been operated together with toxic, caustic, flammable or water-damaging products, clean the device before return by rinsing or neutralizing. Ensure that all cavities are free from dangerous substances. Then, double-check the device to ensure the cleaning is completed.

  We shall not service a device or spare part unless the declaration of decontamination confirms proper decontamination of the device or spare part. Shipments without a declaration of decontamination shall be cleaned professionally at your expense before further proceeding.

You can find the forms on the Internet and on the CD delivered with the device.

Troubleshooting/FAQs

7

7.1 Sensor check

Requirement

To check the SITRANS F M sensors the following test instruments will be required:

- Digital Meter/Multimeter
- Megger
- (Moving Coil Meter)

Sensor check

Remove the transmitter from the sensor or remote position before making the following checks.

Coil resistance check

- Measure the coil resistance between connection numbers 85 and 86 using a digital meter.
  Resistance should be around 100 ohms ±10 ohms. (See Coil resistence table)

A low reading may indicate moisture within the coil housing or shorted coil tums.

A high reading would indicate an open circuit coil.

NOTICE
In case of deviation from nominal coil values, the sensor is damaged and must be replaced

Coil insulation check

⚠ WARNING
Potential hazard! Only carry our a coil insulation check in non-hazardous area!

- Megger between connection number 85 and the sensor body.
  The resistance should be above 20 Megohms.

A low megger reading would indicate the coil insulation is braking down. This is normally due to fluid ingress into the coil housing.

Sensors with an insulation resistance down to 1 Megohms may still work satisfactorily but this is not guaranteed.

Electrode resistance check

- Measure the electrode resistance between connections 82 and Zero with a moving coil meter.
  With a sensor full of fluid the resistance should be between 5Kohms and 50Kohms.
  If the sensor is empty the resistance will be infinite.
- Repeat the resistance measurements between connections 83 and Zero.
  The results should be the same.

If the resistance is low there may be a short on the electrodes or wiring (in the case of a remote mounted transmitter). Alternatively there may be water ingress or moisture in the terminal box.

If the resistance is high and the pipe is completely full of fluid check the following:

1. The fluid is electrically conductive.
2. Electrodes are not coated with grease or any deposit.
3. Electrode circuit is not open
4. The remote mounted transmitter has a 3 core cable with an overall shield continuously from the sensor to the transmitter, including junction boxes and terminal rails inside panels.
5. The shield is connected to the Zero or to the earth terminal (PE) on the sensor.

NOTICE
Sensors removed from line For sensors removed from line with dry bore, use megger between terminal 82 and compression plate, and 83 and compression plate to show any water ingress behind electrodes or within enclosure.

7.2 Fluctuating process values

Question

Why do the displayed process values fluctuate when the electrode cable is moved?

Answer

There are several causes to the fluctuating process values:

- Deposits on electrodes
  - Clean the electrodes.
- Defect electrode cable
  - Replace the cable
- Incorrect cable connection
  - Connect the electrode cable (82, 83, 0 and shield) according to the instructions in chapter Connecting (Page 23)

NOTICE
Vibrating environments It is recommended to use special low noise cables for sensor sizes DN 2 and 3 installed in vibrating environments.

Technical data

8

8.1 MAG 5100 W

Table 8- 1 Technical data

Version	MAG 5100W (7ME6520)	MAG 5100W (7ME6580)
Product characteristic	Mainly for the European market EPDM or NBR lining	Mainly for the non-European market Ebonite lining
Design and nominal size	*Coned sensor:* • DN 15 ... 300 (½" ... 12") *Full bore sensor:* • DN 350 ... 1200 (14" ... 48")	*Full bore sensor:* • DN 25 ... 2000 (1" ... 78")
Measuring principle	Electromagnetic induction	
Excitation frequency (Mains supply: 50 Hz/60 Hz)	*DN 15 ... 65 (½" ... 2½"):* • 12.5 Hz / 15 Hz *DN 80 ... 150 (3" ... 6"):* • 6.25 Hz / 7.5 Hz *DN 200 ... 300 (8" ... 12"):* • 3.125 Hz / 3.75 Hz *DN 350 ... 1200 (14" ... 48"):* • 1.5625 Hz / 1.875 Hz	*DN 25 ... 65 (1" ... 2½"):* • 12.5 Hz / 15 Hz *DN 80 ... 150 (3" ... 6"):* • 6.25 Hz / 7.5 Hz *DN 200 ... 1200 (8" ... 48"):* • 3.125 Hz / 3.75 Hz *DN 1400 ... 2000 (54" ... 78"):* • 1.5625 Hz / 1.875 Hz

Table 8- 2 Process connections

Version	MAG 5100W (7ME6520)	MAG 5100W (7ME6580)
EN 1092-1	*PN 10 (145 psi):* • DN 200 ... 300 (8" ... 12") Flat face flanges *PN 10 (145 psi):* • DN 350 ... 1200 (14" ... 48") Raised face flanges *PN 16 (232 psi):* • DN 50 ... 300 (2" ... 12") Flat face flanges *PN 16 (232 psi):* • DN 350 ... 1200 (14" ... 48") Raised face flanges *PN 40 (580 psi):* • DN 15 ... 40 (½" ... 1½") Flat face flanges	Raised face (EN 1092-1, DIN 3501 and BS4504 have the same mating dimensions) PN 16 (87 psi): • DN 1400 ... 2000 (54" ... 78") PN 10 (145 psi): • DN 200 ... 2000 (8" ... 78") PN16 (232 psi): • DN 65 ... 600 (2½" ... 24") PN 40 (580 psi): • DN 25 ... 50 (1" ... 2")
ANSI B16.5	Class 150 lb: ½" ... 24"	Class 150 lb: 1" ... 24"

Version	MAG 5100W (7ME6520)	MAG 5100W (7ME6580)
AWWA C-207	Class D: • 28" ... 48", Flat face flanges	Class D: • 28" ... 78", Flat face flanges
AS4087	*PN 16 (230 psi):* • DN 50 ... 1200 (2" ... 48")	*PN 16 (230 psi):* • DN 50 ... 1200 (2" ... 48")
JIS B 2220:2004	-	K10 (1" ... 24")

Table 8- 3 Rated operating conditions

Version	MAG 5100W (7ME6520)	MAG 5100W (7ME6580)
Ambient temperature • Sensor	-40 ... +70 °C (-40 ... +158 °F)	-40 ... +70 °C (-40 ... +158 °F)
• With compact transmitter		
MAG 5000/6000	-20 ... +60 °C (-4 ... +140 °F)	-20 ... +60 °C (-4 ... +140 °F)
MAG 6000 I	-20 ... +60 °C (-4 ... +140 °F)	-20 ... +60 °C (-4 ... +140 °F)
Operating pressure [abs. bar][1]	DN 15 ... 40 (½" ... 1½") 0.01 ... 40 bar (0.15 ... 580 psi) DN 50 ... 300 (2" ... 12") 0.03 ... 20 bar (0.44 ... 290 psi) DN 350 ... 1200 (14" ... 48") 0.01 ... 16 bar (0.15 ... 232 psi)	DN 25 ... 50 (1" ... 2") 0.01 ... 40 bar (0.15 ... 580 psi) DN 65 ... 1200 (2½" ... 48") 0.01 ... 16 bar (0.15 ... 232 psi) DN 1400 ... 2000 (54" ... 78") 0.01 ... 10 bar (0.15 ... 145 psi)
Enclosure rating		
Standard	IP67 to EN 60529 / NEMA 4X/6 (1 mH_2O for 30 minutes)	IP67 to EN 60529 / NEMA 4X/6 (1 mH_2O for 30 minutes)
Option	IP68 to EN 60529 / NEMA 6P (10 mH_2O continuously)	IP68 to EN 60529 / NEMA 6P (10 mH_2O continuously)
Corrosive category	C4 according to ISO 12944-2	C4 according to ISO 12944-2
Pressure drop	DN 15 and 25 (½" and 1"): • Max. 20 mbar (0.29 psi) at 1 m/s (3 ft/s) DN 40 ... 300 (1½" ... 12"): • Max. 25 mbar (0.36 psi) at 3 m/s (10ft/s) DN 350 ... 1200 (14" ... 48"): • Insginificant	Insignificant
Test pressure	1.5 x PN (where applicable)	1.5 x PN (where applicable)
Mechanical load (vibration)	18 ... 1000 Hz random in x,y, z directions for 2 hours according to EN 60068-2-36 Sensor: 3.17 grms Sensor with compact MAG 5000/6000 transmittter mounted: 3.17 grms Sensor with compact MAG 6000 I transmitter mounted: 1.14 grms	18 ... 1000 Hz random in x,y, z directions for 2 hours according to EN 60068-2-36 Sensor: 3.17 grms Sensor with compact MAG 5000/6000 transmittter mounted: 3.17 grms Sensor with compact MAG 6000 I transmitter mounted: 1.14 grms

Version	MAG 5100W (7ME6520)	MAG 5100W (7ME6580)
Process fluid temperature		
NBR	-10 ... +70 °C (14 ... 158 °F)	-
EPDM	-10 ... +70 °C (14 ... 158 °F)	-
EPDM (MI-001)	+0.1 ... +30 °C (32 ... 76 °C)	-
Ebonite	-	-10 ... +70 °C (14 ... 158 °F)
EMC	EMC 2004/108/EC	EMC 2004/108/EC

Maximum operating pressure decreases with increasing operating temperature

Table 8- 4 Design

Version	MAG 5100W (7ME6520)	MAG 5100W (7ME6580)
Housing and flange material	Carbon steel, with corrosion-resistant two-component epoxy coating (min. 150 µm) Corrosive category C4, according to ISO 12944-2	Carbon steel ASTM A 105, with corrosion-resistant two-component epoxy coating (min. 150 µm)
Measuring pipe	AISI 304 (1.4301)	AISI 304 (1.4301)
Electrodes	Hastelloy	Hastelloy
Grounding electrodes (standard	Hastelloy	Hastelloy
Terminal box	Fibre glass reinforced polyamide	Fibre glass reinforced polyamide

Table 8- 5 Certificates and approvals

Version	MAG 5100W (7ME6520)	MAG 5100W (7ME6580)
Calibration Standard production calibration, calibration report shipped with sensor	DN 15 ... 300: • Zero-point, 2 x 25 % and 2 x 90 % DN 350 ... 1200: • Zero-point, 1 x 25 % and 1 x 90 %	Zero-point, 2 x 25 % and 2 x 90 %
Custody transfer (only with MAG 5000/6000 CT)	*OIML R 49 pattern approval cold water (Denmark and Germany):* • DN 50 ... 300 (2" ... 12") *MI 001 cold water (EU):* • DN 50 ... 300 (2" ... 12")	-

Version	MAG 5100W (7ME6520)	MAG 5100W (7ME6580)
Drinking water approvals	*EPDM liner:* • ANSI/NSF 61 Standard (Cold water, US) • WRAS (WRc, BS6920 cold water, GB) • ACS (F) • DVGW W270 (D) • Belgaqua (NBR) *NBR liner:* • ANSI/NSF 61 Standard (Cold water, US), only ANSI and AWWA flanges)	• NSF/ANSI Standard 61 (Cold water, US) • WRAS (WRc, BS6920 cold water, GB)
Other approvals	• MCERTS • PED - 97/23 EC[1)], CRN • FM Class 1, Div 2 • CSA Class 1, Div 2	• PED - 97/23 EC[1)] (only < DN 600 (< 24")) • FM Class 1, Div 2 • CSA Class 1, Div 2

1) : For sizes larger than 600 mm (24") in PN 16, PED conformity is available as cost-added option. The basic unit will carry the LVD (Low Voltage Directive) and EMC approval.

8.2 Cable data

Description

Cable for standard electrode or coil	
Electrode cable, double shielded	
Cable kit with standard coil cable and electrode cable double shielded (also available as low noise cable for MAG 1100 sensor)	

Standard applications

Table 8- 6 Technical data, standard application cables

		Coil cable	Standard electrode cable
Basic data	No. of conductors	2	3
	Min. sqr. area	0.5 mm²	0.2 mm²
	Shield	Yes	Yes
	Max. capacitance	N/A	350 pF/m

		Coil cable	Standard electrode cable
Max. cable loop resistance	Media temperature:		
	< 100 °C	40 Ω	N/A
	> 200 °C	6 Ω	N/A
Cable glands on sensor and transmitter	M20x1.5 gland - Cable ø 5 ... 13 mm (0.20 ... 0.51 inches)		
	½ NPT gland - cable ø 5 ... 9 mm (0.20 ... 0.35 inches)		

Special applications, e.g. low conductivity or electrical noise

Table 8- 7 Technical data, special application cables

		Coil cable	Special electrode cable
Basic data	No. of conductors	3	3
	Sqr. area	1.5 mm²	0.25 mm²
	Shield	Yes	Double
	Color code	Brown, blue, black	Brown, blue, black
	Outside color	Grey	Grey
	Ext. diameter	7.8 mm	8.1 mm
	Conductor	Flexible CU	Flexible CU
	Isolation material	PVC	PVC
Ambient temperature	Flexible installation	-5 ... +70°C (23 ... 158°F)	-5 ... +70°C (23 ... 158°F)
	Non-flexible installtaion	-30 ... +70°C (-22 ... 158°F)	-30 ... +70°C (-22 ... 158°F)
Cable parameter	Capacity	161.50 pF/m	N/A
	Inductance	0.583 µH/m	N/A
	L/R	43.83 þH/Ω	N/A

8.3 Effect of temperature on working pressure

Effect of temperature on working pressure.

Table 8- 8 Metric measures (pressure in bar)

Flange specifications	Flange rating	Temperature (°C)			
		-5	10	50	90
Sizes DN25 ... 2000					
EN 1092-1	PN 10	10.0	10.0	9.7	9.4
	PN 16	16.0	16.0	15.5	15.1
	PN 40	40.0	40.0	38.7	37.7
ANSI B16.5	150 lb	19.7	19.7	19.3	18.0
AWWA C-207	Class D	10.3	10.3	10.3	10.3

Flange specifications	Flange rating	Temperature (°C)			
		-5	10	50	90
Sizes DN 15 ... 300 (order no. 7ME6520 only)					
EN 1092-1	PN 10	10.0	10.0	10.0	8.2
	PN 16	10.0	16.0	16.0	13.2
	PN 40	40.0	40.0	38.7	37.7
ANSI B16.5	150 lb	10.0	19.7	19.7	16.2

Table 8- 9 Imperial measures (pressure in psi)

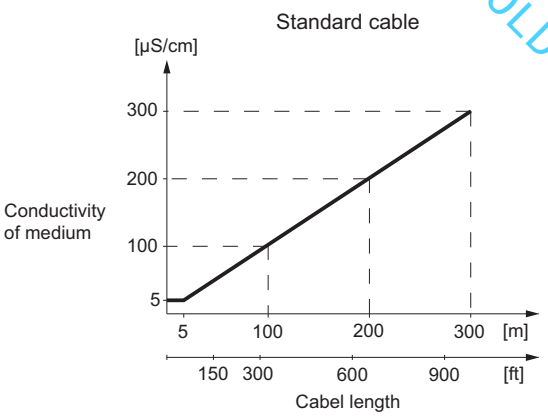
Flange specifications	Flange rating	Temperature (°F)			
		23	50	120	200
Sizes 1" ... 78"					
EN 1092-1	PN 10	145	145	141	136
	PN 16	232	232	225	219
	PN 40	580	580	561	547
ANSI B16.5	150 lb	286	286	280	261
AWWA C-207	Class D	150	150	150	150l
Sizes ½"... 12" (order no. 7ME6520 only)					
EN 1092-1	PN 10	145	145	145	119
	PN 16	145	232	232	191
ANSI B16.5	150 lb	145	286	286	235

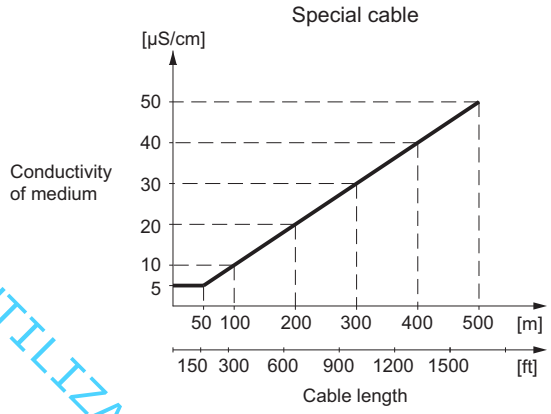
8.4 Process fluid conductivity

Compact installation

Liquids with an electrical conductivity ≥ 5 µS/cm.

Remote installation





WARNING

For detection of empty sensor the min. conductivity must always be >50 µS/cm and the max. length of the electrode cable when remote mounted is 50 meters (164 ft). Special cable must be used!

For remote MID installations the max. cable length is 3 meters (9.8 ft). For other CT application standard requirements are applicable.

8.5 Liner selection

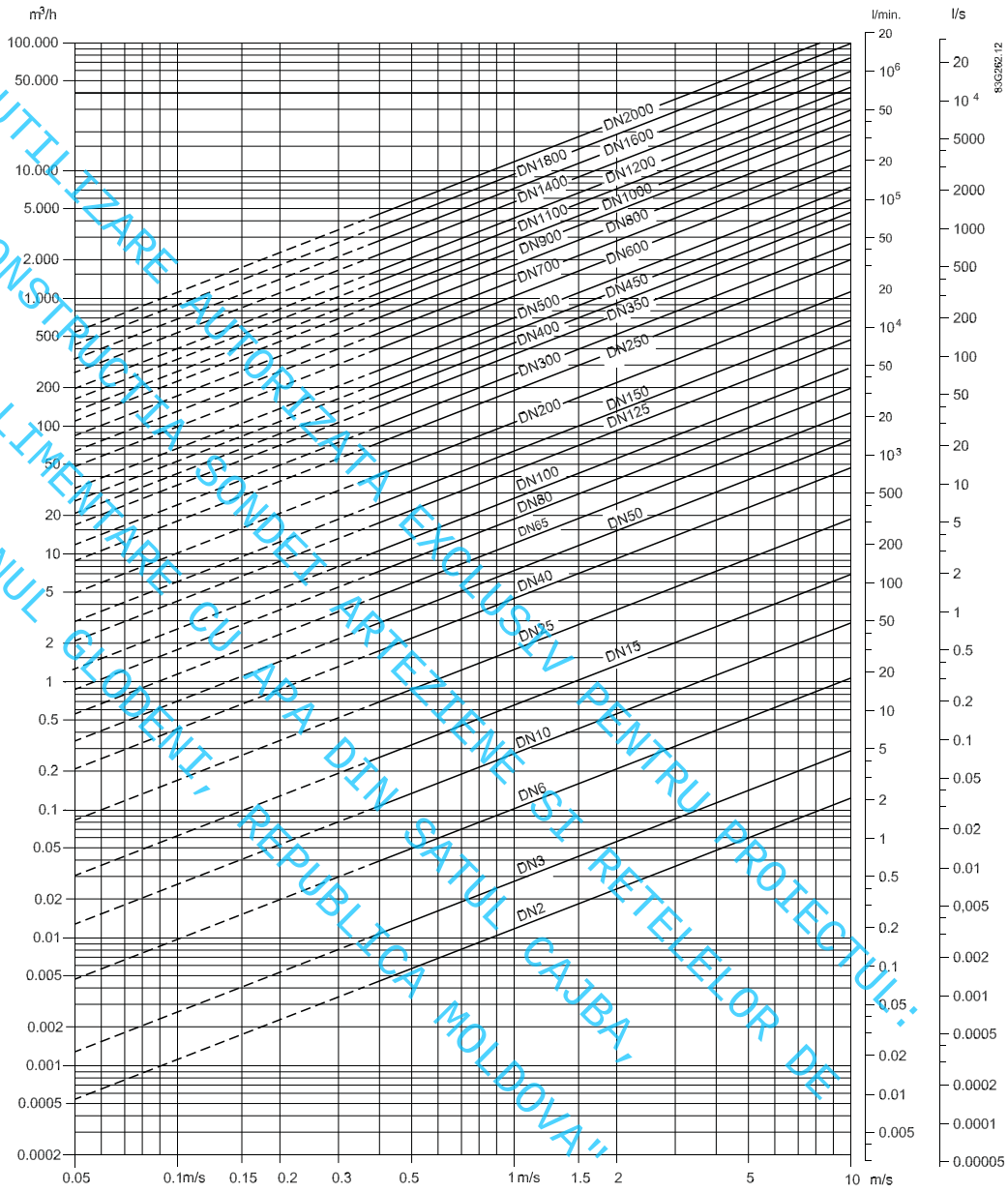
Liner	Applications
EPDM	Drinking water applications (not hydrocarbons)
Ebonite	Drinking water applications wastewater applications and certain chemicals applications
NBR	General purpose. Drinking water, sea waters

8.6 Electrode selection

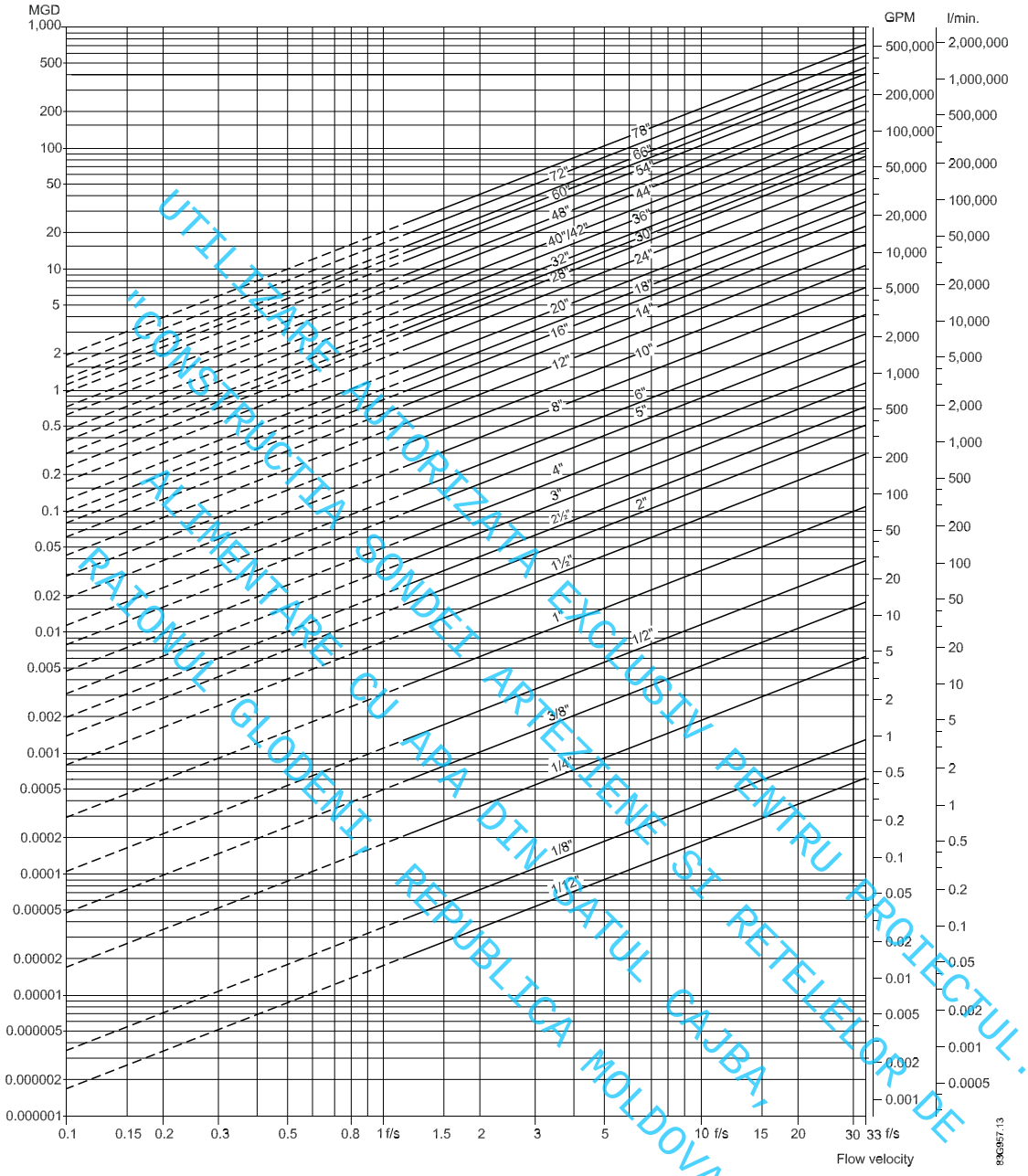
Electrodes	
Hastelloy C	The preferred choice for water and wastewater, chemicals, food and beverage, and pharmaceutical industries

8.7 Sizing tables

Sizing table (DN 2 ... DN 2000)



Sizing table (DN 1/12" ... DN 78")



The tables show the relationship between flow velocity v, flow quantity Q and sensor dimension DN.

Guidelines for selection of sensor

Min. measuring range: 0 ... 0.25 m/s (0 ... 0.8 ft/s)

Max. measuring range: 0 ... 10 m/s (0 ... ft/s)

Normally the sensor size is selected so that the nominal flow velocity v lies within the measuring range 1 ... 3 m/s (1 ... 15 ft/s).

Flow velocity calculation formula:

(metric measures)

$$V = \frac{1273.24 \times Q\ [l/s]}{DN^2\ [mm]}\ [m/s] \text{ or } V = \frac{353.68 \times Q\ [m^3/h]}{DN^2\ [mm]}\ [m/s]$$

(imperial measures)

$$V = \frac{0.408 \times Q\ [GPM]}{(\text{Pipe ID})^2\ [inch]}\ [ft/s] \text{ or } V = \frac{283.67 \times Q\ [MGD]}{(\text{Pipe ID})^2\ [inch]}\ [ft/s]$$

8.8 Dimensions and weight

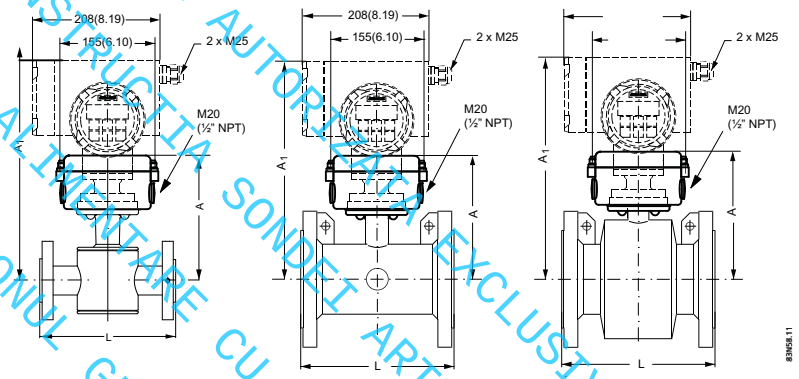


Figure 8-1 MAG 5100 W with MAG 6000 I / MAG 6000 I Ex d

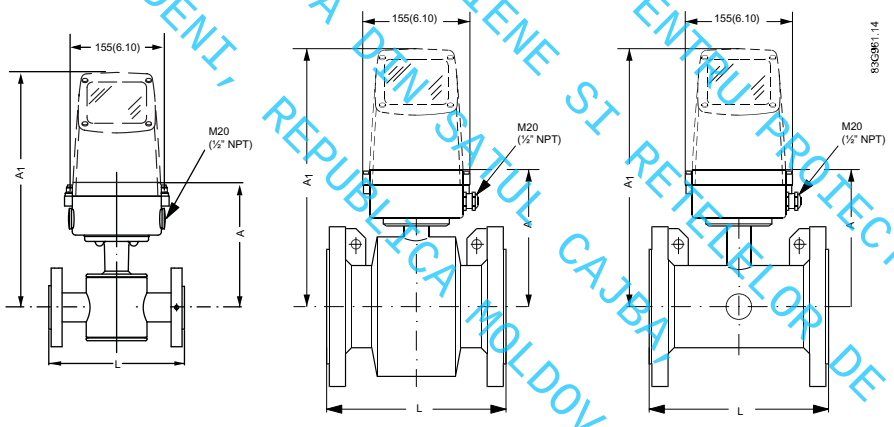


Figure 8-2 MAG 5100 W with MAG 5000 / 6000

Dimensions

Table 8- 10 Nominal size A

Nominal size		**A**			
		Order no. 7ME6520 NBR or EPDM liner		**Order no. 7ME6580 Ebonite liner**	
mm	inch	mm	inch	mm	inch
15	½	177	7	-	-
25	1	187	7.4	187	7.4
40	1½	202	8	197	7.8
50	2	188	7.4	205	8.1
65	2½	194	7.6	212	8.3
80	3	200	7.9	222	8.7
100	4	207	8.1	242	9.5
125	5	217	8.5	255	10.0
150	6	232	9.1	276	10.9
200	8	257	10.1	304	12.0
250	10	284	11.2	332	13.1
300	12	310	12.2	357	14.1
350	14	382	15.0	362	14.3
400	16	407	16.0	387	15.2
450	18	438	17.2	418	16.5
500	20	463	18.2	443	17.4
600	24	514	20.2	494	19.4
700	28	564	22.2	544	21.4
750	30	591	23.3	571	22.5
800	32	616	24.3	606	23.9
900	36	663	26.1	653	25.7
1000	40	714	28.1	704	27.7
1050	42	714	28.1	704	27.7
1100	44	765	30.1	755	29.7
1200	48	820	32.3	810	31.9
1400	54	N/A	N/A	925	36.4
1500	60	N/A	N/A	972	38.2
1600	66	N/A	N/A	1025	40.4
1800	72	N/A	N/A	1123	44.2
2000	78	N/A	N/A	1223	48.1

Table 8- 11 Nominal size L

Nominal size		L											
		PN 10		PN 16		PN 16 non-PED		PN 40		Class 150 AWWA		AS / JIS10K	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
15	½	N/A	N/A	N/A	N/A	N/A	N/A	200	7.9	200	7.9	N/A	N/A
25	1	N/A	N/A	N/A	N/A	N/A	N/A	200	7.9	200	7.9	200	7.9
40	1½	N/A	N/A	N/A	N/A	N/A	N/A	200	7.9	200	7.9	200	7.9
50	2	N/A	N/A	200	7.9	N/A	N/A	N/A	N/A	200	7.9	200	7.9
65	2½	N/A	N/A	200	7.9	N/A	N/A	N/A	N/A	200	7.9	200	7.9
80	3	N/A	N/A	200	7.9	N/A	N/A	N/A	N/A	200	7.9	200	7.9
100	4	N/A	N/A	250	9.8	N/A	N/A	N/A	N/A	250	9.8	250	9.8
125	5	N/A	N/A	250	9.8	N/A	N/A	N/A	N/A	250	9.8	250[1)]	9.8[1)]
150	6	N/A	N/A	300	11.8	N/A	N/A	N/A	N/A	300	11.8	300	11.8
200	8	350	13.8	350	13.8	N/A	N/A	N/A	N/A	350	13.8	350	13.8
250	10	450	17.7	450	17.7	N/A	N/A	N/A	N/A	450	17.7	450	17.7
300	12	500	19.7	500	19.7	N/A	N/A	N/A	N/A	500	19.7	500	19.7
350	14	550	21.7	550	21.7	N/A	N/A	N/A	N/A	550	21.7	550	21.7
400	16	600	23.6	600	23.6	N/A	N/A	N/A	N/A	600	23.6	N/A	23.6
450	18	600	23.6	600	23.6	N/A	N/A	N/A	N/A	600	23.6	600	23.6
500	20	600	23.6	600	23.6	N/A	N/A	N/A	N/A	600	23.6	600	23.6
600	24	600	23.6	600	23.6	N/A	N/A	N/A	N/A	600	23.6	600	23.6
700	28	700	27.6	700	27.6	N/A	N/A	N/A	N/A	700	27.6	700[2)]	27.6[2)]
750	30	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	750	29.5	750[2)]	N/A
800	32	800	31.5	800	31.5	N/A	N/A	N/A	N/A	800	31.5	800[2)]	31.5[2)]
900	36	900	35.4	900	35.4	N/A	N/A	N/A	N/A	900	35.4	900[2)]	35.4[2)]
1000	40	1000	39.4	1000	39.4	N/A	N/A	N/A	N/A	1000	39.4	1000[2)]	39.4[2)]
1050	42	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1000	39.4	N/A	N/A
1100	44	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1100	43.3	N/A	N/A
1200	48	1200	47.2	1200	47.2	N/A	N/A	N/A	N/A	1200	47.2	1200[2)]	47.2[2)]
1400	54	1400	55.1	N/A	N/A	1400	55.1	N/A	N/A	1200	47.2	N/A	N/A
1500	60	1500	59.1	N/A	N/A	1500	59.1	N/A	N/A	1200	47.2	N/A	N/A
1600	66	1600	63.0	N/A	N/A	1600	63.0	N/A	N/A	1200	47.2	N/A	N/A
1800	72	1800	70.9	N/A	N/A	1800	70.9	N/A	N/A	1200	47.2	N/A	N/A
2000	78	2000	78.7	N/A	N/A	2000	78.7	N/A	N/A	1200	47.2	N/A	N/A

1) Not available with AS flange

2) Not available with JIS 10K flange

Weight

Table 8- 12 Weight

Nominal size		Order no. 7ME6520										Order no. 7ME6580	
		PN 10		PN 16		PN 40		Class 150 / AWWA		AS		PN / ANSI / AWWA / AS	
mm	inch	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs	kg	lbs
15	½	N/A	N/A	N/A	N/A	4	9	4	9	N/A	N/A	-	-
25	1	N/A	N/A	N/A	N/A	6	12	5	11	N/A	N/A	5	11
40	1½	N/A	N/A	N/A	N/A	8	18	7	15	N/A	N/A	8	17
50	2	N/A	N/A	9	20	N/A	N/A	8	20	N/A	N/A	9	20
65	2½	N/A	N/A	10.7	24	N/A	N/A	11	24	N/A	N/A	11	24
80	3	N/A	N/A	11.6	26	N/A	N/A	13	28	N/A	N/A	12	24
100	4	N/A	N/A	15.2	33	N/A	N/A	19	41	N/A	N/A	16	35
125	5	N/A	N/A	20.4	45	N/A	N/A	24	52	N/A	N/A	19	42
150	6	N/A	N/A	26	57	N/A	N/A	29	64	N/A	N/A	27	60
200	8	48	106	48	106	N/A	N/A	56	124	N/A	N/A	40	68
250	10	64	141	69	152	N/A	N/A	79	174	N/A	N/A	60	132
300	12	76	167	86	189	N/A	N/A	110	243	N/A	N/A	80	176
350	14	104	229	125	274	N/A	N/A	139	307	N/A	N/A	110	242
400	16	119	263	143	314	N/A	N/A	159	351	N/A	N/A	125	275
450	18	136	299	173	381	N/A	N/A	182	400	N/A	N/A	175	385
500	20	163	359	223	491	N/A	N/A	225	495	N/A	N/A	200	440
600	24	236	519	338	744	N/A	N/A	320	704	N/A	N/A	187	633
700	28	270	595	314	692	N/A	N/A	273	602	320	70	330	728
750	30	N/A	N/A	N/A	N/A	N/A	N/A	329	725	N/A	N/A	360	794
800	32	346	763	396	873	N/A	N/A	365	804	428	944	450	992
900	36	432	951	474	1043	N/A	N/A	495	1089	618	1362	53	1168
1000	40	513	1130	600	1321	N/A	N/A	583	1282	636	1399	66	1455
1050	42	N/A	N/A	N/A	N/A	N/A	N/A	687	1512	N/A	N/A	N/A	N/A
1100	44	N/A	N/A	N/A	N/A	N/A	N/A	763	1680	N/A	N/A	1140	2513
1200	48	643	1415	885	1948	N/A	N/A	861	1896	813	1789	1180	2601
1400	54	1592	3510	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1600	3528
1500	60	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2460	5423
1600	66	2110	4652	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2525	5566
1800	72	2560	5644	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2930	6460
2000	78	3640	8025	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3665	8080

Appendix

A

A.1 Flange mating dimensions (metric)

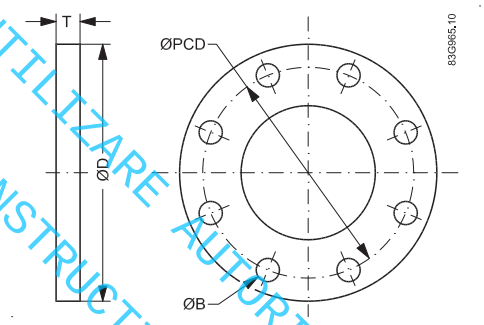


Figure A-1 Flange mating dimensions

Table A- 1 Flange mating dimensions (metric)

	Dimensions (mm)				Bolting	
mm	D	PCD	T	B	Holes	Bolts
PN10						
200	340	295	24	22	8	M20
250	395	350	26	22	12	M20
300	445	400	26	22	12	M20
350	505	460	28	22	16	M20
400	565	515	32	26	16	M24
450	615	565	36	26	20	M24
500	670	620	38	26	20	M24
600	780	725	42	3	20	M27
700	895	840	30	30	24	M27
800	1015	950	32	33	24	M30
900	1115	1050	34	33	28	M30
1000	1230	1160	34	36	28	M33
1200	1455	1380	38	39	32	M36
PN16						
50	165	125	19	18	4	M16
65	185	145	20	18	8	M16
80	200	160	20	18	8	M16
100	220	180	22	18	8	M16
125	250	210	22	18	8	M16
150	285	240	24	22	8	M20
200	340	295	26	22	12	M20
250	405	355	29	26	12	M24

	Dimensions (mm)				Bolting	
mm	**D**	**PCD**	**T**	**B**	**Holes**	**Bolts**
300	460	410	32	26	12	M24
350	520	470	35	26	16	M24
400	580	525	38	30	16	M27
450	640	585	42	30	20	M27
500	715	650	46	33	20	M30
600	840	770	52	36	20	M33
700	910	840	36	36	24	M33
800	1025	950	38	39	24	M36
900	1125	1050	40	39	28	M36
1000	1255	1170	42	42	28	M39
1200	1485	1390	48	48	32	M45
PN40						
15	95	65	14	14	4	M12
25	115	85	16	14	4	M16
40	150	110	18	18	4	M16
150 lb						
15	89	60	12	16	4	M12
25	108	79	16	16	4	M16
40	127	98	18	16	4	M16
50	152	121	19	19	4	M16
65	178	140	22	19	4	M16
80	190	152	24	19	4	M16
100	229	191	24	19	8	M16
125	254	216	24	22	8	M20
150	279	241	25	22	8	M20
200	343	298	29	22	8	M20
250	406	362	30	25	12	M24
300	483	432	32	25	12	M24
350	533	476	35	28	12	M27
400	597	540	36.5	28	16	M27
450	635	578	40	32	16	M30
500	699	635	43	32	20	M30
600	813	749	48	35	20	M33

	Dimensions (mm)				Bolting	
mm	**D**	**PCD**	**T**	**B**	**Holes**	**Bolts**
AWWA						
700	927	864	33	35	28	M33
750	984	914	35	35	28	M33
800	1060	978	38	41	28	M39
900	1168	1068	41	41	32	M39
1000	1289	1200	41	41	36	M39
1050	1346	1257	44	41	36	M39
1200	1511	1422	48	41	44	M39

A.2 Factory settings

Dimension-dependent factory settings

Table A- 2 50 Hz version

DN			Qmax				Unit	Volume/ pulse	Pulse unit	Totalizer unit
			Order no. 7ME6520		Order no. 7ME6580					
mm	Inch	Fac settings	Min.	Max.	Min.	Max.				
15	½	**2000**	159	6361	-	-	l/h	1	l	l
25	1	**5000**	441	17671	441	17671	l/h	10	l	l
40	1½	**12**	1.1	45	1.1	45	m³/h	10	l	l
50	2	**20**	1.7	63	1.7	70	m³/h	10	l	l
65	2½	**30**	2.9	100	2.9	119	m³/h	100	l	l
80	3	**50**	4.0	160	4.5	180	m³/h	100	l	l
100	4	**120**	6.2	250	7	282	m³/h	100	l	l
125	5	**180**	10.0	400	11	441	m³/h	100	l	m³
150	6	**250**	15.7	629	15.9	636	m³/h	100	l	m³
200	8	**400**	24.9	997	28.2	1130	m³/h	1	m³	m³
250	10	**700**	40.0	1600	44.1	1767	m³/h	1	m³	m³
300	12	**1000**	62.5	2500	63.6	2544	m³/h	1	m³	m³
350	14	**1200**	86.5	3463	86.5	3463	m³/h	1	m³	m³
400	16	**1800**	113	4523	113	4523	m³/h	1	m³	m³
450	18	**2000**	143.1	5725	143.1	5725	m³/h	1	m³	m³
500	20	**3000**	176.7	7068	176.7	7068	m³/h	1	m³	m³
600	24	**4000**	254.4	10178	254.4	10178	m³/h	10	m³	m³
700	28	**5000**	346.3	13854	346.3	13854	m³/h	10	m³	m³
750	30	**6000**	397.6	15904	397.6	15904	m³/h	10	m³	m³
800	32	**7000**	452.3	18095	452.3	18095	m³/h	10	m³	m³

DN			Qmax				Unit	Volume/ pulse	Pulse unit	Totalizer unit
			Order no. 7ME6520		Order no. 7ME6580					
900	36	**9000**	572.5	22902	572.5	22902	m^3/h	10	m^3	m^3
1000	40	**12000**	706.8	28274	706.8	28274	m^3/h	10	m^3	m^3
1050	42	**12000**	706.8	28274	706.8	28274	m^3/h	10	m^3	m^3
1100	44	**14000**	855.2	34211	855.2	34211	m^3/h	10	m^3	m^3
1200	48	**15000**	1017.8	40715	1017.8	40715	m^3/h	10	m^3	m^3
1400	54	**25000**	-	-	1385.4	55417	m^3/h	10	m^3	m^3
1500	60	**30000**	-	-	1590.4	63617	m^3/h	10	m^3	m^3
1600	66	**35000**	-	-	1809.5	72382	m^3/h	10	m^3	m^3
1800	72	**40000**	-	-	2290.2	91608	m^3/h	10	m^3	m^3
2000	78	**45000**	-	-	2827.4	113097	m^3/h	10	m^3	m^3

Table A- 3 60 Hz version

DN			Qmax				Unit	Volume/ pulse	Pulse unit	Totalizer unit
			Order no. 7ME6520		Order no. 7ME6580					
mm	Inch	**Fac. settings**	Min.	Max.	Min.	Max.				
15	½	9	0.7	28	-	-	US GPM	1	US G	US G
25	1	**22**	1.9	77.8	1.9	77.8	US GPM	1	US G	US G
40	1½	**52**	4.9	199.1	4.9	199.1	US GPM	1	US G	US G
50	2	**88**	6.9	277.2	7.7	311.2	US GPM	1	US G	US G
65	2½	**132**	11.0	440.2	13.1	525.9	US GPM	1	US G	US G
80	3	**220**	17.6	705.1	19.9	796.7	US GPM	1	US G	US MG
100	4	**528**	27.5	1101	31.1	1244.8	US GPM	1	US G	US MG
125	5	**793**	44.0	1762.2	48.6	1945.1	US GPM	1	US G	US MG
150	6	**1101**	69.3	2772.9	70	2800.9	US GPM	1	US G	US MG
200	8	**1761**	109.7	4391.9	124.4	4979.5	US GPM	1	US G	US MG
250	10	**3082**	176.1	7045.2	194.5	7780.5	US GPM	1	US G	US MG
300	12	**4402**	275.1	11007.8	280	11203.9	US GPM	1	US G	US MG
350	14	**5283**	381.2	15249.7	381.2	15249.7	US GPM	1	US G	US MG
400	16	**7925**	497.9	19918.1	497.9	19918.1	US GPM	1	US G	US MG
450	18	**8806**	630.2	25208.8	630.2	25208.8	US GPM	1	US G	US MG
500	20	**13209**	778	31122	778	31122	US GPM	1	US G	US MG
600	24	**17611**	1120.3	44815.7	1120.3	44815.7	US GPM	10	US G	US MG
700	28	**19812**	1524.9	60999.1	1524.9	60999.1	US GPM	10	US G	US MG
750	30	**22014**	1750.6	70024.5	1750.6	70024.5	US GPM	10	US G	US MG
800	32	**30820**	1991.8	79672.4	1991.8	79672.4	US GPM	10	US G	US MG
900	36	**39626**	2522.8	100835.3	2522.8	100835.3	US GPM	10	US G	US MG
1000	40	**52834**	3112.2	124488.1	3112.2	124488.1	US GPM	10	US G	US MG
1050	42	**52834**	3431.2	137248.1	3431.2	137248.1	US GPM	10	US G	US MG
1100	44	**61640**	3765.7	150630.6	3765.7	150630.6	US GPM	10	US G	US MG

DN			Qmax				Unit	Volume/ pulse	Pulse unit	Totalizer unit
			Order no. 7ME6520		Order no. 7ME6580					
1200	48	**66043**	4481	179262.9	4481	179262.9	US GPM	10	US G	US MG
1400	54	**110072**	-	-	6099.9	243993.7	US GPM	1000	US G	US MG
1500	60	**132086**	-	-	7002.4	280098.3	US GPM	1000	US G	US MG
1600	66	**154100**	-	-	7967.2	318689.6	US GPM	1000	US G	US MG
1800	72	**176115**	-	-	10083.5	403341.5	US GPM	1000	US G	US MG
2000	78	**198129**	-	-	12448.8	497952.5	US GPM	1000	US G	US MG

A.3 Coil resistance

Table A- 4 Coil resistance

		MAG 1100, MAG 1100F		MAG 3100, MAG 3100P, MAG 5100 W (Order no. 7ME6580)		MAG 5100 W (Order no. 7ME6520)	
DN	Inch	Resistance	Tolerance	Resistance	Tolerance	Resistance	Tolerance
2	1/12	104 Ω	+/− 5	104			
3	1/8	104 Ω	+/− 5	104			
6	1/4	99 Ω	+/− 17	104			
10	3/8	99 Ω	+/− 17	104			
15[1)]	1/2	91 Ω	+/− 9	104			
25	1	91 Ω	+/− 17	104	+/− 2	104	+/− 10
40	11/2	91 Ω	+/− 9	92	+/− 2	92	+/− 10
50	2	91 Ω	+/− 9	92	+/− 2	119.4	+/− 10
65	21/2	99 Ω	+/− 17	100	+/− 2	127	+/− 10
80	3	91 Ω	+/− 17	94	+/− 2	126	+/− 10
100	4	91 Ω	+/− 9	92	+/− 2	125	+/− 10
125	5	92	+/− 2	126	+/− 10		
150	6	94	+/− 2	116	+/− 10		
200	8	90	+/− 2	109	+/− 10		
250	10	92	+/− 2	104	+/− 10		
300	12	100	+/− 2	108	+/− 10		
350	14	112	+/− 2	100	+/− 6		
400	16	100	+/− 4	100	+/− 6		
450	18	108	+/− 4	100	+/− 6		
500	20	122	+/− 4	100	+/− 6		
600	24	115	+/− 4	98	+/− 6		
700	28	128	+/− 4	98	+/− 6		
750	30	133					
800	32	128	+/− 4	98	+/− 6		
900	36	131	+/− 4	98	+/− 6		

		MAG 1100, MAG 1100F		MAG 3100, MAG 3100P, MAG 5100 W (Order no. 7ME6580)		MAG 5100 W (Order no. 7ME6520)	
1000	40	131	+/− 4	88	+/− 6		
1100	44	126					
1200	48	130	+/− 4	88	+/− 6		
1400	54	130					
1500	60	124					
1600	66	133					
1800	72	133					
2000	78	147					

[1] On MAG 1100 DN 15 produced as from May 1999 the coil resistance must be 86 ohm, +8/−4 ohm.

NOTICE

Reference values

- All resistance values are at 20 °C
- The resistance changes proportionally 0.4% / °C

Spare parts

Description	
Cable glands, 2 pcs. M20 ½" NPT	
Sealing screws for sensor/transmitter, 2 pcs.	
Terminal box, in polyamide, inclusive of lid M20 ½" NPT	

Description	
Terminal box lid, in polyamide	
Terminal box, in stainless steel, inclusive of lid M20 ½" NPT	
Potting kit for terminal box of MAG sensors for I P68/NEMA 6P (not for EX)	 

A.4 Ordering

In order to ensure that the ordering data you are using is not outdated, the latest ordering data is always available on the Internet: Catalog process instrumentation (http://www.siemens.com/processinstrumentation/catalogs)

Glossary

ASIC

Application-Specific Integrated Circuit is an integrated circuit (IC) customized for a particular use, rather than intended for general-purpose use.

EMC

Electromagnetic compatibility (EMC) is the branch of electrical sciences which studies the unintentional generation, propagation and reception of electromagnetic energy with reference to the unwanted effects (Electromagnetic Interference, or EMI) that such energy may induce. The goal of EMC is the correct operation, in the same electromagnetic environment, of different equipment which use electromagnetic phenomena, and the avoidance of any interference effects.

IP

An IP (Ingress Protection) number is used to specify the environmental protection of enclosures around electronic equipment. These ratings are determined by specific tests. The IP number is composed of two numbers, the first referring to the protection against solid objects and the second against liquids. The higher the number, the better the protection. For example, in IP67 the first Number (6) means that the device is totally protected against dust, and the second (7) that it is protected against the effect of immersion between 15cm and 1m

PED

The Pressure Equipment Directive (97/23/EC) is the legislative framework on European level for equipment subject to a pressure hazard. It was adopted by the European Parliament and the European Council in May 1997 and has been obligatory throughout the European Union since May 2002.

SENSORPROM

All sensor related settings/data saved on an EPROM. SENSORPROM technology automatically configures the transmitter at start up providing calibration data, pipe size, sensor type, and output settings. The SENSORPROM automatically stores values or settings changed by users, and automatically re-programs any new transmitter without loss of accuracy.

USM

USM II is a Communication Platform. The Siemens USM II concept enables fitting of add-on bus modules without loss of functionality:

1. All modules can be fitted as true "plug & play"
2. Module and transmitter are automatically configured through the SENSORPROM

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UTILIZARE AUTORIZATA EXCLUSIV PENTRU PROIECTUL:
"CONSTRUCTIA SONDEI ARTEZIENE SI RETELELOR DE
ALIMENTARE CU APA DIN SATUL CAJBA,
RAIONUL GLODENI, REPUBLICA MOLDOVA"

For more information

www.siemens.com/flow

Siemens A/S
Flow Instruments
DK-6430 Nordborg
Denmark

Subject to change without prior notice
Order No.: A5E03063678
Literature No.: A5E03063678-02

www.siemens.com/processautomation

A5E03063678

PRODUCT CONFORMITY CERTIFICATE

This is to certify that the

SITRANS F M MAGFLO MAG 5100W Electromagnetic Flowmeter with MAG 5000, MAG 6000 or MAG 6000 Industry Transmitter

manufactured by:

Siemens Flow Instruments Ltd

Magflow House
Ebley Road
Stonehouse
Glos.
GL10 2LU

Nordborgvej 81
6430 Nordborg
Denmark

has been assessed by Sira Certification Service
and for the conditions stated on this certificate complies with:

MCERTS Performance Standards for Water Monitoring Equipment Part 3, Version 2.1, dated March 2008

Size range: DN 25-1200

Project No.	:	674/0190
Certificate No	:	Sira MC080136/03
Initial Certification	:	4 November 2008
This Certificate issued	:	7 February 2014
Renewal Date	:	3 November 2018

R Cooper I Eng MInst MC
Technical Director

MCERTS is operated on behalf of the Environment Agency by

Sira Certification Service
12 Acorn Industrial Park, Crayford Road, Crayford
Dartford, Kent, UK DA1 4AL
Tel: +44 (0)1322 520500 Fax: +44 (0)1322 520501

Approved Site Application

The product may be used on all MCERTS applications including abstraction, effluent discharge,
ultraviolet disinfection and industrial processing.

Any potential user should ensure, in consultation with the manufacturer, that the product is suitable for the process on which it will be installed.

Field test Site

A three month field test was conducted on the final effluent discharge at a municipal waste water treatment plant.

Basis of Certification

This certification is based on the following Test Report(s) and on Sira's assessment and ongoing surveillance of the product and the manufacturing process:

Sira Evaluation Report MAG 5100 674/0190 dated 04 November 2008

Product Certified

The measuring system consists of the following parts:

SITRANS F M MAGFLO MAG 5100W Electromagnetic Flowmeter with MAG 5000, MAG 6000 or MAG 6000 Industry Transmitter

This certificate applies to all instruments fitted with software version:
3.03 X 03 for standard MAG 5000
3.03 X 04 for MAG 5000 C with HART
3.03 X 05 for MAG 5000 CT
3.03 for standard MAG 600
3.03 X 02 for MAG 6000 CT
3.03 X 01 for MAG 6000 SV
3.04 for MAG 6000 Industry

Serial number (MLFB code) 7ME6520-XXX1X-2XXX-Z [Where X = any figure] onwards

DN (mm)	Flow Rate		unit
	Min	Max	
25	442.0	17671	l/h
40	1.2	45	m^3/h
50	1.6	63	m^3/h
65	2.5	100	m^3/h
80	4.0	160	m^3/h
100	6.3	250	m^3/h
125	10.0	400	m^3/h
150	15.7	629	m^3/h
200	24.9	997	m^3/h
250	40.0	1600	m^3/h
300	62.5	2500	m^3/h
350	86.6	3463	m^3/h
400	113.1	4523	m^3/h
450	143.2	5725	m^3/h
500	176.8	7068	m^3/h
600	254.5	10178	m^3/h
700	346.4	13854	m^3/h
750	397.7	15904	m^3/h
800	452.4	18095	m^3/h
900	573.0	22902	m^3/h
100	707.0	28274	m^3/h
1100	855.3	34211	m^3/h
1200	1018.0	40715	m^3/h

Certified Performance

The instrument was evaluated for use under the following conditions:
Ambient Temperature Range: -20ºC to +50ºC

The instrument meets MCERTS Class 1 requirements for the combined performance characteristic as specified in Table 6 of the MCERTS performance standard. Details of individual performance characteristics are summarised below:

Results are expressed as error % of certification range, unless otherwise stated

Test	Results expressed as error % of reading				Other results	MCERTS specification
	<0.5	<1.0	<1.5	<2.0		
Protection against unauthorised access	Access to change mode is password protected					Clause 3.1.2
Indicating device	The flowmeter incorporates an indicating device, analogue and digital output signal					Clause 3.1.3
Units of measurement	Various units of measurement are available.					Clause 3.1.6
Bi-directional flow	The sign (-) will stand in front of the flow reading when the reading is negative.					Clause 3.1.8
Combined performance characteristic		0.806				2% Class 1 Table 6
Mean error	0.15					Clause 6.3.2 ±1.5% Class 1
Repeatability	0.07					Clause 6.3.2 1% Class 1
Supply voltage	0.05					Clause 6.3.3 0.5% Class 1
Output impedance	0.15					Clause 6.3.4 0.5% Class 1
Fluid Temperature	0.13					Clause 6.3.5 0.5% Class 1
Ambient air temperature	0.60					Clause 6.3.6 0.5% Class 1
Relative humidity	0.04					Clause 6.3.6 0.5% Class 1
Stray currents	0.23					Clause 6.3.9 0.5% Class 1
Bi-directional flow Mean error Repeatability	 0.18 0.038					Mean error ±1.5% Class 1 Repeatability 1% Class 1

Certificate No: Sira M080136/03
This Certificate Issued: 7 February 2014

Test	Results expressed as error % of reading				Other results	MCERTS specification
	<0.5	<1.0	<1.5	<2.0		
Loss of Power for electronic flowmeters	No changes in pre set data					Clause 6.3.1 to be reported
Response time					See Note 1	Clause 6.3.19 30 seconds

Field Test Results

The field test was conducted on two MAG 5100 sensors with MAG 6000 transmitters in series and is deemed equivalent by the certification committee for the models stated on this certificate

Test	Results expressed as error % of reading				Other results	MCERTS specification
	<0.5	<1.0	<1.5	<2.0		
Error under field test conditions	Error range 0.29% to 0.61% Field test error is <2% for 100% of readings					Clause 7.3 2% Class 1 5% Class 2
Up time					100%	Clause 7.4 >95%
Maintenance					none	Clause 7.5 to be reported

Note 1: This test has not been conducted.

Note 2: The following tests are not applicable to the flowmeter:

6.3.7	Incident light	6.3.16	Effect of conduit material
6.3.8	Sensor location	6.3.17	Effect of conduit size
6.3.10	Sonic velocity compensation & response	6.3.18	Fill level
6.3.11	Accuracy of computation	6.3.20	Vibration
6.3.12	User defined stage-discharge equation		

Description

Sitrans FM electromagnetic flow meters included in this certificate consist of a sensor type MAG 5100 W, in sizes from DN25 to DN1200; and a transmitter, type MAG 5000, MAG 6000 or MAG 6000 Industry. The plug-in transmitters can be integral to the sensor or remote mounted. MAG 5100W sensors are designed specifically to meet water and waste water applications. IP68 versions can be buried or submerged.

The measuring principle is based on Faraday's law of electromagnetic induction. An electrode voltage, proportional to velocity, is generated when a conductive liquid passes through the sensor's magnetic field.

Calibration data, sensor fingerprint, factory and customer settings are stored in a SENSORPROM module, separate from the transmitter. Transmitters can, therefore, be freely exchanged. This technology is proven in use; fitted in Sitrans FM meters for more than 10 years.

Transmitters use low noise high resolution digital signal processors which provide continuous self-monitoring and adjustment of measurement circuits to maintain required accuracy. Plug-in modules for digital communications, e.g. Profibus, can be added at any time during the life of the meter. Transmitter dynamic range is better than 3000:1. Very high input impedance means measurement accuracy is unaffected by liquid conductivity or cable length.

On site verification is achieved using the Siemens Magflo Verificator; a stand alone field test device, independently calibrated every 12 months. It performs three tests, all referenced to original calibration: Transmitter accuracy, Insulation of measurement circuits, and Sensor magnetism (fingerprint).

Approvals include the new EU directive for cold water custody transfer, MI 001, WRAS for potable water, and OIML R49 pattern approval. Every Siemens flow meter is calibrated at facilities that are individually accredited in accordance with ISO / IEC 17025 by UKAS, DANAK and traceable to NIST.

General Notes

1. This certificate is based upon the equipment tested. The Manufacturer is responsible for ensuring that on-going production complies with the standard(s) and performance criteria defined in this Certificate. The Manufacturer is required to maintain an approved quality management system controlling the manufacture of the certified product. Both the product and the quality management system shall be subject to regular surveillance according to 'Regulations Applicable to the Holders of Sira Certificates'. The design of the product certified is defined in the Sira Design Schedule for certificate No. Sira MC 080136/02

2. If certified product is found not to comply, Sira Certification Service should be notified immediately at the address shown on this certificate.

3. The Certification Marks that can be applied to the product or used in publicity material are defined in 'Regulations Applicable to the Holders of Sira Certificates'.

4. This document remains the property of Sira and shall be returned when requested by the company.

Debitmetru electromagnetic MAG5100W

Descriere generala

SITRANS FM MAG 5100 W este un debitmetru electromagnetic construit special pentru aplicatii pe apa : potabila, reziduala, uzata, precum si pe aplicatii unde intervine namolul.

Beneficii:

- Diametre : DN 15 - DN1200/2000.
- Conexiune cu flansa conform EN 1092-1 (DIN 2501), ANSI, AWWA,AS si JIS;
- Liner din cauciuc dur NBR si ebonita pentru toate aplicatiile pe apa ;
- Liner din EPDM pentru aplicatii cu apa potabila ;
- Electrozi de masura si impamantare integrati realizati din hastelloy ;
- Precizie crescuta la debit scazut, datorita design-ului (DN 15 - DN300 mm);
- Aprobari pentru apa potabila ;
- Poate fi ingropat sau inundat ;
- Aprobare pentru tranzactii fiscale ;
- Constructie in conformitate cu ISO 13359 ; standardul incluzand diametre pana la DN400 ;
- Punere in functiune facila, valorile de calibrare si setarile fiind incarcate automat in SENSORPROM ;
- Proiectat astfel incat sa se efectueze verificarea in-situ, utilizandu-se amprenta SENSORPROM-ului ;
- Optiunea Custody Transfer pentru tranzactii fiscale, conform OIML R 49 si verificata conform MI-001
- Indeplineste directivele EEC: PED, directiva 97/23/EC pentru flanse EN1092-1
- Upgrade simplu in fabrica sau la locul de functionare a unui senzor standard la IP68/NEMA 6P.

Aplicatii

Principalele aplicatii ale senzorilor MAG5100W sunt :

- Captarea apei;
- Tratarea apei
- Retele de distributie a apei (managementul detectiei scurgerilor) ;
- Masurari pentru tranzactii fiscale;
- Irigatii ;
- Tratarea apelor uzate;
- Instalatia de filtrare a apei (de ex. osmoza inversa si ultrafiltrare) ;
- Aplicatii de apa industriala.

Modul de operare

Principiul de masurare al debitului este bazat pe legea inductiei electromagnetice a lui Faraday conform careia senzorul converteste debitul intr-o tensiune electrica proportionala cu viteza acestuia.

Integrarea

Debitmetrul este alcatuit dintr-un senzor de debit si un transmiter SITRANS F M MAG 5000, MAG 6000 sau MAG 6000 I.
Conceptul de comunicatie flexibila USM II simplifica integrarea si updatarea la o gama larga de sisteme, de exemplu, HART, DeviceNet, PROFIBUS DP si PA, FOUNDATION Fieldbus H1, Modbus RTU/RS 485.

Specificatii tehnice

Caracteristici produs	MAG 5100 W (7ME6520)
Liner	EPDM sau NBR – in principal pentru piata europeana Ebonita – in principal pentru piete non-europene
Dimensiunea nominala si design-ul	Senzor conic (DN15...300) Senzor integral (DN350...1200)
Principiu de masurare Frecventa de excitatie (reteaua de alimentare - 50/60 Hz)	Inductie electromagnetica DN 15 ... 65 (½" ... 2½"): 12.5 Hz/15 Hz DN 80 ... 150 (3" ... 6"): 6.25 Hz/7.5 Hz DN 200 ... 300 (8" ... 12"): 3.125 Hz/3.75 Hz DN 350...1200 (14"...48"): 1.5625 Hz/1.875 Hz
Conectarea la proces Cu flansa EN 1092-1 ANSI B16.5 AWWA C-207 AS4087	 PN 10 (145 psi) : DN 200 ... 300 (8" ... 12") Flansa neteda PN 10 (145 psi): DN 350 ... 1200 (14" ... 48") Flansa cu umar PN 16 (232 psi): DN 50 ... 300 (2" ... 12") Flansa neteda PN 16 (232 psi): DN 350 ... 1200 (14" ... 48") Flansa cu umar PN 40 (580 psi): DN 15 ... 40 (½" ... 1½") Flansa neteda Class 150: ½" ... 12" fata neteda; 14" ... 24" raised face Class D: 28" ... 48", fata neteda PN 16 (DN 50 ... 1200), (2" ... 48") 16 bar (232 psi)
Conditii de functionare Temperatura ambientala Senzor Cu transmiter MAG 5000/6000 montaj compact Presiune de lucru (Abs) [abs. bar] (scade odata cu cresterea temperaturii de lucru)	 -40 ... +70 °C -20 ... +60 °C DN 15 ... 40 (½" ... 1½") : 0.01 ... 40 bar DN 50 ... 300 (2" ... 12") :0.03 ... 20 bar DN 350 ... 1200 (14" ... 48") : 0.01 ... 16 bar
Grad protectie Standard Optional	 IP67 to EN 60529/NEMA 4X/6 (1 mH2O pentru 30 min) IP68 to EN 60529/NEMA 6P (10 mH2O continuu)
Caderea de presiune	DN 15 and 25 (½" and 1") : Max. 20 mbar la 1 m/s.

	DN 40 ... 300 (1½" ... 12"): Max 25 mbar la 3 m/s DN 350 ... 1200 (14" ... 48"): nesemnificativ
Presiune de test	1.5 x PN (acolo unde este cazul) FM Fire Service: 2 x PN
Sarcina mecanica (vibratii)	18 ... 1000 Hz aleator in orice directive x,y,z, timp de 2 ore conform EN 60068-2-36 Senzor: 3,17 grms Senzor cu transmiter MAG 5000/6000 montaj compact : 3.17 grms Senzor cu transmiter Mag 6000 I montaj compact : 1.14 grms
Conditii mediu Temperatura mediu masura NBR EPDM EPDM/NBR (MI-001)	 -10 ... +70 °C -10 ... +70 °C 0.1 ... 30 °C
EMC	2004/108/EC
Design Material Carcasa si flanse Teava de masura Electrod Electrod impamantare Cutia de borne	 Otel carbon, acoperit anticoroziune cu vopsea epoxidica (min. 150 µm) Categoria coroziva C4, conform ISO 12944-2 Inox AISI 304/1.4301 Hastelloy C Hastelloy C Fibra de sticla armata cu poliamida
Certificari si autorizatii Calibrare Calibrare standard Tranzactii fiscale (doar impreuna cu MAG 6000 CT) Aprobari pentru apa potabila	 punctul de zero, 2 x 25 % si 2 x 90 % aprobare OIML R 49 pentru apa rece : DN 50 ... 300 (2" ... 12") Apa rece MI-001 (EU): DN 50 ... 300 (2" ... 12") PTB K7.2: Masurarea apei reci DN 50-300 (comanda speciala) Liner EPDM WRAS (WRc, BS6920 apa rece, GB) ACS (F), DVGW W270 (D) Belgaqua (B)
Alte aprobari	MCERTS Conform PED: toate flansele EN1092-1 clasa ANSI 150 (< DN 300 (<12")) – 97/23/EC4) CRN (DN 50 - DN 1200 (2" ... 48")) CSA Clasa I, Div 2

MAG 5100 W (7ME6520) cu MAG 6000 CT MI-001

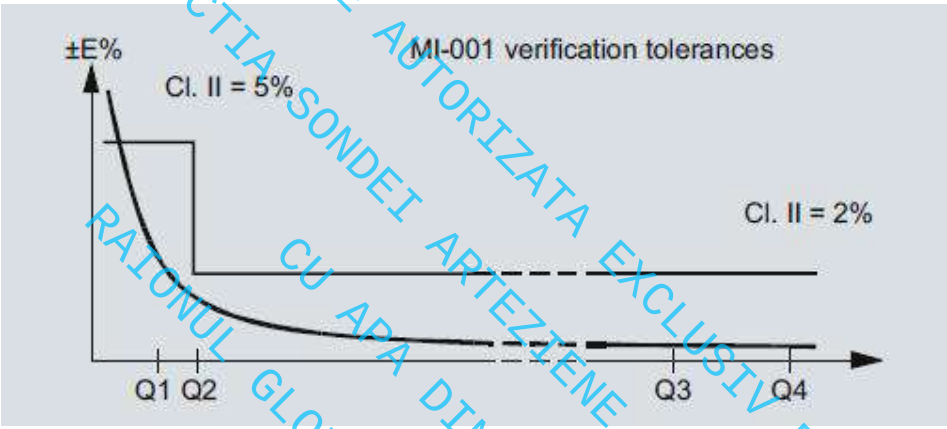
Programul MAG 5100 W CT este aprobat conform standardului de masurare a apei reci OIML R 49. Incepand cu 01.11.2006 directiva de masurare a apei este aprobata, ceea ce inseamna ca toate echipamentele de masurare a apei pot fi vandute in UE daca au eticheta MI-001.

Produsele MAG 5100 W MI-001 cu diametrele DN50...300 verificate si etichetate au aprobare Clasa II conform directivei 2004/22.EC al Parlamentului European si a Consiliului European din 31.03.2004 al referitoare la instrumentele de masurare (MID), Anexa MI-001

Certificarea MID este obtinuta ca un modul de aprobare B+D conform directivei mentionate mai sus.

Modulul B: Omologare de tip conform OIML R 49

Module : Aprobare pentru asigurarea calitatii pentru productie.



Produse MAG5100W MI-001 verificate si etichetatela un Q3 dat si Q3/Q4=1.25 si Q2/Q1=1.6

Order code: P11	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
„R" Q3/Q1	25	25	25	25	25	25	25	25	25
Q4 [m³/h]	20	31.25	50	78.75	125	200	312.5	500	787.5
Q3 [m³/h]	**16**	**25**	**40**	**63**	**100**	**160**	**250**	**400**	**630**
Q2 [m³/h]	1.02	1.6	2.6	4.03	6.4	10.24	16	25.6	40.32
Q1 [m³/h]	0.64	1.00	1.60	2.52	4.0	6.4	10.0	16.0	25.2

Order code: P12	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
„R" Q3/Q1	63	63	63	63	63	63	63	63	63
Q4 [m³/h]	20	31.25	50	78.75	125	200	312.5	500	787.5
Q3 [m³/h]	**16**	**25**	**40**	**63**	**100**	**160**	**250**	**400**	**630**
Q2 [m³/h]	0.41	0.63	1.02	1.6	2.54	4.06	6.35	10.2	16.0
Q1 [m³/h]	0.25	0.40	0.63	1.00	1.59	2.54	3.97	6.35	10.0

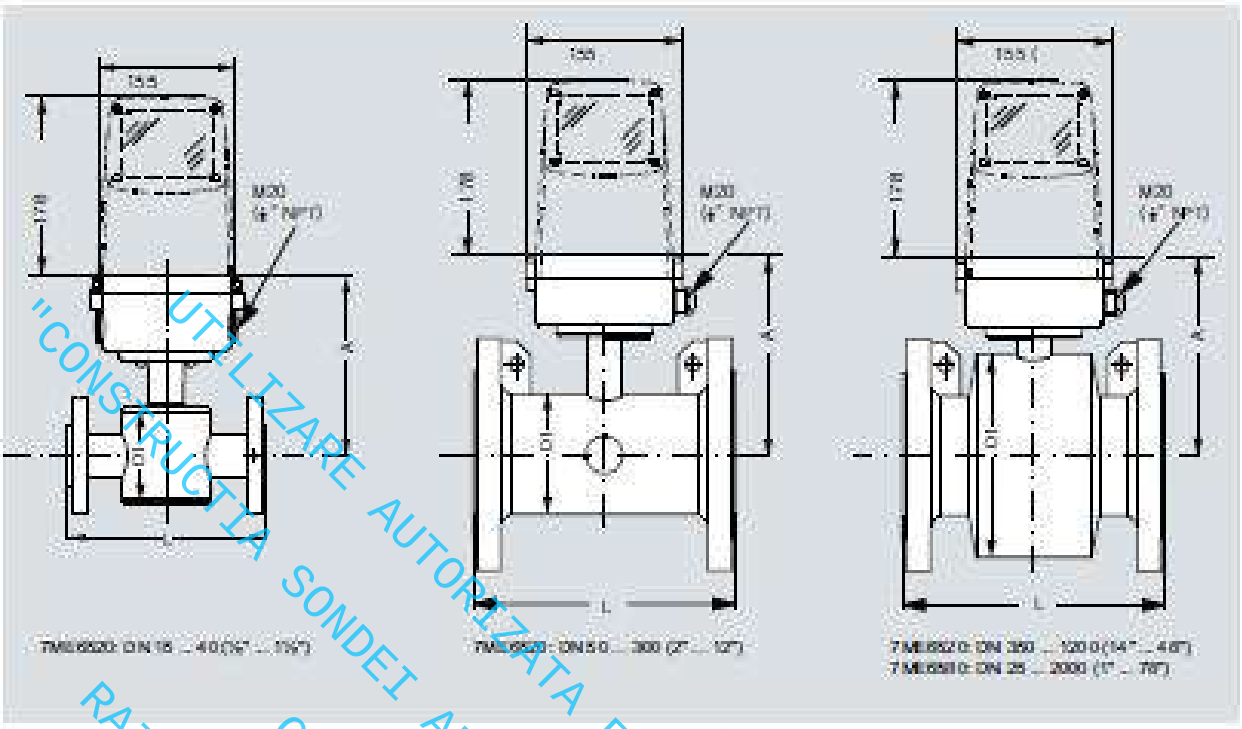
Order code: P13	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
„R" Q3/Q1	80	80	80	80	80	80	80	80	80
Q4 [m³/h]	20	31.25	50	78.75	125	200	312.5	500	787.5
Q3 [m³/h]	**16**	**25**	**40**	**63**	**100**	**160**	**250**	**400**	**630**
Q2 [m³/h]	0.32	0.50	0.80	1.20	2.00	3.20	5.0	8.0	12.6
Q1 [m³/h]	0.20	0.31	0.50	0.75	1.25	2.00	3.13	5.0	7.90

Order code: P15	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
„R" Q3/Q1	160	160	160	160	160	160	160	160	160
Q4 [m³/h]	50	78.75	125	200	312.5	500	787.5	1250	2000
Q3 [m³/h]	**40**	**63**	**100**	**160**	**250**	**400**	**630**	**1000**	**1600**
Q2 [m³/h]	0.40	0.63	1.00	1.60	2.50	4.00	6.3	10.0	16.0
Q1 [m³/h]	0.25	0.39	0.63	1.00	1.56	2.50	3.94	6.3	10.0

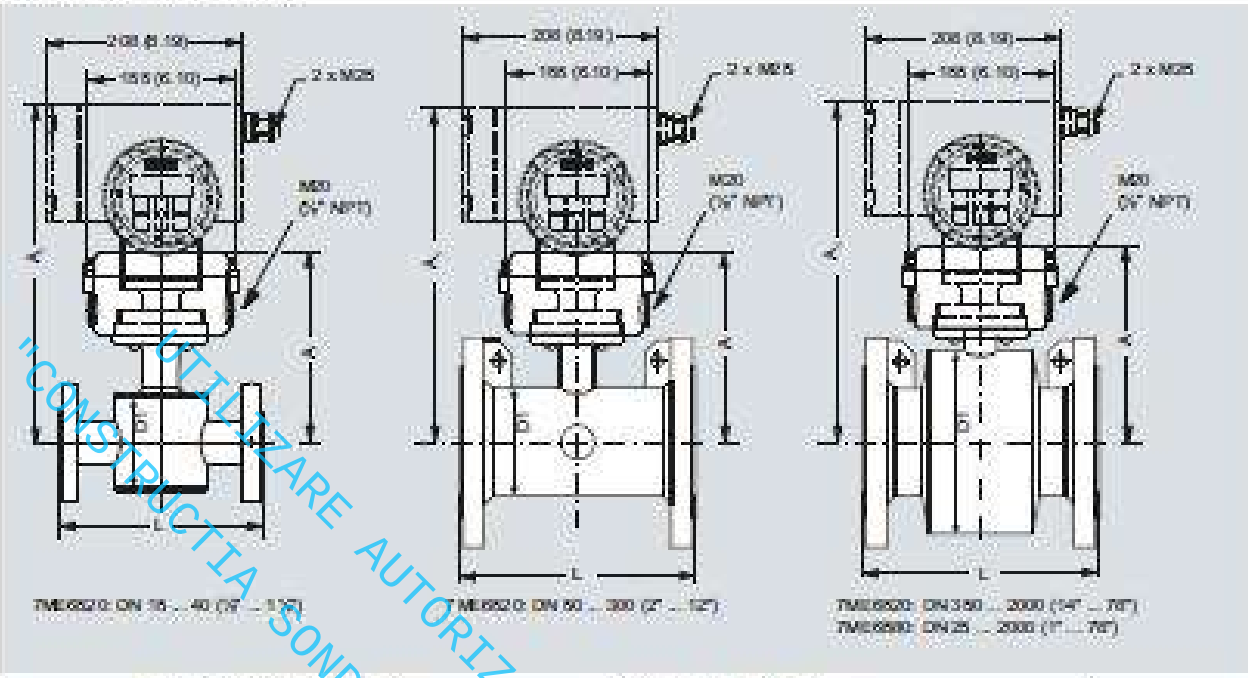
Order code: P17	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
„R" Q3/Q1	200	200	200	200	200	200	200	200	200
Q4 [m³/h]	50	78.75	125	200	312.5	500	787.5	1250	2000
Q3 [m³/h]	**40**	**63**	**100**	**160**	**250**	**400**	**630**	**1000**	**1600**
Q2 [m³/h]	0.32	0.50	0.80	1.28	2.00	3.20	5.0	8.0	12.8
Q1 [m³/h]	0.20	0.32	0.50	0.80	1.25	2.00	3.15	5.0	8.0

Order code: P18	DN 50 (2")	DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 125 (5")	DN 150 (6")	DN 200 (8")	DN 250 (10")	DN 300 (12")
„R" Q3/Q1	250	250	250	250	250	250	250	250	250
Q4 [m³/h]	50	78.75	125	200	312.5	500	787.5	1250	2000
Q3 [m³/h]	**40**	**63**	**100**	**160**	**250**	**400**	**630**	**1000**	**1600**
Q2 [m³/h]	0.26	0.40	0.64	1.02	1.58	2.56	4.0	6.4	10.24
Q1 [m³/h]	0.16	0.25	0.40	0.64	1.00	1.60	2.52	4.0	6.4

Dimensiuni de gabarit



Nominal size		7ME6520 NBR or EPDM liner				7ME6520 Ebonite liner				L	
		A		Di		A		Di			
[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
15	½	177	7.0	77	3.0	–	–	104	4.09	200	7.9
25	1	187	7.4	96	3.8	187	7.4	104	4.09	200	7.9
40	1½	202	8.0	127	5.0	197	7.8	124	4.88	200	7.9
50	2	188	7.4	76	3.0	205	8.1	139	5.47	200	7.9
65	2½	194	7.6	89	3.5	212	8.3	154	6.06	200	7.9
80	3	200	7.9	102	4.0	222	8.7	174	6.85	200	7.9
100	4	207	8.1	114	4.5	242	9.5	214	8.43	250	9.8
125	5	217	8.5	140	5.5	256	10.0	239	9.41	250	9.8
150	6	232	9.1	168	6.6	276	10.9	282	11.1	300	11.8
200	8	257	10.1	219	8.6	304	12.0	338	13.3	350	13.8
250	10	284	11.2	273	10.7	332	13.1	392	15.47	450	17.7
300	12	310	12.2	324	12.8	357	14.1	444	17.76	500	19.7
350	14	382	15.0	461	17.8	382	15.0	502	19.76	550	21.7
400	16	407	16.0	502	19.8	397	15.2	560	22.16	600	23.6
450	18	438	17.2	563	22.2	438	16.5	614	24.17	600	23.6
500	20	463	18.2	614	24.2	443	17.4	715	28.15	600	23.6
600	24	514	20.2	715	28.2	494	19.4	816	32.13	600	23.6
700	28	564	22.2	816	32.1	544	21.4	869	34.21	700	27.6
750	30	591	23.3	869	34.2	571	22.5	927	36.5	750	29.5
800	32	616	24.3	927	36.5	606	23.9	1032	40.63	800	31.5
900	36	663	26.1	1032	40.6	663	26.1	1136	44.72	900	35.4
1000	40	714	28.1	1136	44.7	704	27.7	1136	44.72	1000	39.4
	42	714	28.1	1136	44.7	704	27.7	1238	48.74	1000	39.4
	44	765	30.1	1238	48.7	765	29.7	1348	53.07	1100	43.3
1200	48	820	32.3	1348	53.1	810	31.9	1575	86.94	1200	47.2
1400	54	–	–	–	–	926	36.4	1672	65.83	1400	55.1
1500	60	–	–	–	–	972	38.2	1915	75.39	1500	59.1
1600	66	–	–	–	–	1026	40.4	1974	77.72	1600	63
1800	72	–	–	–	–	1123	44.2	2174	85.59	1800	70.9
2000	78	–	–	–	–	1223	48.1	–	–	2000	78.7



Nominal size		7MEssso NBR or EPDM liner						7MEssso Ebonite liner							
		A		A1		D1		A		A1		D1		L	
[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]	[mm]	[inch]
15	½	177	7.0	331	13.0	95	3.8	-	-	341	13.4	104	4.09	200	7.9
25	1	188	7.4	341	13.4	95	3.8	187	7.4	351	13.8	104	4.09	200	7.9
40	1½	200	8.0	356	14.0	127	5.0	197	7.8	360	14.1	124	4.88	200	7.9
50	2	188	7.4	342	13.5	76	3.0	205	8.1	366	14.4	139	5.47	200	7.9
65	2½	194	7.6	348	13.7	89	3.5	212	8.4	376	14.8	164	6.06	200	7.9
80	3	200	7.9	354	14.0	102	4.0	222	8.7	396	15.6	174	6.85	200	7.9
100	4	207	8.1	361	14.2	114	4.5	242	9.5	409	16.1	214	8.43	250	9.8
125	5	217	8.5	371	14.6	140	5.5	255	10.0	430	16.9	239	9.41	250	9.8
150	6	232	9.1	386	15.2	168	6.6	276	10.9	458	18.0	282	11.1	300	11.8
200	8	257	10.1	411	16.2	219	8.6	304	12.0	486	19.1	338	13.31	350	13.8
250	10	284	11.2	438	17.2	273	10.8	332	13.1	511	20.1	393	15.47	450	17.7
300	12	310	12.2	464	18.3	324	12.8	367	14.4	546	20.3	444	17.76	500	19.7
350	14	382	15.0	536	21.1	451	17.8	362	14.3	541	21.3	502	19.76	550	21.7
400	16	407	16.0	561	22.1	502	19.8	407	16.2	571	22.5	563	22.16	600	23.6
450	18	438	17.2	592	23.3	564	22.2	418	16.5	582	23.5	614	24.17	600	23.6
500	20	463	18.2	617	24.3	614	24.2	443	17.4	648	25.5	715	28.15	600	23.6
600	24	514	20.2	668	26.3	715	28.2	494	19.4	698	27.5	815	32.13	600	23.6
700	28	564	22.2	718	28.3	816	32.1	544	21.4	726	28.6	869	34.21	700	27.6
750	30	591	23.3	745	29.3	869	34.2	571	22.5	760	29.9	927	36.5	750	29.5
800	32	616	24.3	770	30.3	927	36.5	595	23.9	807	31.8	1032	40.63	800	31.5
900	36	663	26.1	817	32.2	1032	40.6	652	25.7	858	33.8	1145	44.72	900	35.4
1000	40	714	28.1	868	34.2	1136	44.7	704	27.7	858	33.8	1136	44.72	1000	39.4
	42	714	28.1	868	34.2	1136	44.7	704	27.7	904	35.6	1238	48.74	1000	39.4
	44	765	30.1	919	36.2	1238	48.7	765	29.9	964	38.0	1348	53.07	1100	43.3
1200	48	820	32.3	974	38.3	1348	53.1	810	31.9	1079	42.5	1675	65.94	1200	47.2
1400	54	-	-	-	-	-	-	925	36.4	1126	44.3	1672	65.83	1400	55.1
1500	60	-	-	-	-	-	-	972	38.2	1179	46.4	1915	75.39	1500	59.1
1600	66	-	-	-	-	-	-	1025	40.4	1277	50.3	1974	77.72	1600	63.0
1800	72	-	-	-	-	-	-	1129	44.2	1377	54.2	2174	85.59	1800	70.9
2000	78	-	-	-	-	-	-	1229	48.1	-	-	-	-	2000	78.7

Greutate

Nominal size		7MEsoo NBR or EPDM liner PN 10		PN 16		PN 40		Class 150/AWWA AS				7MEsoo Ebonite liner PN 16	
[mm]	[inch]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]	[kg]	[lbs]
15	½	-	-	-	-	4	9	4	9	4	9	5	11
25	1	-	-	-	-	6	12	6	11	4	9	5	11
40	1½	-	-	-	-	8	18	7	15	7	15	8	17
50	2	-	-	9	20	-	-	8	20	9	20	9	20
65	2½	-	-	10.7	24	-	-	11	24	10.7	24	11	24
80	3	-	-	11.8	26	-	-	13	28	11.8	26	12	26
100	4	-	-	15.2	33	-	-	19	41	15.2	33	16	35
125	5	-	-	20.4	45	-	-	24	52	-	-	19	42
150	6	-	-	26	57	-	-	29	64	26	57	27	60
200	8	48	106	48	106	-	-	56	124	45	106	40	88
250	10	64	141	69	152	-	-	79	174	69	152	60	132
300	12	86	167	86	189	-	-	110	243	86	189	80	176
350	14	104	229	125	274	-	-	139	307	115	254	110	242
400	16	119	263	143	314	-	-	159	351	125	277	125	276
450	18	136	299	173	381	-	-	182	400	141	311	175	385
500	20	163	359	223	491	-	-	225	496	189	418	200	440
600	24	296	519	338	744	-	-	320	704	301	664	287	633
700	28	270	595	314	692	-	-	273	602	320	704	330	728
750	30	-	-	-	-	-	-	329	725	-	-	360	794
800	32	346	763	396	873	-	-	365	804	428	944	450	992
900	36	432	951	474	1045	-	-	496	1089	619	1362	530	1168
1000	40	513	1130	600	1321	-	-	583	1282	636	1399	680	1455
	42	-	-	-	-	-	-	687	1512	-	-	-	-
	44	-	-	-	-	-	-	763	1680	-	-	1140	2513
1200	48	643	1415	886	1948	-	-	861	1896	813	1789	1180	2601
1400	54	1532	3510	-	-	-	-	-	-	-	-	1600	3528
1500	60	-	-	-	-	-	-	-	-	-	-	2480	5423
1600	66	2110	4652	-	-	-	-	-	-	-	-	2525	5568
1800	72	2560	5644	-	-	-	-	-	-	-	-	2990	6460
2000	78	3640	8025	-	-	-	-	-	-	-	-	3665	8080

SIEMENS

Siemens SAS
PD PA MF-H QM

Wednesday, 9 October 2015

Manufacturer's declaration

Water meters free from Pseudomonas aeruginosa and legionella through disinfection

The water meters manufactured by us in the Siemens plant at *1 chemin de la Sandlach F-67507 HAGUENAU* are calibrated in our state-recognised test centre COFRAC and tested for MID conformity.

Our circulating water at the test stands is continuously disinfected via an extremely efficient process. The optimum disinfection security is achieved for our customers with high-precision instrumentation and control technology and through regular controls by a certified laboratory. The process used has been tested for pathogenic micro-organisms such as legionella or Pseudomonas and is in compliance with prevailing drinking water standards.

Thanks to the smooth design, there is no water residue left in our meters after calibration, which also makes it more difficult for biofilms to grow during ongoing operation than in other designs.

The materials used which come into contact with drinking water meet the requirements of worksheet W270 from the DVGW (German Technical and Scientific Association for Gas and Water).

Therefore, we can assure you that the water meters manufactured in the Siemens Haguenau plant leave our factory in a microbiologically perfect state.

Udo Wiggermann
PD PA MF-H
CEO

Huss-Braun Thierry
PD PA MF-H QM
Quality Manager

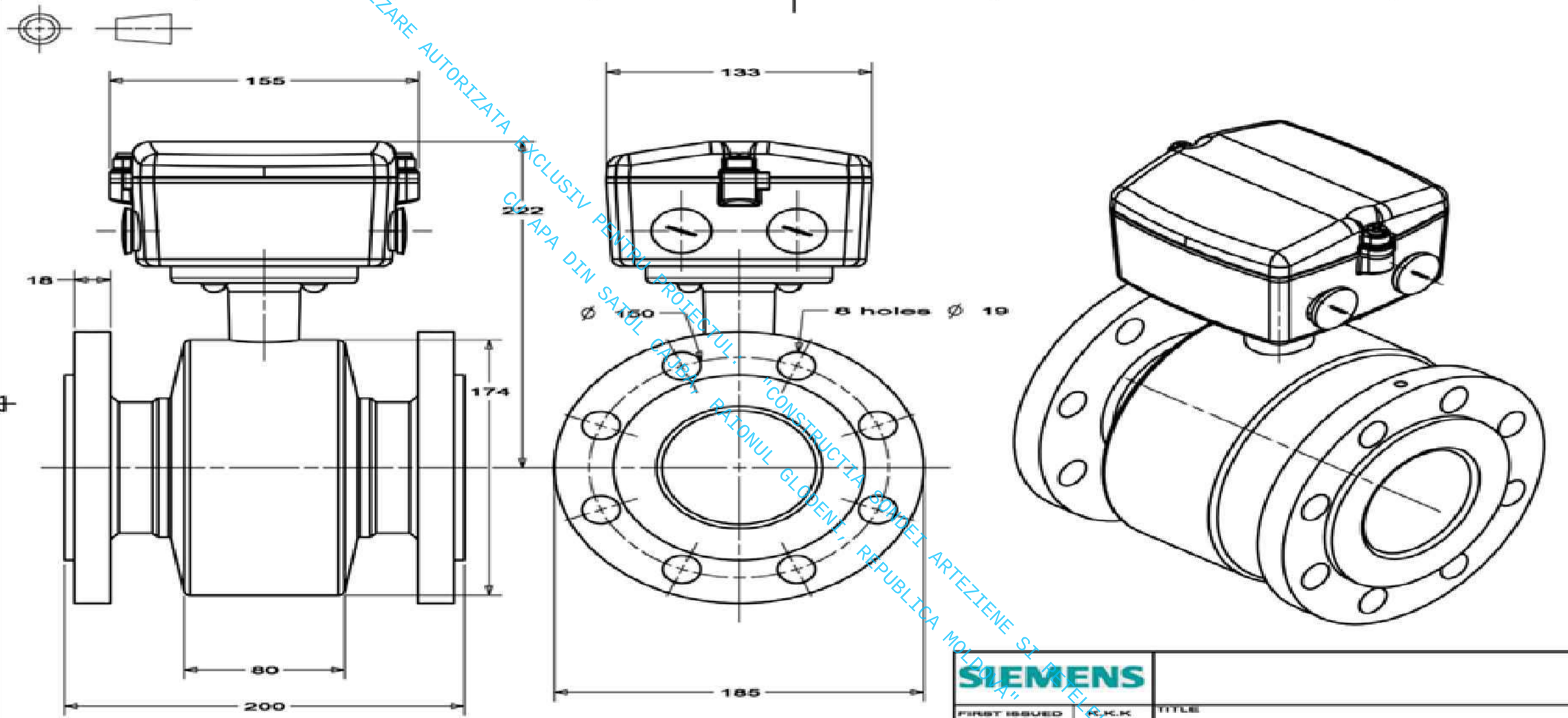
Siemens SAS
Divison Production Sensors and Communication
Usine de Haguenau

Société Anonyme au Capital de 32.396.142,65€

Etablissement de Haguenau
1, Chemin de la Sandlach
C.S. 60189
67506 Haguenau Cedex
N° Siren : 562 016 774
N° Siret 562 016 774 01553

Tél (+33)03.69.06.55.55
Fax (+33)03.69.06.66.66

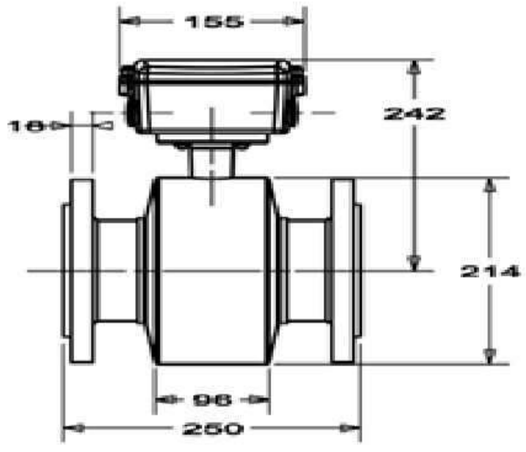
APE : 3320D
R.C.S. Bobigny : B 562 016 774
N° TVA FR : 205 620 16 774

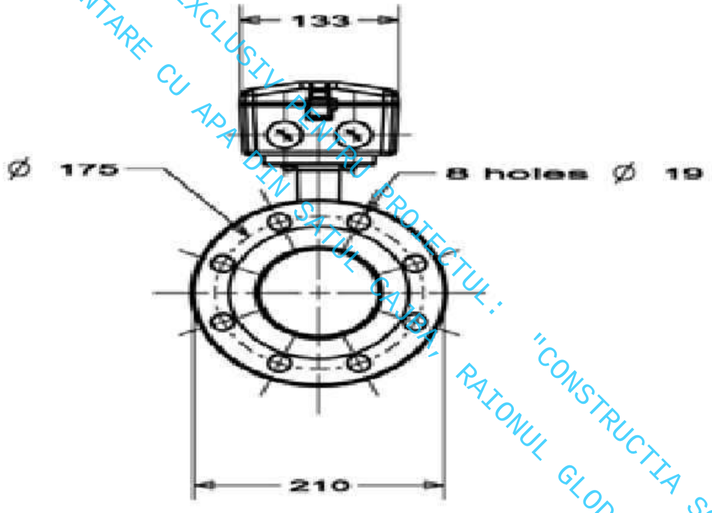


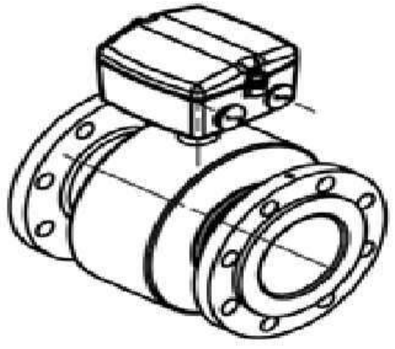
SIEMENS		
FIRST ISSUED	K.K.K	TITLE: MAG5100W JIS K10 DN80
DRAWN BY	K.K.K	
CHECKED BY		
APPROVED BY		
		SIZE: A3 · DRG NO.: MAG5100W JIS K10 DN80 · REV: 1
		SCALE 1:2 · SHEET 1 OF 1

3D CAD MASTER PART NAME:

ALL DIMENSIONS IN MM





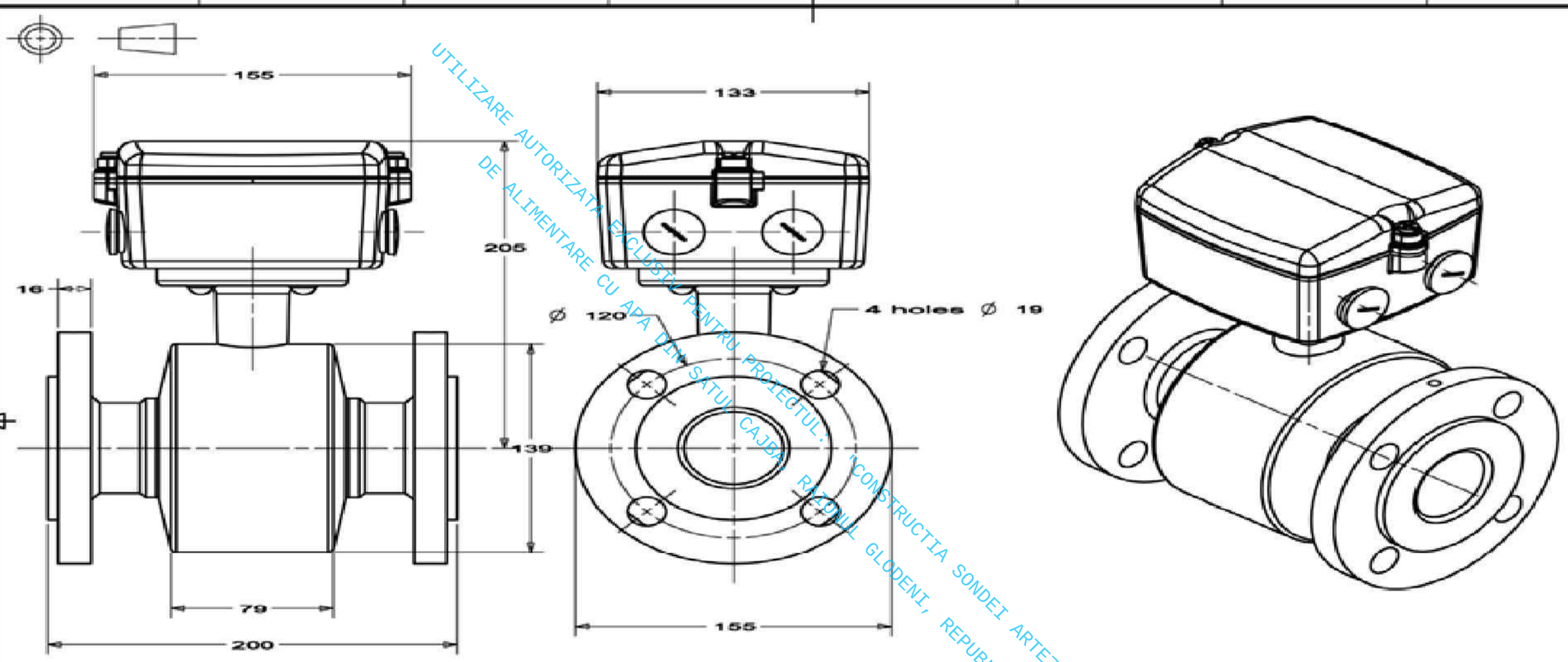


SIEMENS

FIRST ISSUED	K.K.K	TITLE: MAG5100W JIS K10 DN100
DRAWN BY	K.K.K	
CHECKED BY		
APPROVED BY		SIZE: A3 · DRG NO.: MAG5100W JIS K10 DN100 · REV: 1
		SCALE 1:5 · SHEET 1 OF 1

3D CAD MASTER PART NAME:

ALL DIMENSIONS IN MM



SIEMENS

FIRST ISSUED	K.K.K
DRAWN BY	K.K.K
CHECKED BY	
APPROVED BY	

TITLE: MAG5100W JIS K10 DN50

SIZE	DRG NO.	REV
A3	MAG5100W JIS K10 DN50	1

SCALE 1:2 | SHEET 1 OF 1

3D CAD MASTER PART NAME:

ALL DIMENSIONS IN MM

Approval Number: 1607501
Test Report: MAT/LAB 491K

Water Regulations Advisory Scheme Ltd.
Unit 13,
Willow Road,
Pen y Fan Industrial Estate,
Crumlin,
Gwent,
NP11 4EG

24th May 2016

HEXPOL Compounding UK Ltd
Unit 3 Fifth Avenue,
Tameside Park,
Dukinfield,
Cheshire
SK16 4PP

WATER REGULATIONS ADVISORY SCHEME LTD. (WRAS)
CONSECUTIVE MATERIAL APPROVAL

The material referred to in this letter is suitable for contact with wholesome water for domestic purposes having met the requirements of BS6920-1:2000 and/or 2014 'Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water'.

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

RUBBERS - NATURAL OR ISOPRENE - MATERIAL ONLY. **5380**

'F7104B`. Black coloured, natural rubber (Ebonite) material manufactured by calendaring. Shore hardness 75 shore D. Tested in-radius size 1.5mm. For use with water up to 23°C.

APPROVAL NUMBER: 1607501
APPROVAL HOLDER: HEXPOL COMPOUNDING UK LTD

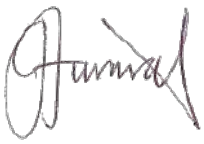
This is a re-approval of 1106509 which is valid between June 2011 and June 2016.

The Scheme reserves the right to review approval.
Approval 1607501 is valid between July 2016 and July 2021

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, "Materials which have passed full tests of effect on water quality".

The Directory may be found at: www.wras.co.uk/directory

Yours faithfully



Jason Furnival
Approvals & Enquiries Manager
Water Regulations Advisory Scheme

WRAS MATERIAL APPROVAL - MATERIALS WHICH HAVE PASSED FULL TESTS OF EFFECT ON WATER QUALITY

The material referred to in this letter is suitable for contact with water for domestic purposes. **Approval of this material does not signify the approval of its mechanical or physical properties for any use.**

Manufacturers or applicants may only quote in their sales literature terms which are used in this letter, namely that; 'the material as listed, having passed the tests of effect on water quality, is suitable for use in contact with wholesome water'

This may be abbreviated to 'Water Regulations Advisory Scheme - Approved Material' or 'WRAS Approved Material'.

The scope of an Approval does not extend to rebranded materials unless otherwise agreed by the Scheme.

Use of the WRAS Approved Material Logo

Approval holders may use the WRAS Approved Material logo and make reference to any approval issued by WRAS Ltd. in respect of a particular material or range of materials provided the approval is, and remains valid.

Approval holders are entitled to use the logo on the packing, promotional literature and point of sale advertising Approved Materials.

Modifications to existing Approvals

It is a condition of WRAS Material Approval that NO changes or modifications to the Approved Material, be made without the Approval Holder first notifying WRAS Ltd. Full details of the proposed changes must be provided to the Scheme. Failure to comply with this condition will immediately invalidate a previously granted Approval.

Re-Approval

WRAS will write to you 1 year before the approval expires asking whether you would like to renew it. Please complete the relevant section of the MA3 application form which will be included with the letter and return to WRAS (via e-mail or post).

Please note it is the responsibility of the Approval Holder to ensure the Approval remains valid. WRAS Ltd. accepts no liability for the delay in granting approval where this is caused by circumstances outside of the Scheme's control.

Approval Number: 1501548
Test Report: MAT/LAB 292H/1a

Water Regulations Advisory Scheme Ltd.
Unit 13,
Willow Road,
Pen y Fan Industrial Estate,
Crumlin,
Gwent,
NP11 4EG

24th January 2019

Siemens AG
Division: Process Industries and Drive,
DE-76181 Karlsruhe,
Germany.

WATER REGULATIONS ADVISORY SCHEME LTD. (WRAS)
MATERIAL APPROVAL

The material referred to in this letter is suitable for contact with wholesome water for domestic purposes having met the requirements of BS6920-1:2000 and/or 2014 'Suitability of non-metallic products for use in contact with water intended for human consumption with regard to their effect on the quality of the water'.

The reference relates solely to its effect on the quality of the water with which it may come into contact and does not signify the approval of its mechanical or physical properties for any use.

RUBBERS - GENERAL - MATERIAL ONLY. **5320**

'SITRANS F M Ebonite 1751#'. Black coloured Ebonite rubber material manufactured by vulcanisation, Shore hardness 65D. Tested in-radius size 2.9mm. For use with water up to 23°C.

APPROVAL NUMBER: 1501548
APPROVAL HOLDER: SIEMENS AG

The Scheme reserves the right to review approval.
Approval 1501548 is valid between January 2015 and January 2020

An entry, as above, will accordingly be included in the Water Fittings Directory on-line under the section headed, “Materials which have passed full tests of effect on water quality”.

The Directory may be found at: www.wras.co.uk/directory

Yours faithfully

Jason Furnival
Approvals & Enquiries Manager
Water Regulations Advisory Scheme

WRAS MATERIAL APPROVAL - MATERIALS WHICH HAVE PASSED FULL TESTS OF EFFECT ON WATER QUALITY

The material referred to in this letter is suitable for contact with water for domestic purposes. **Approval of this material does not signify the approval of its mechanical or physical properties for any use.**

Manufacturers or applicants may only quote in their sales literature terms which are used in this letter, namely that; 'the material as listed, having passed the tests of effect on water quality, is suitable for use in contact with wholesome water'

This may be abbreviated to 'Water Regulations Advisory Scheme - Approved Material' or 'WRAS Approved Material'.

The scope of an Approval does not extend to rebranded materials unless otherwise agreed by the Scheme.

Use of the WRAS Approved Material Logo

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Re-Approval

WRAS will write to you 1 year before the approval expires asking whether you would like to renew it. Please complete the relevant section of the MA3 application form which will be included with the letter and return to WRAS (via e-mail or post).

Please note it is the responsibility of the Approval Holder to ensure the Approval remains valid. WRAS Ltd. accepts no liability for the delay in granting approval where this is caused by circumstances outside of the Scheme's control.

MINISTERUL SĂNĂTĂŢII, MUNCII ŞI PROTECŢIEI SOCIALE AL REPUBLICII MOLDOVA
МИНИСТЕРСТВО ЗДРАВООХРАНЕНИЯ, ТРУДА И СОЦИАЛЬНОЙ ЗАЩИТЫ РЕСПУБЛИКИ МОЛДОВА
AGENŢIA NAŢIONALĂ PENTRU SĂNĂTATE PUBLICĂ
НАЦИОНАЛЬНОЕ АГЕНТСТВО ОБЩЕСТВЕННОГО ЗДОРОВЬЯ
MD-2028, mun. Chişinău, str. Gheorghe. Asachi, 67-a
Tel. + 373 22 574501, fax + 373 22 729725
IDNO 1018601000021
E-mail: ansp@ansp.md; anticamera@ansp.md

DOCUMENTAŢIE MEDICALĂ / Медицинская документация
FORMULAR / Форма **Nr. 303-2/e**
APROBAT DE MSMPS al RM / Утверждена МЗТСЗ РМ
31.10.11 Nr. 828
Centrul de încercări de laborator acreditat de către Centrul Naţional de Acreditare din Republica Moldova MOLDAC
Испытательный лабораторный центр аккредитованный Национальным Аккредитационным Центром РМ MOLDAC
Certificat nr. LÎ-044 din 17.02.2018 valabil până la 16.02.2022
Acreditat în Sistemul Ministerului Sănătăţii, Muncii şi Protecţiei Sociale al RM
Аккредитованный в системе Министерства Здравоохранения, Труда и Социальной Защиты Республики Молдова
Certificat nr. 2293 din 24.10.2014, valabil până la 24.10.2019

AVIZ SANITAR

PENTRU PRODUSELE ALIMENTARE ŞI NEALIMENTARE Nr. 3939

Санитарное заключение для пищевых и непищевых продуктов

din/от "23" noiembrie a./г. 2020

Prin prezentul aviz sanitar se confirmă că producerea, importul, utilizarea şi desfacerea produselor / echipamentelor
Настоящим санитарным заключением подтверждается, что производство, ввоз, использование и реализация продукции / оборудования

INSTALAŢII CONTAINERIZATE DE CLORINARE ŞI ELECTROLIZĂ

sunt conforme Regulamentului (lor) sanitar (e) / *соответствуют санитарному (ым) регламенту (ам)* (se va indica denumirea completă a Regulamentului (lor) sanitar (e) / *указать полное наименование санитарного (ых) регламента (ов)*

HG nr.913 din 25.07.2016 „Reglementări tehnice cu privire la produsele pentru construcţii"
HG nr.308 din 29.04.2011, Legea 182 din 19.12.2019, HG nr.1466 din 30.12.2016

Organizaţia-producătoare/importatoare, ţara de origine / *Организация произв./импортер, страна происхождения*

România, "UT4FB CONTROL"

Destinatarul avizului sanitar / *получатель санитарного заключения*

„DEMATEK WATER MANAGEMENT" SRL, România, sector 6, Bucureşti, str.Preciziei nr. 6 M

Ca temei pentru recunoaşterea conformităţii produselor Regulamentului (lor) sanitar (e) menţionat (e) a servit / *Основанием для признания продукции указанному (ым) санитарному (ым) регламенту (ам) послужило*

Demers, evaluare tehnică, raport tehnic

(a enumera documentele de însoţire, buletinele de analiză / *перечислить сопроводительные док., протоколы исслед.)*

Caracteristica sanitară a produselor / *санитарная характеристика продукции:*
Parametrii (factorii) / *показатели (факторы)* **Normativul sanitar** / *санитарный норматив*

Instalaţia containerizată de clorinare şi electroliză (echipamentele utilizate nu conţin substanţe toxice, radioactive sau alte elemente dăunătoare) nu prezintă pericol pentru sănătatea oamenilor şi mediului înconjurător la respectarea prevederilor evaluării tehnice, este conformă HG nr.913 din 25.07.2016 „RT cu privire la produsele pentru construcţii", Legea 182/2019, HG nr.1466/2016

Domeniu de utilizare / *Область применения:* pentru instalaţii de alimentare cu apă

Condiţiile necesare de utilizare, depozitare, transportare, măsurile de securitate / *Необходимые условия использования, хранения, транспортировки, меры безопасности:*
plasarea pe piaţă în condiţiile respectării legislaţiei în vigoare în Republica Moldova

AVIZUL SANITAR este valabil pînă la / *Санитарное Заключение действительно до:* 30 noiembrie 2023

DIRECTORUL AGENŢIEI NAŢIONALE PENTRU SĂNĂTATE PUBLICĂ
Vasile GUŞTIUC
(numele, prenumele/ Ф.И.О.) (semnătura / подпись)

L.Ş.

ANSP/HAO3

SP 10-XVI-09 0004262 03

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MINISTERUL ECONOMIEI ŞI INFRASTRUCTURII AL REPUBLICII MOLDOVA

CONSILIUL TEHNIC PERMANENT PENTRU CONSTRUCŢII

Evaluare tehnică
Nr. 02/11-049:2019

Valabilitate până la 30.12.2022

Cod NM MD 3917

INSTALAȚIE CONTAINERIZATĂ DE CLORINARE ȘI ELECTROLIZĂ

Titular: **"DEMATEK WATER MANAGEMENT" SRL**, str. Preciziei Nr. 6M, sector 6, București, România, Tel./Fax +40 371 475 962

Producător: **"UT4FB CONTROL"** S.R.L., str. Islaz Nr.41, 700182 Iași, județul Iași, Romania, Tel.: +40 374624200, Fax +40 371 605 204

Evaluarea tehnică a fost emisă de ICŞP „INMACOMPROIECT” SRL, MD 2015, mun. Chişinău, str. Sarmizegetusa nr. 15, tel/fax 022 52-11-30, Grupa specializată nr. 11 "Lucrări de gospodărie comunală, alimentări cu apă, canalizări, staţii de tratare şi epurare, transport urban şi salubritate".

Prezenta evaluare tehnică conține 22 pagini și anexa 25 pagini care face parte integrantă din prezenta evaluare.

Prezenta evaluare tehnică este eliberată în conformitate cu Regulamentul cu privire la organizarea şi funcţionarea ghişeului unic de elaborare a evaluării tehnice în construcţii, în baza anexei nr.1 la Hotărârea Guvernului nr. 913 din 06 noiembrie 2014.

Prezenta Evaluare tehnică este valabilă numai însoțită de avizul tehnic al Consiliului Tehnic Permanent pentru Construcții și nu ține loc de Certificat de calitate

Grupa specializată nr. 11 "Lucrări de gospodărie comunală, alimentări cu apă, canalizări, staţii de tratare şi epurare, transport urban şi salubritate" a ICŞP „INMACOMPROIECT” SRL analizând Dosarul tehnic şi documentele prezentate de firma "DEMATEK WATER MANAGEMENT" SRL, str. Preciziei Nr. 6M, sector 6, Bucureşti, România referitor la: "INSTALAŢIE CONTAINERIZATĂ DE CLORINARE ŞI ELECTROLIZĂ" fabricată de firma "UT4FB CONTROL" S.R.L., str. Islaz Nr.41, 700182 Iaşi, judeţul Iaşi, Romania, Tel.: +40 374624200, Fax +40 371 605 204, eliberează Evaluarea tehnică nr. 02/11-049:2019 în conformitate cu documentele tehnice valabile în Republica Moldova, aferente domeniului de referinţă şi dosarul tehnic elaborat de "DEMATEK WATER MANAGEMENT" SRL.

1 Definirea succintă

1.1 Descrierea succintă

Instalaţia containerizată de clorinare şi electroliză este de două tipuri staţie de clorinare containerizată cu două sisteme de clorinare şi staţie de clorinare containerizată cu un sistem de clorinare

Staţia de clorinare containerizată cu un sistem de clorinare este compusă din:

1. Container

Staţia de clorinare va fi amplasată într-un container, cu o singură încăpere, cu dimensiunile din planşă, cu stâlpi de susţinere profilaţi la rece din tablă zincată cu grosimea de 2 mm, pereţi din panou sandwich poliuretan tip C 1 RAL 9002 (garantat 10 ani), acoperiş cu rezistenţă portantă de 250 kg/m^2, format din structură metalică zincată profilată la rece, grunduită reactiv şi vopsită, tablă zincată dublu fălţuită, grosime 0,5 mm, folie anticondens, vată minerală grosime 100 mm norma C1 ISOVER®, tavan PVC RAL 9002.

Accesul în container se va realiza printr-o uşă laterală cu dimensiunile 900x2000 mm, PVC/metalică.

2. Instalaţii climatizare

Containerul va fi încălzit utilizând un convector electric termostatat cu puterea de 2000 W, cu montare pe perete.

Pentru prevenirea apariţiei condensului, va fi prevăzut un ventilator axial, cu montare murală, cu funcţionare temporizată, cu debitul de 1300 m^3/h, 230 Va.c., 60 W. Grila de admisie a aerului în zona tehnologică va fi montată în jumătatea inferioară a uşii de acces sau pe peretele opus peretelui pe care se montează ventilatorul.

3. Instalaţii electrice

Staţia de clorinare va fi prevăzută cu un singur tablou electric şi de automatizare şi control al procesului, cu dimensiunile de 800 x 260 x 600 mm.

Tabloul electric va fi prevăzut cu:

- inversor manual de sursă, pentru posibilitatea conectării unui grup generator portabil (în sursa 1 se va conecta alimentarea din reţeaua electrică, iar în sursa 2 se va conecta o fişă industrială monofazată (230 V), montată aparent pe peretele exterior al tabloului electric);
- echipamente pentru protecţia şi comanda dozatoarelor de hipoclorit;
- echipamente de protecţie pentru debitmetre;
- siguranţe automate diferenţiale pentru circuitele de iluminat şi încălzire;
- priză 230 Vc.a. monofazata pentru serviciile interne;
- modul de protecţie la supratensiuni atmosferice şi de comutaţie;

4. Instalaţii tehnologic***e***

Linie de măsurare a debitului şi de injecţie a hipocloritului, care va fi prevăzută cu următoarele echipamente:

- robinet de izolare la intrare;
- debitmetru (cu tronsoanele amonte și aval necesare);
- sistem de analiză clor rezidual;
- sistem de dozare hipoclorit;
- robinet acționat electric la ieșirea liniei.

Linia de măsură se va realiza utilizând conducte din oțel inoxidabil.

Caracteristici stații de clorinare:

- stația de clorinare sistem D.200:
  - dimensiuni container: 3500 x 2400 x 2700 mm;
  - diametru intrare: Dn200 (PEHD De200);
  - diametru ieșire: Dn200 (PEHD De200);
  - debitmetru: Dn200;
- stația de clorinare sistem D.110:
  - dimensiuni container: 3500 x 2400 x 2700 mm;
  - diametru intrare: Dn110 (PEHD De110);
  - diametru ieșire: Dn110 (PEHD De110);
  - debitmetru: Dn110.

Stație de clorinare containerizată cu un sistem de clorinare

Container

Stația de clorinare va fi amplasată într-un container, cu o singură încăpere, cu dimensiunile din planșă, cu stâlpi de susținere profilați la rece din tablă zincată cu grosimea de 2 mm, pereți din panou sandwich poliuretan tip C 1 RAL 9002 (garantat 10 ani), acoperiș cu rezistență portantă de 250 kg/m^2, format din structură metalică zincată profilată la rece, grunduită reactiv și vopsită, tablă zincată dublu fălțuită, grosime 0,5 mm, folie anticondens, vată minerală grosime 100 mm norma C1 ISOVER®, tavan PVC RAL 9002.

Accesul în container se va realiza printr-o ușă laterală cu dimensiunile 900x2000 mm, PVC/metalică.

Instalații climatizare

Containerul va fi încălzit utilizând un convector electric termostatat cu puterea de 2000 W, cu montare pe perete.

Pentru prevenirea apariției condensului, va fi prevăzut un ventilator axial, cu montare murală, cu funcționare temporizată, cu debitul de 1300 m^3/h, 230 Va.c., 60 W. Grila de admisie a aerului în zona tehnologică va fi montată în jumătatea inferioară a ușii de acces sau pe peretele opus peretelui pe care se montează ventilatorul.

Instalații electrice

Stația de clorinare va fi prevăzută cu un singur tablou electric și de automatizare și control al procesului, cu dimensiunile de 800 x 260 x 600 mm.

Caracteristicile Instalației containerizate de clorinare și electroliză sunt date în Dosarul tehnic al prezentei Evaluări tehnice.

1.2 Identificarea produselor

Elementele Instalației containerizate de clorinare și electroliză sunt marcate din fabricație cu etichete adezive pe care sunt menționate în limba română date referitoare la:

- numele producătorului;
- adresa producătorului
- denumirea produsului;
- data fabricației;
- număr lot.

Produsele trebuie să fie însoțite de instrucțiuni de transport, depozitare și punere în operă.

Fiecare livrare va fi însoțită de declarație de conformitate (de performanță sau un certificat de calitate), aferent lotului de fabricație.

2 EVALUARE TEHNICĂ

2.1 Domeniul de utilizare acceptat

Instalația containerizată de clorinare și electroliză este utilizată pentru instalații de alimentare cu apă.

Produsele cuprinse în această evaluare tehnică se aplică numai urmare a unui proiect de execuţie întocmit cu respectarea Legii 721-XIII din 02.02.1996 privind calitatea în construcţii, cu modificările şi completările ulterioare şi a reglementărilor tehnice în vigoare. Prezenta Evaluare tehnică se referă numai la produsele plasate pe piața Republicii Moldova, și nu poate fi utilizată în alte scopuri.

2.2 Aprecierea asupra produsului

2.2.1 Aptitudinea de exploatare

Rezistență mecanică și stabilitate – Rezistența și stabilitatea sunt asigurate prin construcția produselor și prin modul de alegere, montare și exploatare corectă în conformitate cu prescripțiile în vigoare și a instrucțiunilor producătorului.

Produsele se execută cu utilaje de producţie specializate, cu sisteme automatizate și sunt fabricate din materiale de calitate, analizate și verificate.

Produsele prezintă rezistenţă mecanică la condiţiile normale de transport, manipulare şi exploatare;

Securitatea la incendiu - Produsele nu fac obiectul acestei cerințe particulare de comportare la foc. Clasa de reacție la foc este C_4.

Securitatea incendiară conform NCM E.03.02;

Igienă, sănătate și mediu înconjurător - Echipamentele utilizate nu conţin substanţe radioactive sau cancerigene, deşeuri toxice, rebuturi industriale sau alte substanţe ori elemente dăunătoare sănătăţii oamenilor sau integrităţii mediului înconjurător. La executarea lucrărilor, se vor respecta următoarele reglementari tehnice: Normativul NCM A 08.02; Codul muncii al Republicii Moldova Nr. 154 din 28.03.2003;

Siguranță și accesibilitate în exploatare - Exploatarea în condițiile precizate de producător conferă siguranță în exploatare prin menținerea caracteristicilor funcționale declarate pe durata de viață estimată a produsului.

Produsele nu implică riscul de accidente la utilizarea lor normală. Dacă se respectă condițiile de montaj impuse de producător și normativele în vigoare se apreciază o bună siguranță în funcționare.

Protecția împotriva zgomotului – Nu influențează această cerință.

Economia de energie – Produsele sunt fabricate pe utilaje automate de producţie, moderne, necesitând un consum mic de energie.

Produsele nu fac obiectul unor cerințe speciale pentru izolare termică în timpul transportului și depozitării.

Izolare termică – Nu influențează această cerință.

2.2.2 Durabilitatea și întreținerea

Instalația containerizată de clorinare și electroliză este prezintă o bună rezistență la agenți chimici.

Producătorul acordă o garanție de 24 luni de la punerea în funcțiune. Se vor asigura piese de schimb și service specializat în garanție și post garanție. Piese de schimb în post garanție pe o perioada de 10 ani.

2.2.3 Fabricația și controlul

Instalația containerizată de clorinare și electroliză se realizează la societatea "UT4FB CONTROL" S.R.L., România în secţiile de producţie proprii, dotate cu utilaje specifice şi cu personal calificat pentru deservire. Instalația containerizată

de clorinare şi electroliză este se realizează pe baza normelor tehnice ale producătorului, în condiţii care asigură reproductibilitatea performanţelor aferente domeniului de utilizare preconizat.

În vederea asigurării constantei calităţii, producătorul va urmări:

- **Intern unităţii**: controlul intern sever şi eficient atât pentru materiile prime şi respectarea parametrilor tehnologiei, cât şi pentru produsul finit, control efectuat conform Manualului de Asigurare a Calităţii al producătorului.
- **Extern unităţii**: obţinerea unei forme de certificare recunoscută pentru sistem şi produs.

Evaluarea conformităţii produselor trebuie efectuată după sistemul 3 din Regulamentul (UE) nr.305/2011 al Parlamentului European şi al Consiliului din 9 martie 2011.

2.2.4 Punerea în operă

Punerea în operă se realizează conform prescripţiilor (instrucţiunilor) de utilizare ale producătorului şi se efectuează de către unităţi specializate, calificate pentru acest tip de lucrări.

Produsele se pot utiliza fără dificultăţi particulare.

Punerea în operă se realizează conform proiectului întocmit de personal specializat, respectând instrucţiunile de utilizare ale producătorului şi normativele în domeniu. Lucrările de instalare şi montaj a produselor se vor efectua doar de către personal calificat în domeniu şi cu ajutorul utilajelor, dispozitivelor şi materialelor corespunzătoare.

Prevenirea noncalităţii în procesul executării lucrărilor se va asigura conform normativelor şi legislaţiei în vigoare.

2.3 Caietul de prescripţii tehnice

2.3.1 Condiţii de concepţii

Produsele trebuie să corespundă cerinţelor Certificatelor de calitate ale producătorului şi alte documente tehnico-normative care sunt în vigoare în Republica Moldova.

Proiectarea lucrărilor de montaj a instalaţiilor se va face conform reglementărilor tehnice în vigoare, ţinând seama de recomandările producătorului. Se vor avea în vedere, în principal, recomandările cuprinse în NCM A.08.02, CP G.03.02, СНиП 2.04.02-84, GOST 25150, GOST 12.3.006, precum şi precizările din prezenta Evaluare Tehnică.

2.3.2 Condiţiile de fabricare

Calitatea constantă a produsului va fi asigurată şi garantată de producător şi comerciant prin certificatul de calitate eliberat pentru fiecare lot livrat.

Controlul de inspecţie se efectuează minimum o dată în an de grupa specializată care a elaborat Evaluarea tehnică pe bază de contract.

2.3.3. Condiţiile de livrare

La livrare produsele trebuie să fie însoţite de Evaluarea tehnică, de Certificate de calitate pentru materiile prime şi materialele utilizate şi de instrucţiuni de utilizare, exploatare şi întreţinere elaborate dc producător în limba română.

Instalaţia containerizată de clorinare şi electroliză nu se ambalează. Se livrează vrac.

Producătorul va furniza datele privind condiţiile de transport, manipulare şi depozitare.

2.3.4 Condiţiile de punere în operă

Punerea în operă a produselor se va face conform documentelor tehnico-normative ale R. Moldova în vigoare aferente acestor produse, manualului de exploatare, fişelor tehnice ale echipamentelor

montate în proces şi schemelor electrice ale tabloului de automatizare.

Controlul materialelor întrebuinţate, al modului de execuţie şi al procesului tehnologic se va face pe toată durata lucrării.

Punerea în operă a produselor se va face conform cu NCM E.03.02, NCM A.08.02 şi alte documente tehnico-normative care sunt în vigoare Republica Moldova.

3 Remarci complimentare ale grupei specializate

3.1 Grupa specializată nr. 11 a examinat produsele şi remarcă că:

- Instalaţia containerizată de clorinare şi electroliză este realizată pe linii tehnologice moderne (utilaje, maşini, instalaţii) şi aplicate corect vor avea în continuare o comportare corespunzătoare în exploatare, în condiţiile specifice ale Republicii Moldova;

- constanta calităţii este asigurată prin autocontrol de producător prin laboratorul propriu şi control exterior – Certificat EN ISO 9001:2015 nr. Q-8838/17 din 22.05.2017 valabil 21.05.2020, eliberat de OC QScert Slovacia, EN ISO 14001:2015 nr. E-8838/17 din 22.05.2017 valabil 21.05.2020, eliberat de OC QScert Slovacia;

- orice modificare a tehnologiei de realizare a produselor, de introducere a noi materii prime care vor conduce la modificări ale caracteristicilor, se vor aduce la cunoştinţa elaboratorului de Evaluare tehnică.

3.2 Cerinţe privind siguranţa produsului asupra sănătăţii umane: nu conţin substanţe nocive, nu poluează şi nu prezintă pericol pentru sănătatea oamenilor şi mediul ambiant la utilizare cu respectarea condiţiilor stabilite de "DEMATEK WATER MANAGEMENT" SRL.

Calitatea produselor va fi asigurată şi garantată de producător şi comerciant prin certificat de calitate eliberat pentru fiecare lot livrat.

Concluzii: Utilizarea în Republica Moldova a Instalaţiei containerizată de clorinare şi electroliză în domeniile de utilizare acceptate este apreciată favorabil, daca se respectă prevederile prezentei Evaluări Tehnice.

Condiții

- Calitatea produselor și metodele de utilizare au fost examinate și găsite satisfăcătoare de ICȘP "INMACOMPROIECT" SRL.

- Controlul de inspecție asupra stabilității caracteristicilor confirmate prin evaluarea tehnică în cursul procesului de utilizare / comercializare se efectuează de către grupa specializată care a eliberat evaluarea tehnică cu încadrarea organelor de certificare sau laboratoarelor de încercări acreditate pentru acest domeniu de activitate.

- Oriunde se face referire în această evaluare la acte legislative sau reglementări tehnice, trebuie avut în vedere ca aceste acte să fie în vigoare la data elaborării acestei evaluări;

- Acordând această evaluare, Consiliul tehnic permanent pentru construcții nu se implică în prezența sau absența drepturilor de brevet conținute în produs și /sau drepturile legale ale firmei de a comercializa produsul;

- Trebuie menționat ca orice recomandare relativ la folosirea în condiții de siguranța a acestui produs, conținută în prezenta evaluare tehnică, reprezintă cerințele minime necesare la utilizarea lui;

- Acordând această evaluare, Consiliul tehnic permanent pentru construcții nu acceptă nici o responsabilitate față de vre-o persoană sau organism pentru orice pierdere sau daună survenită în legătură cu un rău personal ivit ca un rezultat direct sau indirect al folosirii acestui produs.

- Deținătorul Evaluării tehnice la folosirea produselor procurate va prezenta obligatoriu fiecărui agent economic care va folosi aceste produse copia evaluării tehnice și instrucțiunile de transport, depozitare și exploatare

VALABILITATE: **30 decembrie 2022**

NOTĂ:

1. Controlul de inspecție asupra produselor evaluate tehnic se efectuează de grupa specializată respectivă minimum o dată în an.
2. Prelungirea valabilității sau revizuirea Evaluării tehnice trebuie solicitată cu cel puțin trei luni înainte de data expirării termenului stabilit.
3. În cazul neprelungirii valabilității, Evaluarea tehnică se anulează de la sine.

DIRECTOR
ICȘP "INMACOMPROIECT" SRL **Anastasia BELOUSOVA**

DOSARUL TEHNIC

INSTALAȚIA CONTAINERIZATĂ DE CLORINARE ȘI ELECTROLIZĂ

Beneficiar: "DEMATEK WATER MANAGEMENT" SRL, str. Preciziei Nr. 6M, sector 6, București, România, Tel./Fax +40 371 475 962.

Producător: "UT4FB CONTROL" S.R.L., str. Islaz Nr.41, 700182 Iași, județul Iași, Romania, Tel.: +40 374624200, Fax +40 371 605 204

Grupa specializată nr. 11 "Lucrări de gospodărie comunală, alimentări cu apă, canalizări, stații de tratare și epurare, transport urban și salubritate"

RAPORT TEHNIC

A. DESCRIEREA

1 Principiul

Staţie de clorinare containerizată cu două sisteme de clorinare

Container

Staţia de clorinare va fi amplasată într-un container, cu o singură încăpere, cu dimensiunile din planşă, cu stâlpi de susţinere profilaţi la rece din tablă zincată cu grosimea de 2 mm, pereţi din panou sandwich poliuretan tip C 1 RAL 9002 (garantat 10 ani), acoperiş cu rezistenţă portantă de 250 kg/m^2, format din structură metalică zincată profilată la rece, grunduită reactiv şi vopsită, tablă zincată dublu fălţuită, grosime 0,5 mm, folie anticondens, vată minerală grosime 100 mm norma C1 ISOVER®, tavan PVC RAL 9002.

Accesul în container se va realiza printr-o uşă laterală cu dimensiunile 900x2000 mm, PVC/metalică.

Instalaţii climatizare

Containerul va fi încălzit utilizând un convector electric termostatat cu puterea de 2000 W, cu montare pe perete.

Pentru prevenirea apariţiei condensului, va fi prevăzut un ventilator axial, cu montare murală, cu funcţionare temporizată, cu debitul de 1300 m^3/h, 230 Va.c., 60 W. Grila de admisie a aerului în zona tehnologică va fi montată în jumătatea inferioară a uşii de acces sau pe peretele opus peretelui pe care se montează ventilatorul.

Instalaţii electrice

Staţia de clorinare va fi prevăzută cu un singur tablou electric şi de automatizare şi control al procesului, cu dimensiunile 800 x 260 x 600 mm.

Tabloul electric va fi prevăzut cu:

- inversor manual de sursă, pentru posibilitatea conectării unui grup generator portabil (în sursa 1 se va conecta alimentarea din reteaua electrică, iar în sursa 2 se va conecta o fişă industrială monofazată (230 V), montată aparent pe peretele exterior al tabloului electric);
- echipamente pentru protecţia şi comanda dozatoarelor de hipoclorit;
- echipamente de protecţie pentru debitmetre;
- siguranţe automate diferenţiale pentru circuitele de iluminat şi încălzire;
- priză 230 Vc.a. monofazata pentru serviciile interne;
- modul de protecţie la supratensiuni atmosferice şi de comutaţie;

Pentru iluminatul staţiei de pompare se va utiliza o lampă cu LED, 30 W, 3500 lm, 4000 K, 230 Vc.a., IP65, IK08.

Instalaţii tehnologice

Se vor prevedea două linii separate de măsurare a debitului şi de injecţie a hipocloritului.

Fiecare linie va fi prevăzută cu următoarele echipamente:

- robinet de izolare la intrare;
- debitmetru (cu tronsoanele amonte şi aval necesare);
- sistem de analiză clor rezidual;
- sistem de dozare hipoclorit;
- robinet acţionat electric la ieşirea liniei.

Liniile de măsură se vor realiza utilizând conducte din oţel inoxidabil.

Caracteristici staţii de clorinare:

container: 6000 x 2400 x 2700 mm;

- linia 1:

- diametru intrare: Dn150 (PEHD De180);
- diametru ieşire: Dn150 (PEHD De180);
- debitmetru: Dn150;

- linia 2:
  - diametru intrare: Dn250 (PEHD De250);
  - diametru ieşire: Dn250 (PEHD De250);
  - debitmetru: Dn200;

Măsurarea debitelor

Caracteristici debitmetru:
- principiul de măsurare: inducţie electromagnetică;
- conectarea la proces: flanşa EN 1092-1;
- grad de protecţie: IP 67;
- carcasă şi flanşe: oţel carbon, acoperire anticoroziune cu vopsea epoxidică (min. 150 µm);
- ţeavă de măsură: inox AISI 304/1.4301;
- electrozi: hastelloy C;
- transmiter, montaj compact, precizie de măsurare ± 0,4 %, o ieşire analogică 4÷20mA, o ieşire digitală, o ieşire pe releu, display retroiluminat cu text alfanumeric 3x20 caractere, IP67, alimentare 115-230 Vc.a., temperatura de operare -20÷50 °C.

Corecţia concentraţiei de clor în apă

În staţia de clorinare, pe fiecare linie, se va face o corecţie a concentratiei de clor din apă în funcţie de concentraţia de clor din conducta de aspiraţie şi debitul vehiculat.
Caracteristici sistem analiză clor rezidual:
- alimentare: 220 Vc.a.;
- sistem preasamblat al unităţii de control şi al celulei de măsură (instalare pe perete);
- sistem de prelevare a probei de apă pentru analiza concentraţiei de clor rezidual;
- măsurarea şi controlul continuu a concentraţiei clorului rezidual, cu posibilitatea de compensare a temperaturii;
- gama de măsură a clorului rezidual: 0÷2 mg/l;
- senzor de temperatura a apei;
- presiune maxima de lucru: 3 bar.

Sistem de dozare: se va instala câte un sistem de dozare pe fiecare conductă de refulare.
Componenţă sistem de dozare:
- pompă dozatoare digitală, cu funcţionare automată în funcţie de debitul apei pompate şi de valoarea clorului rezidual masurată de instalaţia de analiză;
- dozatorul va avea intrări şi ieşiri digitale (pentru comandă şi citire stare pompă dozatoare), precum şi intrări şi ieşiri analogice, 4÷20mA (pentru prescrierea referinţei, respectiv, citirea reacţiei dozatorului de clor);
- rezervor de stocare soluţie de hipoclorit, 200 litri, material PE, prevăzut cu robinet de golire;
- agitator manual;
- linie de aspiraţie rigidă, cu: sorb aspiraţie, clapetă de sens şi senzor de rezervor gol;
- supapă multifuncţională, pentru: prevenirea sifonării, menţinerea constantă a contrapresiunii şi reducerea manuală a presiunii;
- furtun dozare hipoclorit;
- unitate de injecţie hipoclorit, cu supapă pentru prevenirea cristalizării şi blocării dozării hipocloritului în apa care are un conţinut ridicat de carbonaţi.

Caracteristici pompă dozatoare:

- alimentare: 220Vc.a.;
- debite maxim și minim calculate în funcție de particularitatea stației de clorinare;
- presiune de lucru: max. 16 bari;
- meniu de lucru în limba română;
- afisaj LCD, cu iluminarea fundalului în culori specifice stării de funcționare;
- sistem de auto-dezaerare;
- sistem de auto-adaptare;
- senzor de monitorizare a presiunii;
- afisare informații de service;
- relee de de ieșire semnal (programabile);
- suport (placă) de montaj inclusă;
- modul de interfațare comunicație SCADA (Modbus-RTU TCP, Profinet).

Stație de clorinare containerizată cu un sistem de clorinare

Container

Stația de clorinare va fi amplasată într-un container, cu o singură încăpere, cu dimensiunile din planșă, cu stâlpi de susținere profilați la rece din tablă zincată cu grosimea de 2 mm, pereți din panou sandwich poliuretan tip C 1 RAL 9002 (garantat 10 ani), acoperiș cu rezistență portantă de 250 kg/m^2, format din structură metalică zincată profilată la rece, grunduită reactiv și vopsită, tablă zincată dublu fălțuită, grosime 0,5 mm, folie anticondens, vată minerală grosime 100 mm norma C1 ISOVER®, tavan PVC RAL 9002.

Accesul în container se va realiza printr-o ușă laterală cu dimensiunile 900x2000 mm, PVC/metalică.

Instalații climatizare

Containerul va fi încălzit utilizând un convector electric termostatat cu puterea de 2000 W, cu montare pe perete.

Pentru prevenirea apariției condensului, va fi prevăzut un ventilator axial, cu montare murală, cu funcționare temporizată, cu debitul de 1300 m^3/h, 230 Va.c., 60 W. Grila de admisie a aerului în zona tehnologică va fi montată în jumătatea inferioară a ușii de acces sau pe peretele opus peretelui pe care se montează ventilatorul.

Instalații electrice

Stația de clorinare va fi prevăzută cu un singur tablou electric și de automatizare și control al procesului, cu dimensiunile de 800 x 260 x 600 mm.

Tabloul electric va fi prevăzut cu:

- inversor manual de sursă, pentru posibilitatea conectării unui grup generator portabil (în sursa 1 se va conecta alimentarea din rețeaua electrică, iar în sursa 2 se va conecta o fișă industrială monofazată (230 V), montată aparent pe peretele exterior al tabloului electric);
- echipamente pentru protecția și comanda dozatoarelor de hipoclorit;
- echipamente de protecție pentru debitmetre;
- siguranțe automate diferențiale pentru circuitele de iluminat și încălzire;
- priză 230 Vc.a. monofazata pentru serviciile interne;
- modul de protecție la supratensiuni atmosferice și de comutație;

Pentru iluminatul stației de pompare se va utiliza o lampă cu LED, 30 W, 3500 lm, 4000 K, 230 Vc.a., IP65, IK08.

Instalații tehnologice

Se va instala o linie de măsurare a debitului și de injecție a hipocloritului, care va fi prevăzută cu următoarele echipamente:

- robinet de izolare la intrare;
- debitmetru (cu tronsoanele amonte și aval necesare);
- sistem de analiză clor rezidual;
- sistem de dozare hipoclorit;
- robinet acționat electric la ieșirea liniei.

Linia de măsură se va realiza utilizând conducte din oțel inoxidabil.

Caracteristici stații de clorinare:

- stația de clorinare 1:
  - dimensiuni container: 3000 x 2400 x 2700;
  - diametru intrare: Dn100 (PEHD De110);
  - diametru ieșire: Dn100 (PEHD De110);
  - debitmetru: Dn100;
- stația de clorinare 2:
  - dimensiuni container: 3000 x 2400 x 2700;
  - diametru intrare: Dn80 (PEHD De90);
  - diametru ieșire: Dn80 (PEHD De90);
  - debitmetru: Dn80;
- stația de clorinare 3:
  - dimensiuni container: 3000 x 2400 x 2700;
  - diametru intrare: Dn65 (PEHD De75);
  - diametru ieșire: Dn65 (PEHD De75);
  - debitmetru: Dn50;
- stația de clorinare 4:
  - dimensiuni container: 3000 x 2400 x 2700;
  - diametru intrare: Dn65 (PEHD De75);
  - diametru ieșire: Dn65 (PEHD De75);
  - debitmetru: Dn50.

Măsurarea debitelor

Caracteristici debitmetru:

- principiul de măsurare: inducție electromagnetică;
- conectarea la proces: flanșa EN 1092-1;
- grad de protecție: IP 67;
- carcasă și flanșe: oțel carbon, acoperire anticoroziune cu vopsea epoxidică (min. 150 µm);
- țeavă de măsură: inox AISI 304/1.4301;
- electrozi: hastelloy C;
- transmiter, montaj compact, precizie de măsurare ± 0,4 %, o ieșire analogică 4÷20mA, o ieșire digitală, o ieșire pe releu, display retroiluminat cu text alfanumeric 3x20 caractere, IP67, alimentare 115-230 Vc.a., temperatura de operare -20÷50 °C.

Corecția concentrației de clor în apă

În stația de clorinare se va face o corecție a concentrației de clor din apă în funcție de concentrația de clor din conducta de aspirație și debitul vehiculat.

Caracteristici sistem analiză clor rezidual:

- alimentare: 220 Vc.a.;
- sistem preasamblat al unității de control și al celulei de măsură (instalare pe perete);
- sistem de prelevare a probei de apă pentru analiza concentrației de clor rezidual;

- măsurarea și controlul continuu a concentrației clorului rezidual, cu posibilitatea de compensare a temperaturii;
- gama de măsură a clorului rezidual: 0÷2 mg/l;
- senzor de temperatura a apei;
- presiune maxima de lucru: 3 bar.

Sistem de dozare: se va instala un sistem de dozare pe conducta de refulare.

Componență sistem de dozare:
- pompă dozatoare digitală, cu funcționare automată în funcție de debitul apei pompate și de valoarea clorului rezidual măsurată de instalația de analiză;
- dozatorul va avea intrări și ieșiri digitale (pentru comandă și citire stare pompă dozatoare), precum și intrări și ieșiri analogice, 4÷20mA (pentru prescrierea referinței, respectiv, citirea reacției dozatorului de clor);
- rezervor de stocare soluție de hipoclorit, 200 litri, material PE, prevăzut cu robinet de golire;
- agitator manual;
- linie de aspirație rigidă, cu: sorb aspirație, clapetă de sens și senzor de rezervor gol;
- supapă multifuncțională, pentru: prevenirea sifonării, menținerea constantă a contrapresiunii și reducerea manuală a presiunii;
- furtun dozare hipoclorit;
- unitate de injecție hipoclorit, cu supapă pentru prevenirea cristalizării și blocării dozării hipocloritului în apa care are un conținut ridicat de carbonați.

Caracteristici pompă dozatoare:
- alimentare: 220 Vc.a.;
- debite maxim și minim calculate în funcție de particularitatea stației de clorinare;
- presiune de lucru: max. 16 bari;
- meniu de lucru în limba română;
- afișaj LCD, cu iluminarea fundalului în culori specifice stării de funcționare;
- sistem de auto-dezaerare;
- sistem de auto-adaptare;
- senzor de monitorizare a presiunii;
- afișare informații de service;
- relee de ieșire semnal (programabile);
- suport (placă) de montaj inclusă;
- modul de interfațare comunicație SCADA (Modbus-RTU TCP, Profinet).

2 Elemente componente primare

Stație de clorinare containerizată cu două sisteme de clorinare

Echipamente de automatizare

Pentru monitorizarea/controlul parametrilor procesului tehnologic, precum și pentru comunicația cu sistemul SCADA, în tabloul electric și de automatizare se va prevedea un PLC cu router GSM/GPRS integrat. Pe ușa tabloului electric va fi amplasat un afișaj pentru urmărirea parametrilor procesului de către operator, precum și pentru programarea valorilor de referință.

Caracteristicile PLC-ului:
- procesor: 64 MHz;
- memorie program: 512 kByte;
- memorie nevolatilă retentivă: 48 kByte (NVRAM);

- memorie de stocare: 512 kByte;
- ceas de timp real;
- alimentare: 24 Vc.c. (19,2÷30 Vc.c.);
- consumul tipic de curent: 210 mA;
- current maxim consumat: 860 mA (360 mA – comunicație + 500 mA – alimentare I/O analogice);
- cantitatea de date de proces suportată: max. 4096 Bit (INTERBUS);
- numărul de dispozitive suportate: max. 128;
- numărul de dispozitive locale care pot fi conectate: max. 63;
- limbaje de programare conform IEC 61631-3 (LD, FBD, ST, IL);
- opțiuni comunicare: Ethernet (10/100 Mbit/s), RS485, RS422;
- router GSM/GPRS integrat, port card SIM, conexiune antenă SMA;
- grad de protecție: IP20;
- temperatură ambientală operare/transport-depozitare: -25 ÷ +55 °C / -25 ÷ +85 °C;
- umiditate permisă operare/transport-depozitare: 10 ÷ 95 %;
- presiunea aerului: 70 ÷ 106 kPa (max. 3000 m deasupra nivelului mării);
- port pentru card SD (max. 2 GB);
- webserver integrat.
- 16 intrări digitale (conectare 2, 3, 4 conductoare, tip NPN/PNP EN 61131-2) și 4 ieșiri digitale (conectare 2, 3, 4 conductoare, consum maxim pe canal 500 mA) integrate.

Modul cu 8 intrări digitale:
- alimentare: 19,2÷30 Vc.c.);
- consum curent: max. 30 mA;
- consum putere: max. 0,25 W;
- LED-uri semnalizare stare intrări;
- timp tipic de răspuns: 1 ms;
- tensiune de intrare pentru semnal „0”: -3 ÷ +5 Vc.c.;
- tensiune de intrare pentru semnal „1”: 11 ÷ 30 Vc.c.

Modul cu 8 ieșiri digitale:
- sarcină inductivă nominală: 12 VA (1,2 H; 50 Ω);
- sarcină rezistivă nominală: 12 W (48 Ω);
- curentul maxim de ieșire per canal: 500 mA;
- tensiune de ieșire: 24 Vc.c.;
- protecție la suprasarcină și scurtcircuit;
- tensiune de alimentare: 24 Vc.c. (19,2÷30 Vc.c.);
- consum de curent: max. 45 mA;
- consum de putere: max. 0,34 W;
- LED-uri semnalizare stare ieșiri.

Modul cu 4 intrări analogice în curent (0/4 ÷ 20 mA):
- timp de conversie analogic/digital: max. 6,5 µs;
- rezolutie analogic/digital: 12 bit;
- consum curent: 55 mA;

Panou operator:
- diagonală: minim 17,8 cm/7“;
- rezoluție: 800 x 480 pixeli (WVGA);
- tehnologie touch: rezistiv;
- iluminare fundal: LED;

- MTBF: 20000 h;
- număr culori: 262144
- procesor: 454 MHz;
- sistem de operare: MS Windows® CE 6.0;
- memorie RAM: 128 MB SDRAM;
- interfață: 1 x Ethernet (10/100 Mbps, RJ45), 2 x RS-232/422/485, 1 x USB tip A, 1 x USB tip B, 1 x SD;
- tensiune de alimentare: 24 Vc.c. ±15%;
- current consumat: 0,4 A;
- grad de protecție: IP 66 (față), IP 20 (spate);
- temperatura ambientală operare/depozitare-transport: 0 ÷ 50 °C / -20 ÷ +85 °C;
- umiditate permisă operare/transport-depozitare: 10 ÷ 95 %.

Sursa cu UPS integrat:

- tensiune de intrare: 85 ÷ 264 Vc.a. / 100 ÷ 350 Vc.a.;
- consum current: 1,8 A la 230 Vc.a. / 1,8 A la 120 Vc.a.;
- factor de putere: aprox. 0,5
- current limită de pornire în sarcină/I^2t: < 1,3 A^2s;
- timp tipic de răspuns: 150 ms (230 Vc.a.) / 200 ms (120 Vc.a.);
- circuit de protecție: varistor integrat pentru protecția la regim tranzitoriu;
- siguranță intrare: 6,3 A, integrate;
- tensiune nominală de ieșire: 24 Vc.c.;
- current nominal de ieșire: 5 A (-25 ÷ 55°C);
- current maxim de ieșire: 6 A;
- scădere current de ieșire cu temperatura: 2,5%/K pentru 55 ÷ 70 °C;
- eficiență: > 88 % (230 Vc.a., alimentare din rețea); > 86 % (120 Vc.a., alimentare din rețea); > 86 % (alimentare din baterie);
- component alternative în curentul de ieșire: < 10 mVPP;
- conectare în paralel: da, 2 dispozitive;
- baterii externe acceptate: 1,3 Ah / 3,4 Ah / 7,2 Ah / 12 Ah;
- caracteristica de încărcare: curba caracteristica I/U;
- curent de încărcare: 0,2 A ÷ 1,5 A (implicit 1,0 A);
- compensarea temperaturii: 0 ÷ 200 mV/K (implicit 42 mV/K);
- interval verificare baterie: 4 h ÷ 200 h (implicit 12 h);
- montaj: șină DIN;
- MTBF (IEC 61709, SN 29500): > 596000 h (40 °C);
- compatibilitate electromagnetică: în conformitate cu directive EMC 2004/108/EC;
- emisie zgomot: EN 55011 (EN 55022);
- directivă joasă tensiune: 2006/95/EC;
- clasa de protecție: I;
- grad de protecție: IP20;
- temperatura ambientală operare: -25 ÷ +70 °C;
- umiditate permisă operare: 95 % (la 20 °C, fără condens).

Contor de energie

- temperatura ambientală operare: -10 ÷ +55 °C;
- umiditate permisă operare: 80 % (până la 31 °C);
- grad de protecție: IP52 (față), IP30 (spate);
- afișaj: LCD, iluminat;

- tensiune de alimentare: 110 ÷ 400 Vc.a. ± 10 %;
- putere nominală consumată: 5 VA;
- putere maximă consumată cu toate modulele de extensie: 10 VA;
- conformitate: CE;
- principiul de măsurare: valoare R.M.S;
- armonici: până la armonica 51;
- precizie: 0,2%;
- domeniul de măsură: 50 ÷ 500 Vc.a. (fază/fază), 28 ÷ 289 Vc.a. (fază/neutru);
- frecvență: 50 ÷ 60 Hz;
- măsurarea se realizează cu transformatoare externe;
- energie activă (IEC 62053-22): clasa 0,5 S;
- putere reactivă (IEC 62053-23): clasa 2;
- modul de comunicație: RS 485.

Comunicare cu dispeceratul SCADA

Tabloul electric și de automatizare va prelua datele din stația de pompare și va comunica prin GPRS (protocol Modbus TCP) cu dispeceratul SCADA.

Date transmise in dispeceratul SCADA vor fi, fără a se limita la această listă, urmatoarele:

- starea de funcționare a analizoarelor de clor și a sistemelor de dozare;
- parametrii electrici ai stației de clorinare;
- debitele instantanee și totalizatoarele de pe cele două linii de clorinare;
- prezența tensiunii de alimentare;
- starea comunicației GPRS;
- regim stație de clorinare;
- cantitate de clor/puls programată;
- concentrație de clor programată;
- alarmă nivel scăzut hipoclorit în rezervor;
- alarmă sisteme clorinare;
- volum de clor dozat;
- număr de porniri ale pompelor dozatoare de clor;
- orele de funcționare ale pompelor dozatoare de clor;
- temperatura apei.

Stație de clorinare containerizată cu un sistem de clorinare

Echipamente de automatizare

Pentru monitorizarea/controlul parametrilor procesului tehnologic, precum și pentru comunicația cu sistemul SCADA, în tabloul electric și de automatizare se va prevedea un PLC cu router GSM/GPRS integrat. Pe ușa tabloului electric va fi amplasat un afișaj pentru urmărirea parametrilor procesului de către operator, precum și pentru programarea valorilor de referință.

Caracteristicile PLC-ului:

- procesor: 64 MHz;
- memorie program: 512 kByte;
- memorie nevolatilă retentivă: 48 kByte (NVRAM);
- memorie de stocare: 512 kByte;
- ceas de timp real;
- alimentare: 24 Vc.c. (19,2÷30 Vc.c.);
- consumul tipic de curent: 210 mA;

- curent maxim consumat: 860 mA (360 mA – comunicație + 500 mA – alimentare I/O analogice);
- cantitatea de date de proces suportată: max. 4096 Bit (INTERBUS);
- numărul de dispozitive suportate: max. 128;
- numărul de dispozitive locale care pot fi conectate: max. 63;
- limbaje de programare conform IEC 61631-3 (LD, FBD, ST, IL);
- opțiuni comunicare: Ethernet (10/100 Mbit/s), RS485, RS422;
- router GSM/GPRS integrat, port card SIM, conexiune antenă SMA;
- grad de protecție: IP20;
- temperatură ambientală operare/transport-depozitare: -25 ÷ +55 °C / -25 ÷ +85 °C;
- umiditate permisă operare/transport-depozitare: 10 ÷ 95 %;
- presiunea aerului: 70 ÷ 106 kPa (max. 3000 m deasupra nivelului mării);
- port pentru card SD (max. 2 GB);
- webserver integrat.
- 16 intrări digitale (conectare 2, 3, 4 conductoare, tip NPN/PNP EN 61131-2) și 4 ieșiri digitale (conectare 2, 3, 4 conductoare, consum maxim pe canal 500 mA) integrate.

Modul cu 8 intrări digitale:
- alimentare: 19,2÷30 Vc.c.); - consum curent: max. 30 mA;
- consum putere: max. 0,25 W; - LED-uri semnalizare stare intrări;
- timp tipic de răspuns: 1 ms; - tensiune de intrare pentru semnal „0”: -3 ÷ +5 Vc.c.;
- tensiune de intrare pentru semnal „1”: 11 ÷ 30 Vc.c.

Modul cu 8 ieșiri digitale:
- sarcină inductivă nominală: 12 VA (1,2 H; 50 Ω);
- sarcină rezistivă nominală: 12 W (48 Ω); - curentul maxim de ieșire per canal: 500 mA;
- tensiune de ieșire: 24 Vc.c.; - protecție la suprasarcină și scurtcircuit;
- tensiune de alimentare: 24 Vc.c. (19,2÷30 Vc.c.);
- consum de curent: max. 45 mA; - consum de putere: max. 0,34 W;
- LED-uri semnalizare stare ieșiri.

Modul cu 4 intrări analogice în curent (0/4 ÷ 20 mA):
- timp de conversie analogic/digital: max. 6,5 µs;
- rezoluție analogic/digital: 12 bit; - consum curent: 55 mA;

Panou operator:
- diagonală: minim 17,8 cm/7“; - rezoluție: 800 x 480 pixeli (WVGA);
- tehnologie touch: rezistiv; - iluminare fundal: LED;
- MTBF: 20000 h; - număr culori: 262144
- procesor: 454 MHz; - sistem de operare: MS Windows® CE 6.0;
- memorie RAM: 128 MB SDRAM;
- interfață: 1 x Ethernet (10/100 Mbps, RJ45), 2 x RS-232/422/485, 1 x USB tip A, 1 x USB tip B, 1 x SD;
- tensiune de alimentare: 24 Vc.c. ±15%; - curent consumat: 0,4 A;
- grad de protecție: IP 66 (față), IP 20 (spate);
- temperatura ambientală operare/depozitare-transport: 0 ÷ 50 °C / -20 ÷ +85 °C;
- umiditate permisă operare/transport-depozitare: 10 ÷ 95 %.

Sursa cu UPS integrat:
- tensiune de intrare: 85 ÷ 264 Vc.a. / 100 ÷ 350 Vc.a.;
- consum curent: 1,8 A la 230 Vc.a. / 1,8 A la 120 Vc.a.;
- factor de putere: aprox. 0,5 - curent limită de pornire în sarcină/I^2t: < 1,3 A^2s;

- timp tipic de răspuns: 150 ms (230 Vc.a.) / 200 ms (120 Vc.a.);
- circuit de protecție: varistor integrat pentru protecția la regim tranzitoriu;
- siguranță intrare: 6,3 A, integrate; - tensiune nominală de ieșire: 24 Vc.c.;
- curent nominal de ieșire: 5 A (-25 ÷ 55°C);
- curent maxim de ieșire: 6 A;
- scădere curent de ieșire cu temperatura: 2,5%/K pentru 55 ÷ 70 °C;
- eficiență: > 88 % (230 Vc.a., alimentare din rețea); > 86 % (120 Vc.a., alimentare din rețea); > 86 % (alimentare din baterie);
- component alternative în curentul de ieșire: < 10 mVPP;
- conectare în paralel: da, 2 dispozitive;
- baterii externe acceptate: 1,3 Ah / 3,4 Ah / 7,2 Ah / 12 Ah;
- caracteristica de încărcare: curba caracteristica I/U;
- curent de încărcare: 0,2 A ÷ 1,5 A (implicit 1,0 A);
- compensarea temperaturii: 0 ÷ 200 mV/K (implicit 42 mV/K);
- interval verificare baterie: 4 h ÷ 200 h (implicit 12 h);
- montaj: șină DIN; - MTBF (IEC 61709, SN 29500): > 596000 h (40 °C);
- compatibilitate electromagnetică: în conformitate cu directive EMC 2004/108/EC;
- emisie zgomot: EN 55011 (EN 55022);
- directivă joasă tensiune: 2006/95/EC; - clasa de protecție: I;
- grad de protecție: IP20; - temperatura ambientală operare: -25 ÷ +70 °C;
- umiditate permisă operare: 95 % (la 20 °C, fără condens).

Contor de energie
- temperatura ambientală operare: -10 ÷ +55 °C;
- umiditate permisă operare: 80 % (până la 31 °C);
- grad de protecție: IP52 (față), IP30 (spate);
- afișaj: LCD, iluminat;
- tensiune de alimentare: 110 ÷ 400 Vc.a. ± 10 %;
- putere nominală consumată: 5 VA;
- putere maximă consumată cu toate modulele de extensie: 10 VA;
- conformitate: CE; - principiul de măsurare: valoare R.M.S;
- armonici: până la armonica 51; - precizie: 0,2%;
- domeniul de măsură: 50 ÷ 500 Vc.a. (fază/fază), 28 ÷ 289 Vc.a. (fază/neutru);
- frecvență: 50 ÷ 60 Hz; - măsurarea se realizează cu transformatoare externe;
- energie activă (IEC 62053-22): clasa 0,5 S; - putere reactivă (IEC 62053-23): clasa 2;
- modul de comunicație: RS 485.

Comunicare cu dispeceratul SCADA

Tabloul electric și de automatizare va prelua datele din stația de pompare și va comunica prin GPRS (protocol Modbus TCP) cu dispeceratul SCADA.

Date transmise in dispeceratul SCADA vor fi, fără a se limita la această listă, următoarele:
- starea de funcționare a analizorului de clor și a sistemului de dozare;
- parametrii electrici ai stației de clorinare;
- debitul instantaneu și totalizatorul de pe linia de clorinare;
- prezența tensiunii de alimentare;
- starea comunicației GPRS;
- regim stație de clorinare;
- cantitate de clor/puls programată;

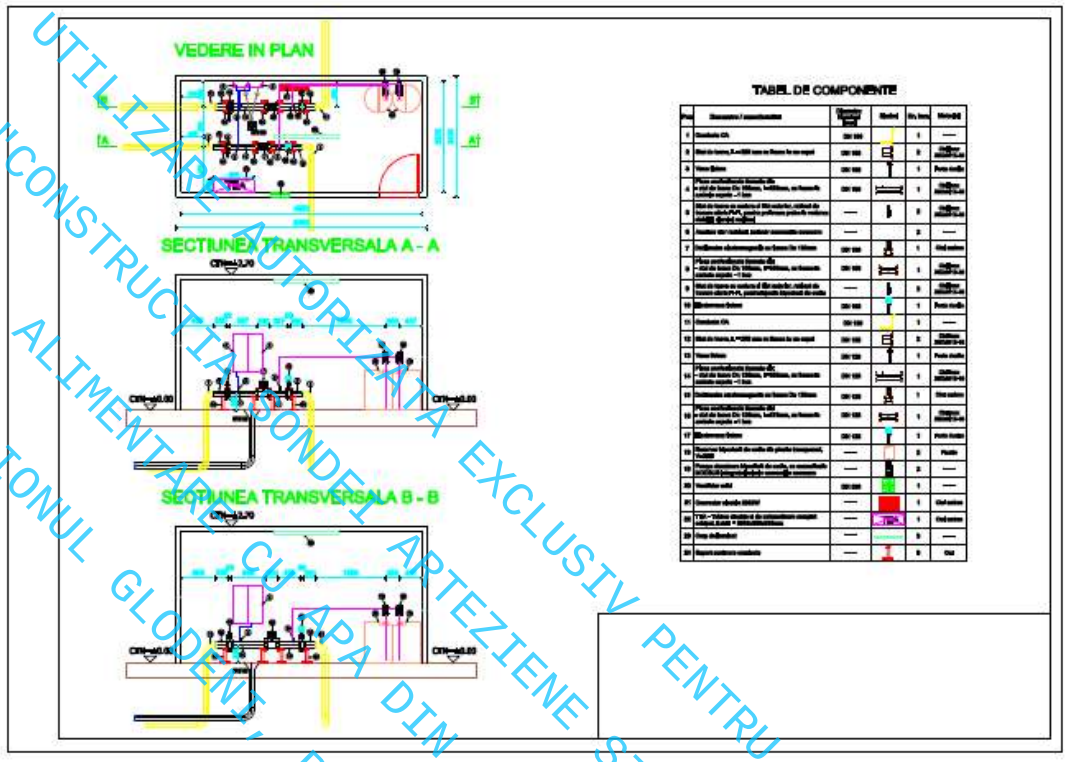
- concentrație de clor programată;
- alarmă nivel scăzut hipoclorit în rezervor;
- alarmă sisteme clorinare;
- volum de clor dozat;
- număr de porniri ale pompei dozatoare de clor;
- orele de funcționare ale pompei dozatoare de clor;
- temperatura apei.

3 Elemente

Dimensiuni și racorduri:

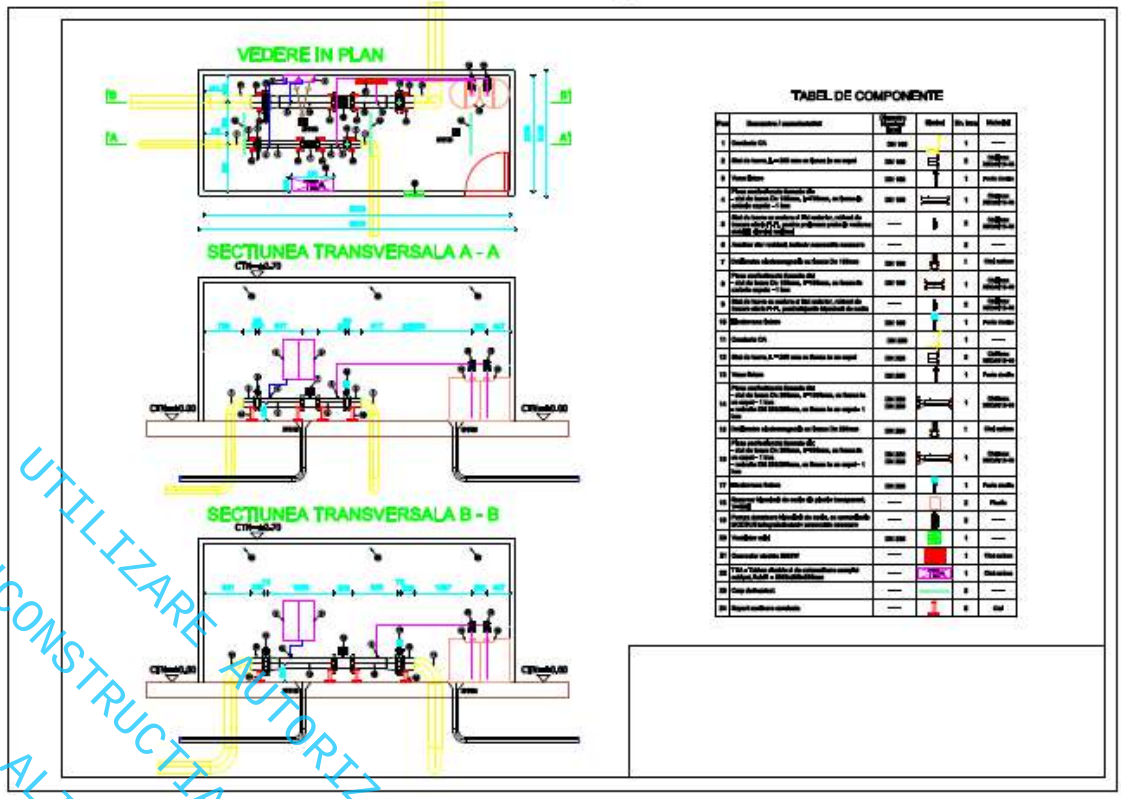
IN/OUT – Dn 100 mm (PEHD De 110 mm)

IN/OUT – Dn 125 mm (PEHD De 140 mm)



IN/OUT – Dn 150 mm (PEHD De 180 mm)

IN/OUT – Dn 250 mm (PEHD De 250 mm)



4 Fabricare

Fabricarea produselor se face pe baza Normelor tehnice ale producătorului și este însoțită de un autocontrol intern și control extern periodic asigurat de instituții autorizate. Controlul fabricației produselor se realizează conform condițiilor de control și calitate începând cu materia primă, care trebuie să fie însoțită de buletine de analiză respective, după cum urmează:

- controlul calității materiei prime;
- controlul calității produsului în procesul de fabricare;
- controlul produsului finit.

5 Punerea în operă

Punerea în operă a produselor evaluate se realizează în conformitate cu recomandările, instrucțiunile tehnice producătorului și cerințelor prezentei evaluări tehnice.

B. REFERINŢE

Utilizări pentru instalații de alimentare cu apă în țările UE, România.

C. REZULTATELE EXPERIMENTALE

1. Aviz sanitar Nr. P-3339/2019 din 04.11.2019 eliberat de Agenția Națională pentru Sănătate publică a Republicii Moldova;

2. Încheierea de securitate la incendiu nu se aplică pentru Instalația containerizată de clorinare și electroliză.

Lista documentelor normative utilizate la elaborarea evaluării tehnice

1 NCM E.03.02-2014 Protecția împotriva incendiilor a clădirilor și instalațiilor

2 NCM A.08.02:2014 Securitatea și sănătatea muncii în construcții

3 CP G.03.02-2006 Proiectarea și montarea conductelor sistemelor de alimentare cu apă și canalizare din materiale de polimeri

4 СНиП 2.04.02-84 Водоснабжение. Наружные сети и сооружения

5 GOST 12.3.006-75 Система стандартов безопасности труда. Эксплуатация водопроводных и канализационных сооружений и сетей. Общие требования безопасности

6 GOST 25150-82 Канализация. Термины и определения

7 SM SR EN ISO 9000:2016 Sisteme de management al calității. Principii fundamentale și vocabular

8 SM SR EN ISO 9001:2015 Sisteme de management al calității. Cerințe

9 Legea nr. 721-XIII din 02.02.1996 privind calitatea în construcții

10 Hotărîrea Guvernului Nr.913 din 25 iulie 2016 privind aprobarea Reglementării tehnice cu privire la cerințele minime pentru comercializarea produselor pentru construcții

11 Ordinul Ministrului Economiei și infrastructurii Nr.379 din 31 iulie 2018 Cu privire la aprobarea Listei standardelor conexe la produsele de construcții pentru utilizare în perioada de tranziție la standardele armonizate

12 Ordinul Ministrului Economiei și infrastructurii Nr.380 din 31 iulie 2018 Cu privire la aprobarea Listei standardelor armonizate la Reglementarea tehnică cu privire la cerințele minime pentru comercializarea produselor pentru construcții

13 Ordinul Ministrului Economiei și infrastructurii Nr.381 din 31 iulie 2018 Cu privire la aprobarea Regulamentului privind procedura generală de evaluare a conformității produselor pentru construcții, utilizată în perioada de tranzitie la standardele armonizate, conform Hotărîrii Guvernului Nr.913 din 25 iulie 2016 privind aprobarea Reglementării tehnice cu privire la cerințele minime pentru comercializarea produselor pentru construcții

14 Codul muncii al Republicii Moldova Nr. 154 din 28.03.2003.

Extras din procesul verbal al şedinţei de deliberare al grupei specializate

Procesul verbal nr. 09 din 16 decembrie 2019

Grupa specializată nr. 11 alcătuită din următorii specialişti:

- preşedinte:	ing. A. Belousova
- membrii:	ing. E. Proaspăt
	ing. V. Mursa

întrunită la data de 16.12.2019 pentru a analiza documentaţia prezentată de solicitant referitor la produsul "INSTALAŢIE CONTAINERIZATĂ DE CLORINARE ŞI ELECTROLIZĂ" fabricată de firma "UT4FB CONTROL" S.R.L., str. Islaz Nr.41, 700182 Iaşi, judeţul Iaşi, Romania, Tel.: +40 374624200, Fax +40 371 605 204 împreună cu întreg dosar de date şi documentaţii tehnice pus la dispoziţie de beneficiar decide:

- aprobarea eliberării Evaluării tehnice Nr. 02/11-049:2019 pentru "INSTALAŢIE CONTAINERIZATĂ DE CLORINARE ŞI ELECTROLIZĂ" cu domeniul de utilizare: pentru instalaţii de alimentare cu apă.
- se recomandă furnizorului "DEMATEK WATER MANAGEMENT" SRL, str. Preciziei Nr. 6M, sector 6, Bucureşti, România, Tel./Fax +40 371 475 962 să realizeze cel puţin o dată în an încercări periodice şi suplimentare la cererea grupei specializate conform graficului de audit a produselor evaluate pentru verificarea calităţii conform cerinţelor Legii nr. 721-XIII din 02.02.1996 privind calitatea în construcţii.

Raportorul Grupei specializate nr. 11 E. Proaspăt

CONCERNUL REPUBLICAN AL INDUSTRIEI MATERIALELOR DE CONSTRUCŢII "INMACOM"

SOCITATEA CU RĂSPUNDERE LIMITATĂ INSTITUTUL DE CERCETĂRI ŞTIINŢIFICE ŞI PROIECTARE ÎN DOMENIUL MATERIALELOR DE CONSTRUCŢII

РЕСПУБЛИКАНСКИЙ КОНЦЕРН ПРОМЫШЛЕННОСТИ СТРОИТЕЛЬНЫХ МАТЕРИАЛОВ "ИНМАКОМ"

ОБЩЕСТВО С ОГРАНИЧЕНОЙ ОТВЕТСТВЕНОСТЬЮ НАУЧНО-ИССЛЕДОВАТЕЛЬСКИЙ И ПРОЕКТНО-КОНСТРУКТОРСКИЙ ИНСТИТУТ СТРОИТЕЛЬНЫХ МАТЕРИАЛОВ

"I N M A C O M P R O I E C T"

www.inmacomproiect.md

2015, Republica Moldova, mun. Chişinau, str. Sarmizegetusa nr.15, tel, fax 521-130, tel.52-20-86

2015, Республика Молдова, мун. Кишинэу, ул. Сармизежетуса, 15, тел, факс 521-130,52-20-86

____14.04.2020___nr.__01/09_____
la nr. _____din _____

"DEMATEK WATER MANAGEMENT" SRL

Vă înaintăm Evaluarea tehnică nr. 02/11-049:2019 care a fost avizată în data de 16 decembrie 2019 la ICŞP "INMACOMPROIECT" SRL. Avizul tehnic aferent evaluării tehnice îl vom transmite după ce va fi semnat la Ministerul Economiei și Infrastructurii al Republicii Moldova.

Director A. Belousova

Ex. E. Proaspăt
+373 22 52 20 86