

Certificate DE13/81841218.00

The management system of

Grundfos Holding A/S

Poul Due Jensens Vej 7
Bjerringbro, 8850, Denmark

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities

Development, manufacturing, service, repair, sales and distribution of components, pumps, electrical motors, pump systems, equipment and services in connection with movement of liquids

This certificate is valid from 14 February 2018 until 14 February 2021 and remains valid subject to satisfactory surveillance audits.
Re certification audit due before 31 December 2020
Issue 7. Certified since 17 June 2011

This is a multi-site certification.
Additional site details are listed on the subsequent page.

Authorised by



SGS United Kingdom Ltd
Rossmore Business Park Ellesmere Port Cheshire CH65 3EN UK
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Grundfos Holding A/S

ISO 9001:2015

Issue 7



Production sites

Grundfos A/S

Poul Due Jensens Vej 7, Bjerringbro, 8850, Denmark

Grundfos Environment Finland Oy

CSU & Admin Trukkikuja 1, Vantaa, 01360, Finland

Grundfos Environment Finland Oy

Manufacturing Yrittäjätie 6 & 10, Joutsa, 19650, Finland

Pompes Grundfos S.A.

Route de Faulquemont, Longeville-Les-Saint Avold, 57740, France

Grundfos Manufacturing Ltd.

Ferryboat Lane Castletown, Sunderland, SR5 3JL, United Kingdom

Grundfos Pumps Manufacturing Corp.

5900 E. Shields Avenue, Fresno CA, 93727, United States

Grundfos Pumps Manufacturing Corp.

2200 Hangar Place, Allentown PA, 18109, United States

Grundfos Pumps (Suzhou) Ltd.

72 Qingqiu Street, Suzhou Industrial Park
215126 & Qingqiu Road 116, Suzhou Industrial Park, Suzhou, 215126, China

Grundfos Pumpenfabrik GmbH

Willy Peiz Straße 1-5, Wahlstedt, 23812, Germany

Grundfos Water Treatment GmbH

Reetzstraße 85, Pfinztal, 76327, Germany

Grundfos Hungary Manufacturing Ltd.

Búzavirág u. 14, Tatahánya, 2800, Hungary

Grundfos Hungary Manufacturing Ltd.

Sóstó Ipari Park, Holland fasor 15, Székesfehérvár, 8000, Hungary

Grundfos Istra OOO (Grundfos Manufacturing Russia)

Leshkovo 188, Istra Region, Moscow Oblast, 143581, Russia

Grundfos Handels AG Taiwan Branch

14, Minyou Road Tongluo Township, Miaoli County, 36646,
Taiwan - Republic of China

Grundfos Srbija d.o.o. (Manufacturing)

Obilazni put - Sever 21, Indjija, 22320, Serbia

Bombas Grundfos de Mexico Manufacturing S.A. de C.V.

Circuito Exportación 272. Parque Industrial Tres Naciones 2da Etapa
San Luis Potosí, 78395, Mexico



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Grundfos Holding A/S

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Business development sites

**Grundfos Holding A/S
Business Development**

Poul Due Jensens Vej 7, Bjerringbro, 8850, Denmark

**Grundfos Water Treatment GmbH
D&E Europe**

Reetzstraße 85, Pfinztal, 76327, Germany

**Grundfos (China) Holding Co., Ltd.
BD Suzhou**

**Suzhou Branch, 72 Qingqiu Street, Suzhou Industrial Park
Suzhou, 215126, China**

**Grundfos Hungary Manufacturing Ltd.
D&E Europe**

Sóstó Ipari Park, Holland fasor 15, Székesfehérvár, 8000, Hungary

**Grundfos Environment Finland Oy
D&E Europe**

Trukkikuja 1, 1036, Vantaa, Helsinki, 00101, Finland

**Grundfos Pumps India Pvt. Ltd.
D&E India**

118, Rajiv Gandhi Salai Thoraipakkam, Chennai, 600 097, India



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Grundfos Holding A/S

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Sales & service companies

Grundfos Pumps Ltd
Grovebury Road, Leighton Buzzard, LU7 4TL, United Kingdom

Grundfos Pumps Ltd
Suite 5, 2nd Floor and Suite 3, 1st Floor, Beswick House - Greenfold Way
Leigh, WN7 3XJ, United Kingdom

Grundfos Pumps Ltd
Unit 3B, Fleming Road, Kirkton Campus, Livingston, EH54 7BH,
United Kingdom

Grundfos Pumps Ltd
Aqueous One Aston Cross Business Park, Birmingham, B6 5RQ,
United Kingdom

Grundfos Watermill Limited
Gemini House - Enterprise Way, Edenbridge, TN8 6HF, United Kingdom

Grundfos (Ireland) Limited
Unit A, Merrywell Business Park - Ballymount Road Lower 12,
Dublin, Ireland

Grundfos DK A/S
Martin Bachs Vej 3, Bjerringbro, 8850, Denmark

Grundfos (Thailand) Ltd
92 Chaloe Phrakiat Rama 9 Road - Dokmai, Pravej, Bangkok, 10250,
Thailand

Grundfos PTY LTD
16 Lescelles Road - Meadowbrook, Germiston, 1609, South Africa

Bombas Grundfos de Argentina S.A
Ruta Panamericana, ramal Campana Km. 37,500 Centro Industrial Garin -
Esquina Haendel y Mozart, Garin, 1619, Argentina

Grundfos Pumps Pty. Ltd.
515 South Road Regency Park, Adelaide, 5010, Australia

Grundfos (Singapore) Pte. Ltd.
25 Jalan Tukang, SG-619264, Singapore

Grundfos BV
Eluwezoom 35, Almere, 1327 AE, Holland



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Certificate DE11/81829052.00

The management system of

Grundfos Holding A/S

Poul Due Jensens Vej 7
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has been assessed and certified as meeting the requirements of

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UTILIZAREA APOREI EXCLUSIV PENTRU PROIECTUL
"CONSTRUCTIA SI OPERAREA EXCLUSIV PENTRU PROIECTUL
ALIMENTARE CU APA DIN SATUL CAJBA",
RAIONUL GLODENI, REPUBLICA MOLDOVA

Grundfos Holding A/S

ISO 14001:2015

Issue 7

Production sites

Grundfos A/S

Poul Due Jensens Vej 7, Bjerringbro, 8850, Denmark

Grundfos Environment Finland Oy

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Grundfos Environment Finland Oy

Manufacturing Yrittäjätie 6 & 10, Joutsa, 19650, Finland

Pompes Grundfos S.A.

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Grundfos Pumps Manufacturing Corp.

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72 Qingqiu Street, Suzhou Industrial Park, 215126 & Qingqiu Road 116

Suzhou Industrial Park, Suzhou, 215126, China

Grundfos Pumpenfabrik GmbH

Willy Pelz Straße 1-5, Wahlstedt, 23812, Germany

Grundfos Water Treatment GmbH

Reetzstraße 85, Pfinztal, 76327, Germany

Grundfos Hungary Manufacturing Ltd.

Búzavirág u. 14, Tatabánya, 2800, Hungary

Grundfos Hungary Manufacturing Ltd.

Sóstó Ipari Park, Holland fasor 15, Székesfehérvár, 8000, Hungary

Grundfos Istra OOO (Grundfos Manufacturing Russia)

Leshkovo 188, Istra Region, Moscow Oblast, 143581, Russia

Grundfos Handels AG Taiwan Branch

14, Minyou Road Tongluo Township, Miaoli County, 36646, Taiwan

Republic of China

Grundfos Srbija d.o.o. (Manufacturing)

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Circuito Exportación 272. Parque Industrial Tres Naciones 2da Etapa

San Luis Potosí, 78395, Mexico



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Grundfos Holding A/S

ISO 14001:2015

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Business development sites

Grundfos Holding A/S
BD Lab

Poul Due Jensens Vej 17, Bjerringbro, 8850, Denmark

Sales & service companies

Grundfos Pumps Ltd
Grovebury Road, Leighton Buzzard, LU7 4TL, United Kingdom

Grundfos Pumps Ltd
Suite 5, 2nd Floor and Suite 3, 1st Floor
Beswick House - Greenfold Way, Leigh, WN7 3XJ, United Kingdom

Grundfos Pumps Ltd
Unit 3B, Fleming Road, Kirkton Campus
Livingston, EH54 7BH, United Kingdom

Grundfos Pumps Ltd
Aqueous One Aston Cross Business Park
Birmingham, B6 5RQ, United Kingdom

Grundfos Watermill Limited
Gemini House - Enterprise Way
Edenbridge, TN8 6HF, United Kingdom

Grundfos (Ireland) Limited
Unit A, Merrywell Business Park - Ballymount Road Lower 12,
Dublin, Ireland

Grundfos DK A/S
Martin Bachs Vej 3, Bjerringbro, 8850, Denmark

NV Grundfos Bellux SA
Boomssteenweg 81-83, Aartselaar, 2630, Belgium

Grundfos Pumps Pty. Ltd.
515 South Road Regency Park, Adelaide, 5010, Australia

Grundfos (Singapore) Pte. Ltd.
25 Jalan Tukang, SG-619264, Singapore

Grundfos BV
Eluwezoo 35, Almere, 1327 AE, Holland



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Certificate DE12/81830455.00

The management system of

Grundfos Holding A/S

Poul Due Jensens Vej 7
Bjerringbro, 8850, Denmark

has been assessed and certified as meeting the requirements of

OHSAS 18001:2007

For the following activities

Development, manufacturing, service, repair, sales and distribution of components, pumps, electrical motors, pump systems, equipment and services in connection with movement of liquids

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Grundfos Holding A/S

OHSAS 18001:2007

Issue 6



Production sites

Grundfos A/S

Poul Due Jensens Vej 7, Bjerringbro, 8850, Denmark

Grundfos BioBooster A/S

Randersvej 22a, Langå, 8870, Denmark

Grundfos Lifelink A/S

Poul Due Jensens Vej 17, Bjerringbro, 8850, Denmark

Grundfos Operations A/S

Poul Due Jensens Vej 7, Bjerringbro, 8850, Denmark

Grundfos Environment Finland Oy

CSU & Admin Trukkikuja 1, Vantaa, 01360, Finland

Grundfos Environment Finland Oy

Manufacturing Yrittäjantie 6 & 10, Joutsa, 19650, Finland

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Grundfos Pumps Manufacturing Corp.

5900 E. Shields Avenue, Fresno CA, 93727, United States

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2200 Hangar Place, Allentown PA, 18109, United States

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72 Qingqiu Street, Suzhou Industrial Park, 215126 & Qingqiu Road 116

Suzhou Industrial Park, Suzhou, 215126, China

Grundfos Pumpenfabrik GmbH

Willy Pelz Straße 1-5, Wahlstedt, 23812, Germany

Grundfos Water Treatment GmbH

Reetzstraße 85, Pfinztal, 76327, Germany

Grundfos Hungary Manufacturing Ltd.

Búzavirág u. 14, Tatabánya, 2800, Hungary

Grundfos Hungary Manufacturing Ltd.

Sóstó Ipari Park, Holland fasor 15, Székesfehérvár, 8000, Hungary

Grundfos Istra OOO (Grundfos Manufacturing Russia)

Leshkovo 188, Istra Region, Moscow Oblast, 143581, Russia



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Grundfos Holding A/S

OHSAS 18001:2007

Issue 6



Production sites

Grundfos Handels AG Taiwan Branch
14, Minyou Road Tongluo Township, Miaoli County, 36646, Taiwan
Republic of China

Grundfos Srbija d.o.o. (Manufacturing)
Obilazni put - Sever 21, Indjija, 22320, Serbia

Bombas Grundfos de Mexico Manufacturing S.A. de C.V.
Circuito Exportación 272, Parque Industrial Tres Naciones 2da Etapa
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Grundfos Pumps Pty. Ltd.
515 South Road Regency Park, Adelaide, 5010, Australia

Grundfos (Singapore) Pte. Ltd.
25 Jalan Tukang, SG-619264, Singapore



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The management system of

Grundfos Water Treatment GmbH

Reetzstrasse 85
76327 Pfinztal
Germany



has been assessed and certified as meeting the requirements of

ISO 9001:2008

For the following activities

Manufacturing, distribution, maintenance and service of equipment and systems of dosing technology and analytical monitoring systems

This certificate is valid from 15 February 2015 until 14 February 2018 and remains valid subject to satisfactory surveillance audits.
Re certification audit due before 31 December 2017
Issue 4. Certified since 17 June 2011

Multiple certificates have been issued for this scope
The main certificate is numbered DE13/81841218

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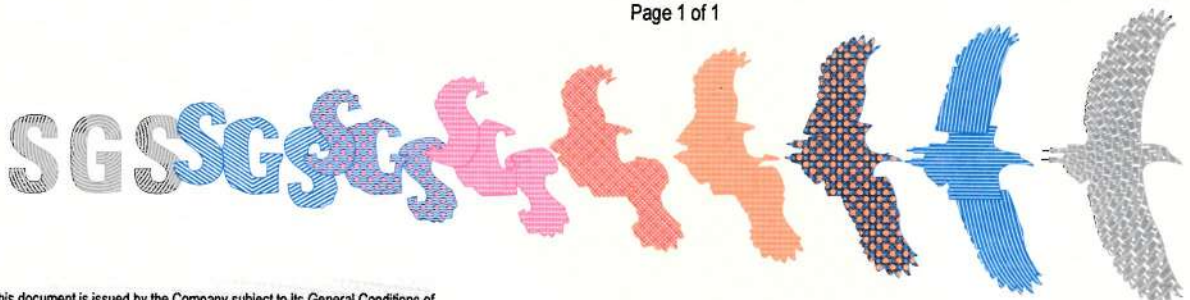
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Certificate DE11/81829052.08

The management system of

Grundfos Water Treatment GmbH

Reetzstrasse 85
76327 Pfinztal
Germany



has been assessed and certified as meeting the requirements of

ISO 14001:2004

For the following activities

Manufacturing, distribution, maintenance and service of equipment and systems of dosing technology and analytical monitoring systems

This certificate is valid from 15 February 2015 until 14 February 2018 and remains valid subject to satisfactory surveillance audits.
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Issue 4. Certified since 17 June 2011

Multiple certificates have been issued for this scope
The main certificate is numbered DE11/81829052

Authorised by

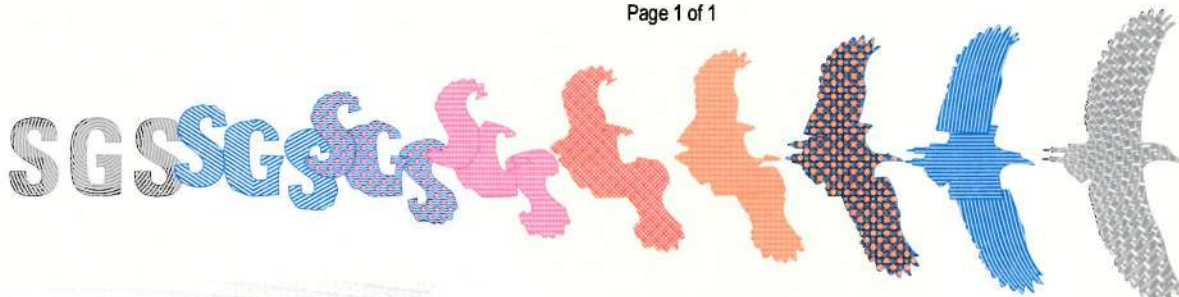
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UTILIZARE AUTORIZATA
"CONSTRUCTIA MONDEI EXCITATA"
RAIONUL GLODETI, REPUBLICA MOLDOVA
ALIMENTARE, APARIN SI RETELELOR DE
APA DEN SATUL CALBA, PESTRU PROIECTUL:



Certificate DE12/81830455.08

The management system of

Grundfos Water Treatment GmbH

Reetzstrasse 85
76327 Pfinztal
Germany



has been assessed and certified as meeting the requirements of

OHSAS 18001:2007

For the following activities

Manufacturing, distribution, maintenance and service of equipment and systems of dosing technology and analytical monitoring systems

This certificate is valid from 15 February until 14 February 2018 and remains valid subject to satisfactory surveillance audits.
Re certification audit due before 31 December 2017
Issue 3. Certified since 17 June 2011

Multiple certificates have been issued for this scope
The main certificate is numbered DE12/81830455

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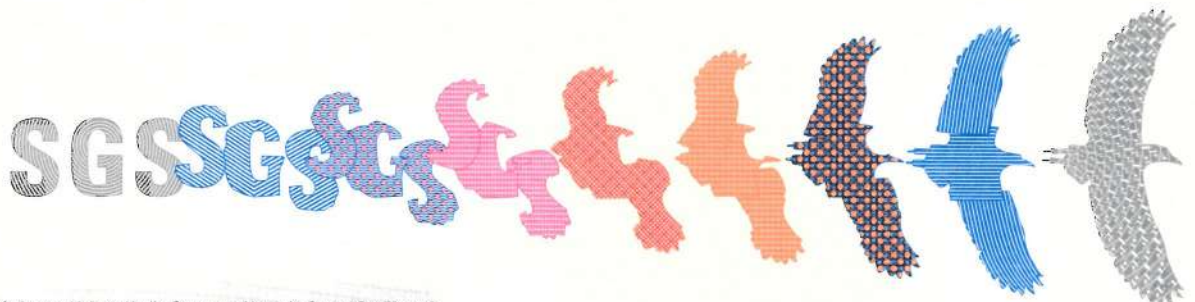
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Certificate DE13/81841218.08

The management system of

Grundfos Water Treatment GmbH

Reetzstraße 85
Pfinztal, 76327, Germany

has been assessed and certified as meeting the requirements of

ISO 9001:2015

For the following activities

Manufacturing, distribution, maintenance and service of equipment and systems of dosing technology and analytical monitoring systems

This certificate is valid from 14 February 2018 until 14 February 2021 and remains valid subject to satisfactory surveillance audits.

Re certification audit due before 31 December 2020

Issue 7. Certified since 17 June 2011

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Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK
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Page 1 of 1



Certificate DE11/81829052.08

The management system of

Grundfos Water Treatment GmbH

Reetzstraße 85
Pfinztal, 76327, Germany

has been assessed and certified as meeting the requirements of

ISO 14001:2015

For the following activities

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Issue 7, Certified since 17 June 2011

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Page 1 of 1





CERTIFICATION MARK

This certifies that

GRUNDFOS HOLDINGS A/S

has had the undermentioned product examined, tested and found, when correctly installed, to comply with the requirements of the United Kingdom Water Supply (Water Fittings) Regulations and Scottish Water Byelaws.

DPI V.2, DPI V.2 +T, RPI & RPI +T PRESSURE SENSORS

The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current status of an approval must be obtained from the WRAS Directory (www.wras.co.uk/directory)

The product so mentioned will be valid until the end of:

September 2022

1709076

Certificate No.

Secretary

Chairman, Product Assessment Group



18th October 2017

Grundfos Holdings A/S
Poul Due Jensens Vej 7,
Bjerringbro,
8850 Denmark

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

Approval Number: 1709076

Dear Sir/Madam

1. Production samples of the products described in Approval Information ("Products") have been subjected to relevant mechanical and water quality tests contained in the "Regulators' Specifications" for the purposes of your application for WRAS Approval.
2. After considering the test reports and examining the Product/s, The Water Regulations Advisory Scheme Ltd. ("WRAS Ltd" / "WRAS") finds that their use, when correctly installed (see paragraph 3) complies with the requirements of The Water Supply (Water Fittings) Regulations 1999, The Water Supply (Water Fittings) (Scotland) Byelaws 2014, The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009 and all other applicable WRAS requirements from time to time.

The non-metallic materials of construction, in contact with the water, are suitable for contact with wholesome water intended for domestic purposes having met the requirements of BS 6920-1: 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.

WRAS Approvals are granted subject to and in accordance with the Standard Terms and Conditions of WRAS Fittings Approval as amended from time to time ("**Standard Terms of Approval**"). You have confirmed your acceptance of the Standard Terms of Approval by submitting your application for WRAS Approval. A copy of the current Standard Terms of Approval are attached to this letter as Appendix B and are also available from the WRAS website: www.wras.co.uk.

Terms defined in the Standard Terms of Approval shall have the same meaning in this letter unless the context otherwise requires.

3. Installation Requirements & Notes (IRNs) are set out in Appendix A. WRAS Product Approvals may include one or more IRNs, which must be followed by the installer to ensure that the product is installed correctly to comply with The Regulations and Byelaws. Since the incorrect installation of products could result in contravention of the Regulations or Byelaws requirements, **the attention of your customers should be drawn to any IRNs.**
4. Please note that the use of the Products described in any particular area of supply is at the discretion of the Water Undertaker in that area.
5. Approval Holders may quote in their sales literature that **WRAS finds that the use of these products, when correctly installed, will not contravene the requirements of** The Water Supply (Water Fittings) Regulations 1999, The Water Supply (Water Fittings) (Scotland) Byelaws 2014, The Water Supply (Water Fittings) Regulations (Northern Ireland) 2009.
6. The "WRAS Approved Product" logos are certification marks registered under the Trade Marks Acts 1994 ("**Certification Marks**"). Approval Holders may use the Certification Marks in accordance with the Standard Terms of Approval.
7. Please verify the details of your Product as set out in the approval information and advise us of any discrepancies by no later than **18th November 2017**

Yours Faithfully

Jason Furnival
Secretary, Product Approval Group

APPROVAL INFORMATION

Validity dates: This approval is valid for fittings (as listed below in model) manufactured AND installed between September 2017 & September 2022

Section Number: **1530**

Section title: **MISCELLANEOUS FITTINGS**

Installation requirement notes: **R001**
(IRN's are set out in Appendix A)

Product description: Range of differential or relative pressure sensors with stainless steel bodies and EPDM 'O'-rings. The DPI V.2 model consists of a sensor and fitting for a capillary tube which is used for measuring the differential pressure between either sides of the sensor.
Maximum working pressure 40.0 Bar. Maximum operating temperature 100°C.

Size: DPI models: ½" BSP (M) and ¾" BSP (M).
RPI models: ½" BSP (M).

Identification Marking: Grundfos name and logo, temperature rating, pressure differential rating, serial number and more product information on label on the body of the sensor.

Factor: Grundfos Holdings A/S

Model: DPI V.2, DPI V.2 +T, RPI & RPI +T.

UTILIZAREA AUTORIZATA EXCLUSIV PENTRU PROIECTUL:
"CONSTRUCTIA SI INSTALAREA REZEI DE ALIMENTARE
RAIONULI GLODENI, REPUBLICA MOLDOVA"
CU APA DIN SATUL CAJBA,

APPENDIX A**INSTALLATION REQUIREMENTS & NOTES**

You are advised to draw customers' attention to the installation requirements and notes set out below which must be followed to ensure that the fittings described above are installed in accordance with the requirements of the Regulations and Byelaws:

IRN R001

See text of entry for Installation Requirements or Notes.

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"CONSTRUCTIA SONDEI ARTEZIENE SI RETELELOR DE ALIMENTARE
CU APA DIN SATUL CAJBA,
RAIONUL GLODENI, REPUBLICA MOLDOVA"

APPENDIX B - Standard Terms of Approval

STANDARD TERMS & CONDITIONS OF WRAS PRODUCT APPROVAL

The Water Regulations Advisory Scheme (WRAS) administers the WRAS Product Approval and Material Approval Scheme on behalf of the UK Water Supply Industry.

WRAS Approval of products is granted subject to the following standard conditions, which holders of approvals accept on signing the WRAS Approval application form (Form F2).

1. Introduction

1.1. The WRAS Approval Scheme and the WRAS Product and Materials Directory are owned and operated by the Water Regulations Advisory Scheme Ltd ("WRAS Ltd" or "WRAS").

1.2. WRAS Approvals are granted by the WRAS Product Assessment Group ("PAG"). Members of the PAG are suitably experienced representatives of the UK Water Supply Industry appointed by the WRAS Technical Committee.

1.3. In these Standard Terms of Approval, the following definitions shall apply:

"Agent" means any third party agent nominated by the Applicant for the purposes of the Application and whose details are set out in section 4 of the Application Form;

"Applicant" means any person, company or other organisation / entity that applies for WRAS Approval in respect of a Product;

"Application" means an application for WRAS Approval;

"Application Form" means the F2 application form to be used when applying for WRAS Approval and which can be found on the WRAS website www.wras.co.uk;

"Approval" / "WRAS Approval" means approval granted by WRAS on behalf of UK Water Suppliers once WRAS is satisfied that the Product complies with the requirements of the Water Supply (Water Fittings) Regulations 1999 and BS 6920 and any other applicable requirements from time to time;

"Approval Holder" means the holder of an existing WRAS Approval, which includes holders of both Primary Approvals and Secondary Approvals;

"Approval Period" has the meaning set out in clause 3.5;

"Approved Product" means any water fitting, plumbing product, material or component which is the subject of an existing WRAS Approval;

"Approval Letter" means the letter from WRAS to the Applicant confirming the grant of WRAS Approval in respect of a Product;

"Approval Scheme Installation Requirements and Notes" means any installation requirements and notes issued by WRAS as part of a WRAS Approval;

"Certification Mark" has the meaning set out in clause 20.1;

"Committee" means the WRAS Technical Committee;

"Directory" means the WRAS Product & Material Directory;

"Event Outside Our Control" means any act or event beyond WRAS's reasonable control, including without limitation strikes, lock-outs or other industrial action by third parties, civil commotion, riot, invasion, terrorist attack or threat of terrorist attack, war (whether declared or not) or threat or preparation for war, fire, explosion, storm, flood, earthquake, subsidence, epidemic or other natural disaster, or failure of public or private telecommunications networks [or impossibility of the use of railways, shipping, aircraft, motor transport or other means of public or private transport];

"Factor" a factor is generally an organisation that did not manufacture the Product, typically being a retailer, reseller or wholesaler;

"Primary Approval" means an Approval granted pursuant to the first Application for a Product and any subsequently renewals of that first Approval;

"Product" means any water fitting, plumbing product, material or component submitted to WRAS for WRAS Approval;

"Sample" samples of the Product to be sent to WRAS for evaluation as part of the Application;

"Scheme" means the Water Regulations Advisory Scheme;

"Secondary Approval" means an Approval granted pursuant to a second Application for a Product; a Secondary Approval relies on the existence of a Primary Approval and is typically used where the Product has been re-branded but maintains the same mechanical specifications as the Product submitted for Primary Approval and therefore does not require any further mechanical or materials testing;

"Standard Terms of Approval" these standard terms and conditions of WRAS Approval as amended from time to time in accordance with clause 24.2;

"Test Facility" means any WRAS suitably accredited test laboratory;

"WRAS Guidance" means the WRAS Product Approval Guidance available on the WRAS website www.wras.co.uk

2. Obligations of the Applicant & Approval Holder

- 2.1.** It is the responsibility of Applicants to ensure that they are familiar with and comply at all times with the requirements of the Scheme as detailed in both these Standard Terms of Approval and in the WRAS Guidance.
- 2.2.** The Applicant recognises, accepts and complies with the roles and responsibilities of Applicants seeking WRAS Approval, as detailed in the "Overview of the roles & responsibilities of those parties involved in the process for gaining WRAS product approval" document which is available on the WRAS website www.wras.co.uk. For the avoidance of doubt, WRAS shall not be responsible for the acts or omissions of any test laboratory or any other third party involved in the WRAS Approval process.
- 2.3.** The Applicant warrants the accuracy and completeness of all information contained in the Application and any other information now or subsequently provided to by the Applicant or its Agents to WRAS and/or the Test Facility in pursuance of the Application and confirms that none of this information is or may be construed as misleading in any way. WRAS accepts no liability for any losses or any other damage arising from incomplete or incorrect information provided by the Applicant.
- 2.4.** The Applicant / Approval Holder undertakes to WRAS as follows:
- 2.4.1.** to co-operate fully with WRAS and its employees and agents in relation to the Application process and any subsequent audit that WRAS may consider necessary and to provide WRAS with all such relevant information (including samples and evidence of the purchase of products and materials such as goods receipts) as may be required by WRAS from time to time;
- 2.4.2.** to notify WRAS of any changes to contact details (including current email addresses), company details or business changes that relate to the Approved Product;
- 2.4.3.** to notify WRAS immediately of any changes relating to the Application / Approved Product, its manufacture, intended use or method of installation which could affect the compliance of the Product or its Approval by WRAS;
- 2.4.4.** to ensure that no changes or modifications to the Application / Approved Product, markings, assembly or range of products/fittings, including changes, substitutions or modification to the materials of construction, components or sub assemblies ("Modifications") are made without the Applicant / Approval Holder first notifying WRAS. Modifications include but shall not be limited to design changes, changes in materials and/or suppliers of materials, changes to the site of manufacture and changes to marking;
- 2.4.5.** to provide WRAS with full details of any proposed Modifications and if required, supply Samples for testing and reassessment. Failure to comply with this condition will immediately invalidate a previously granted Approval. WRAS also reserves the right to withdraw an Approval with immediate effect where WRAS considers that the Modification may affect the validity of an existing Approval for any reason;
- 2.4.6.** to ensure that all products bearing the Certification Mark conform exactly with the Sample in respect of which WRAS Approval has been granted ("Approved Sample") and so that each product/unit manufactured by or on behalf of the Approval Holder which is to be attributed with WRAS Approval is capable of satisfying all of the same tests and other criteria applied to the Approved Sample;
- 2.4.7.** to adhere to these Standard Terms of Approval in relation to all Approved Products.
- 2.5.** The Approval Holder accepts that the Approval granted may be subject to audit by WRAS Ltd, either as part of routine or investigative auditing activity and the Approval Holder shall co-operate fully with WRAS for this purpose. The Approval Holder shall reimburse WRAS for all reasonable costs incurred in connection with the audit.
- 2.6.** It is the Approval Holder's responsibility to draw the attention of purchasers and installers to any installation requirements or notes that apply to their Approved Products, assemblies or range of products as a condition of Approval and to advise them that failure to install in accordance with these requirements will invalidate their approval and could result in contravention of the Water Supply (Water Fittings) Regulations 1999, The Water Supply (Water Fittings) (Scotland) Byelaws 2014 and Water Supply (Water Fittings) Regulation (Northern Ireland) 2009.

3. WRAS Product Approvals

3.1. These Standard Terms of Approval form the agreement between WRAS and the Applicant / Approval Holder in respect of Applications and Approvals.

3.2. WRAS Approvals are only granted to those Products, assemblies or ranges of Products which satisfy the Regulators' Specification and requirements of the Water Supply (Water Fittings) Regulations 1999, The Water Supply (Water Fittings) (Scotland) Byelaws 2014 and Water Supply (Water Fittings) Regulation (Northern Ireland) 2009 and any other applicable requirements of WRAS from time to time. WRAS Approvals are granted at the sole discretion of the UK Water Suppliers acting through their representatives on the Committee and its sub-group, PAG. No liability is accepted by WRAS Ltd, the Committee or PAG to any party which may arise as a result of a refusal to grant an Approval or revocation of an existing Approval.

3.3. WRAS Approval indicates that provided the Product is installed in accordance with the manufacturer's instructions and any Approval Scheme Installation Requirements and Notes, the UK Water Suppliers accept that it is 'of an appropriate quality and standard' in accordance with Regulation/Byelaw 4(1)(a) of the Water Supply (Water Fittings) Regulations 1999, The Water Supply (Water Fittings) (Scotland) Byelaws 2014 and Water Supply (Water Fittings) Regulation (Northern Ireland) 2009.

3.4. WRAS Approval will only be granted to production Samples. A prototype or preproduction Sample may only be submitted for 'approval in principle', and retesting may be required when submitted as a production Sample.

3.5. Unless terminated or extended in accordance with these Standard Terms of Approval, each WRAS Approvals is valid for the five year term stated in the Approval Letter ("Approval Period"). To extend a WRAS Approval beyond the initial five year term, the Approved Product must be re-assessed and where necessary re-tested before expiry of the current five year term. Approval Holders will be advised that the Product is due for re-assessment by email or letter but it remains the sole responsibility of the Approval Holder to maintain a current and valid WRAS Approval

3.6. Only Products which have been tested appropriately, approved and listed by the Scheme are WRAS Approved Products®.

3.7. Only those Products described and listed under the heading 'model' in the approval documentation and Directory entry, are approved by WRAS and covered by the scope of the Approval.

3.8. The scope of an Approval does not extend to rebranded products unless otherwise agreed by WRAS.

3.9. Approval Holders must ensure that individually Approved Products, components and materials incorporated or used in the construction of their approved product retain their Approval throughout the Approval period of their approved product. Where Modifications are required WRAS must be informed and the Modifications approved in accordance with clause 2.4.4 and 2.4.5 above).

3.10. Where an Approved Product has its Approval renewed up to nine months before the current approval expires, the renewed Approval can run for five years from the date of expiry of the current one, provided that this does not conflict with the guidelines for processing Applications published in the WRAS Guidance documents.

3.11. An Approval is only valid if the Approved Product is manufactured and installed during the Approval Period.

4. Applications

4.1. All applications for WRAS Approval must be submitted using the appropriate official WRAS Application form (the 'F2' form is available from the WRAS website www.wras.co.uk/approval.asp).

4.2. All Applications for WRAS Approval must be supported by schematic diagrams, or acceptable alternatives, which in addition to illustrating the arrangement of the Product clearly show the water supply connections, any discharge points, including overflows and waste discharges and the water pathway through the Product. Installation guides and manuals, where applicable, and photographs of the Product(s) and markings suitable for inclusion in the on-line Directory (preferably in a digital format) are also required.

4.3. Applicants must complete a schedule of materials (see section 10 of the Application Form). All component parts of a product, including solder, thread sealant tape, lubricant and grease, which come into contact with water which is required to be wholesome must be listed. Applications must contain all the information required by WRAS before being presented to the PAG. (See WRAS Guidance documentation for further information.)

4.4. The Application Form must include details of any Agents appointed by the Applicant detailing the scope of the Agent's authority. The Applicant undertakes to ratify all acts and omissions of the Agent in connection with the Application / Approval and to indemnify WRAS for any losses incurred as a result of any breach of these Standard Terms of Approval and by the Applicant and/or its Agent(s).

4.5. Application forms will be valid for up to 12 months from date of signature, after which time confirmation will be required that the information provided is up-to-date.

5. Fees

WRAS charges an administration fee ("WRAS Fee") for processing an Application. Details of the WRAS Fee are available from WRAS on request. Where applicants are using a Test Facility to project manage their application, WRAS will collect this fee from the Test Facility. In such cases, this fee is usually included in the charges made by the Test Facility to the Applicant, but it is the Applicant's responsibility to confirm this and to ensure that the WRAS Fee is discharged in full.

6. Termination

- 6.1. Either party may close an Application at any time upon giving the other party written notice.
- 6.2. In the event that an Applicant withdraws an Application they shall pay to WRAS Ltd all sums due or committed up to the date of withdrawal.
- 6.3. WRAS will retain a copy of the F2 Application Form for the entire duration of the Approval Period (including any renewal period granted by WRAS) and for up to 5 years after expiry of the Approval Period.

7. Ownership of documents

- 7.1. All intellectual property owned by either party or any third independent party shall remain exclusively the property of the owner.
- 7.2. Subject to any confidential information or other intellectual property belonging to the Applicant, all Application forms are the property of WRAS Ltd.

8. Confidentiality

- 8.1. Without prior written consent, both WRAS and the Applicant undertake not to divulge to any third party any information which was designated as confidential by the owner at the time it was made available ("Confidential Information").
- 8.2. It is acknowledged and agreed that WRAS shall be entitled to retain information provided by an Applicant including any test results / analyses of the Confidential Information for up to seven years following expiry of any approvals granted and/or renewed by WRAS provided that the Confidential Information is kept confidential at all times in accordance with this letter.

9. Performance testing

- 9.1. WRAS will only accept applications which include test reports covering in full the Scheme's acceptance criteria. (See WRAS Guidance documentation for further information.)
- 9.2. Products must be tested in accordance with the requirements identified in the Test Code Sheet (TCS) matrix published on the WRAS website or as notified by WRAS Ltd.
- 9.3. Where a product is an assembly of components, all individual constituent components must satisfy the TCS requirements applicable to that component and unless already WRAS Approved will require testing.
- 9.4. In the case of non-standard products clarification of the testing required should be sought from WRAS in advance.
- 9.5. The scope of an Approval is restricted to those conditions applied during testing. Consequently should an Applicant wish to obtain Approval for use with a variety of pipe materials at a range of maximum working pressures and temperatures, testing must include these variables. (See WRAS Guidance Documents for further information.)
- 9.6. Mechanical testing of products must have been completed no more than two years before the report is presented to the PAG.

10. Samples

- 10.1. A Sample should have been manufactured no more than 12 months before the date of its receipt by the Test Facility (please refer to the WRAS Guidance for further information.)
- 10.2. In the case of product ranges, or products manufactured or assembled at more than one site representative Samples must be tested (please see WRAS Guidance documentation for further information.)
- 10.3. Where alternative materials are used testing of these variants shall only be undertaken where they could have an impact upon the opacity, endurance or pressure testing appropriate to that product. (Please refer to the WRAS Guidance documentation for further information.)

11. Markings

- 11.1. It is a condition of WRAS Product Approval that all products be adequately and consistently marked to facilitate identification. (See WRAS Guidance documentation for further information.)

12. Testing Failure

- 12.1. Should a Product undergoing mechanical performance testing fail to satisfy the requirements of an individual test code sheet then a record of the failure will be reported to WRAS by the Test Facility. Complete retesting of a new Sample will be required unless WRAS accepts that replacement of the failed component or product would not affect the performance of the other tests already carried out on the Sample which failed. (See WRAS Guidance documentation for further information.)
- 12.2. Should a replacement Sample subsequently fail the same test then it is deemed to be an outright failure and will be reported as such to the PAG. If the replacement fails a different test it is considered to be a first failure and treated as a failure during testing.

13. Modified replacement samples

- 13.1. If a Product fails to satisfy the requirements of an individual test code sheet and is then modified, the Applicant must provide a declaration detailing the nature and full extent of all modifications. In such cases the status of any earlier testing should be clarified with WRAS.
- 13.2. Where a modified Product is re-tested it is only deemed to be an outright failure if two failures are recorded for the same test.

20. WRAS Approved Product logo

20.1. The "WRAS Approved Product" and WRAS Approved Material" logos are certification marks registered under the Trade Marks Acts 1994 ("Certification Marks"). Approval Holders shall be entitled to use the Certification Marks upon the licence terms set out in this clause 20 ("Licence Terms").

20.2. Approval Holders acknowledge that WRAS is the owner of the Certification Marks and that they shall not do anything which may be taken to indicate that they have any right or interest in the Certification Marks other than as set out in these Standard Terms of Approval.

20.3. Prior to an Approval being granted Applicants shall not use the Certification Marks or the WRAS name or logo in any publication or suggest or imply any endorsement of a particular product or range of products by the Scheme either verbally, in writing or by any other means.

20.4. The Certification Marks indicate that the UK Water Industry have endorsed the product detailed in the WRAS Product and Materials Directory as described in clause 3.2.

20.5. Approval Holders may use the Certification Marks only in respect of those Approved Products listed in the Approval Letter and only for the duration of the Approval Period applicable to those Approved Products

20.6. Approval Holders are entitled to use the Certification Mark on the packaging, promotional literature and point of sale advertising for Approved Products.

20.7. Where a Certification Mark is used, it must be replicated without adaptation or alteration, save that reproducing the logo in black and white as opposed to colour is permissible.

20.8. The Certification Marks may only be used in connection with a product range where each individual product and/or material and/or component within that product range has been granted individual WRAS Approval. **20.9.** The Approval Holder shall inform its Factors and agents that any Modification or other alteration to the Approved Product may invalidate the Approval and shall inform WRAS of any Modification or other alteration as soon as this comes to the Approval Holder's attention.

20.9. The Approval Holder shall not sub-licence, assign, transfer or otherwise deal with the Certification Marks other than on these Licence Terms.

20.10. The Approval Holders shall adhere to the terms of all brand guidelines issued by WRAS from time to time. Failure to comply with all brand guidelines will immediately invalidate a previously granted Approval.

20.11. The Approval Holder at all times remains responsible for the correct use of the Certification Marks by its Factors.

21. Withdrawal of Approvals

21.1. WRAS reserves the right to withdraw an Approval in the following circumstances:

21.2. where there has been a breach by the Applicant / Approval Holder of any of its obligations in clause 2 above or any other provision of these Standard Terms of Approval;

21.3. where there has been a change in any relevant law, regulation or any other requirement which affects the issue of WRAS Approvals from time to time.

21.4. Where PAG considers that an existing Approval was granted incorrectly, or becomes invalid, or requires amendment, WRAS reserves the right to suspend, amend or cancel the Approval, to amend or remove details of it from the WRAS Product and Materials Directory and to require the return of the WRAS Approval certificate. At its sole discretion, WRAS may publish details of the withdrawal, amendment or suspension of an Approval.

22. Limitation of Liability

22.1. Nothing in these Standard Terms of Approval shall limit or exclude WRAS's liability for:

22.1.1. death or personal injury caused by its negligence, or the negligence of its employees, agents or subcontractors;

22.1.2. fraud or fraudulent misrepresentation; or

22.1.3. breach of the terms implied by section 2 of the Supply of Goods and Services Act 1982.

22.2. WRAS shall not be liable to the Applicant or Approval Holder, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, for any loss of profits, loss of sales or business, loss of agreements or contracts, loss of or damage to goodwill or for any indirect or consequential loss arising under or in connection with any Application or Approval.

22.3. WRAS's total liability to the Applicant / Approval Holder in respect of all other losses arising under or in connection with any Application or Approval, whether in contract, tort (including negligence), breach of statutory duty, or otherwise, shall not exceed the sum of the WRAS Fee paid the relevant Applicant / Approval Holder to WRAS.

22.4. Except as set out in these Standard Terms of Approval, all warranties, conditions and other terms implied by statute or common law are, to the fullest extent permitted by law, excluded.

23. Disputes & Appeals

23.1. Applicants or Approval Holders who have a complaint about the refusal, suspension or withdrawal of an Approval or conditions attached to an Approval, or about other aspects of the WRAS Approval Scheme, should ask the WRAS Approvals Manager to investigate their complaint. The Approvals & Enquiries Manager will take action as he or she considers appropriate. Where this does not resolve the complaint, Applicants/Approval Holders should write to the Managing Director of WRAS with details of their complaint. If an Applicant/Approval Holder is dissatisfied with the way a complaint has been dealt with by the Managing Director, the Applicant/Approval Holder may request a review by the Technical Committee Chairman. The Chairman may appoint a panel with relevant experience to investigate the complaint and make a recommendation. The decision of the Chairman in determining such complaints shall, save in the case of manifest error or omission, be final and binding on the parties.

24. General

24.1. Any decision, requirement or notification under these Standard Terms of Approval shall be given by in writing (which shall include email) by or on behalf of the party giving it.

24.2. WRAS may revise these Standard Terms of Approval from time to time in order to reflect changes in relevant laws and other regulatory and Scheme requirements. Whenever WRAS revises these Standard Terms of Approval, WRAS will notify you in writing (which may include email where we have been provided with an email address) and the updated terms Standard Terms of Approval will be uploaded onto the WRAS website www.wras.co.uk.

24.3. WRAS will not be liable or responsible for any failure to perform, or delay in performance of any of its obligations to Applicants or Approval Holders that is caused by an Event Outside Our Control.

24.4. These Standard Terms of Approval and any disputes or claims arising out of or in connection with them or their subject matter (including non-contractual disputes or claims) shall be governed by, and construed in accordance with the laws of England and Wales and the parties irrevocably submit to the exclusive jurisdiction of the courts of England and Wales..



CERTIFICATION MARK

This certifies that

GRUNDFOS HOLDINGS A/S

has had the undermentioned product examined, tested and found, when correctly installed, to comply with the requirements of the United Kingdom Water Supply (Water Fittings) Regulations and Scottish Water Byelaws.

LPS, RPS, MFS, VFI, VFS & DPS RANGE OF PRESSURE, FLOW AND TEMPERATURE SENSORS

The certificate by itself is not evidence of a valid WRAS Approval. Confirmation of the current status of an approval must be obtained from the WRAS Directory (www.wras.co.uk/directory)

The product so mentioned will be valid until the end of:

February 2022

1702048

Certificate No.

Handwritten signature of J. Funnal in black ink.

Secretary

Handwritten signature of K. Leisbey in black ink.

Chairman, Product Assessment Group



СЕРТИФИКАТ СООТВЕТСТВИЯ

№ РОСС ДК.НР15.Н01073

Срок действия с 02.03.2020

по 01.03.2023

№ 0620480

ОРГАН ПО СЕРТИФИКАЦИИ рег.№ RA.RU.11НР15, Орган по сертификации Общества с ограниченной ответственностью "Оценка продукции и систем менеджмента", 115580, РОССИЯ, Город Москва, улица Мусы Джалиля, дом 29, корпус 1, помещение/комната II/3, Тел: +79162650471, E-mail: ocenkapr@mail.ru

ПРОДУКЦИЯ Мембранные цифровые дозировочные насосы SMART Digital XL, типы: DDA, DDE.
Серийный выпуск

код ОК
Код ОК 034-2014
(КПЕС 2008)
28.13.12

СООТВЕТСТВУЕТ ТРЕБОВАНИЮ НОРМАТИВНЫХ ДОКУМЕНТОВ
ГОСТ 30546.1-98 (Сейсмостойчивость до 9 баллов по шкале MSK-64),
ГОСТ 30631-99, ГОСТ 17516.1-90 виброустойчивости группы М7

код ТН ВЭД
8413504000

ИЗГОТОВИТЕЛЬ Концерн GRUNDFOS Holding A/S. Место нахождения: Дания, Poul Due Jensens Vej 7 DK-8850 Bjerringbro, Фактический адрес: Дания, Poul Due Jensens Vej 7 DK-8850 Bjerringbro, ; E-mail: info@grundfos.com

СЕРТИФИКАТ ВЫДАН ОБЩЕСТВО С ОГРАНИЧЕННОЙ ОТВЕТСТВЕННОСТЬЮ "ГРУНДФОС", Место нахождения: 109544, Россия, город Москва, улица Школьная, 39-41, Стр.1, ИНН 5042054367, Телефон: +7 (495) 737-30-00; Адрес электронной почты: grundfos.moscow@grundfos.com

НА ОСНОВАНИИ протокола испытаний № 02-02-20 от 07.02.2020 года, выданного Обществом с ограниченной ответственностью "Стройвентмаш", аттестат аккредитации Лицензия № ЦО-(У)-02-101-10766 от 30.07.2018 года. Адрес: 109147, город Москва, улица Марксистская, дом 22, телефон: +7 (499) 709-01-51, факс: +7 (499) 709-01-51, e-mail: info@stroyventmash.ru

ДОПОЛНИТЕЛЬНАЯ ИНФОРМАЦИЯ условия хранения конкретного изделия, срок хранения (службы) указываются в прилагаемой к продукции товаросопроводительной и/или эксплуатационной документации. Схема сертификации: 3с

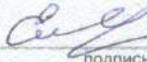
Руководитель органа


подпись

Д.А. Петри

инициалы, фамилия

Эксперт


подпись

К.С. Егорова

инициалы, фамилия

Сертификат не применяется при обязательной сертификации

acreditat pentru
CERTIFICARE



SR EN ISO/CEI 17021-1:2015
CERTIFICAT DE ACREDITARE
SM 004



C E R T I F I C A T

SRAC certifică organizația/ certifies the organisation

EATON ELECTRIC S.R.L.

Șos. București - Ploiești, nr. 42 - 44, Băneasa Business & Technology Park,
Clădirea B, et. 3, Aripa B2, sector 1, București

pentru următoarele activități/
for the following fields of activities

Comercializare echipamente și componente electrice de joasă și medie tensiune.
Instalare, service, mentenanță, suport tehnic și reparații pentru echipamente electrice

Sale of low and medium voltage electrical equipment and components. Installation,
service, maintenance, technical support and repairs for electrical equipment

că are implementat și menține un
sistem de managementul calității
conform condițiilor din standardul

which has implemented and maintains a
quality management system
which fulfils the requirements of the standard

SR EN ISO 9001:2015 (ISO 9001:2015)



Valabilitatea certificatului este condiționată de
efectuarea supravegherilor anuale până la data de:



10-
2020

10-
2021

nr. certificat/ certificate registration no. 2249
data inițială a certificării/ initial certification date 22 octombrie 2004
data recertificării/ reissuing date 07 octombrie 2019
data ultimei actualizări/ last update -
valabil până la/ valid until 08 octombrie 2022 (cu condiția vizării anuale)
SRAC CERT SRL, Str. Vasile Pârvan Nr. 14, Sector 1, București www.srac.ro

Director General
Ing. Mihaela Cristea





THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

SRAC as an IQNet Partner hereby states that the organization:

EATON ELECTRIC S.R.L.

Șos. București Ploiești, nr. 42 - 44, Băneasa Business & Technology Park,
Clădirea B, et. 3, Aripa B2, sector 1, București

for the following scope:

Sale of low and medium voltage electrical equipment and components. Installation, service, maintenance, technical support and repairs for electrical equipment

has implemented and maintains a

Quality Management System

which fulfils the requirements of the following standard:

ISO 9001 : 2015

Issued on: 2019-10-07

First issued on: 2004-10-22

for the validity date, please refer to the original certificate* issued by SRAC

Registration Number: RO- 2249



Alex Stoichitoiu
President of IQNet

eng. Mihaela Cristea
SRAC General Manager



IQNet Partners:**

AENOR Spain AFNOR Certification France APCER Portugal CCC Cyprus CISQ Italy
CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany FCAV Brazil
FONDONORMA Venezuela ICONTEC Colombia Inspecta Certification Finland INTECO Costa Rica
IRAM Argentina JQA Japan KFQ Korea MIRTEC Greece MSZT Hungary Nemko AS Norway NSAI Ireland PCBC Poland
Quality Austria Austria RR Russia SIGE México SII Israel SIQ Slovenia SIRIM QAS International Malaysia
SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey Vinçotte Belgium YUQS Serbia
IQNet is represented in the USA by: AFNOR Certification, CISQ, DQS Holding GmbH and NSAI Inc.

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

** The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

acreditat pentru
CERTIFICARE



SR EN ISO/CEI 17021-1:2015
CERTIFICAT DE ACREDITARE
SM 004



C E R T I F I C A T

SRAC certifică organizația/ certifies the organisation

EATON ELECTRIC S.R.L.

Șos. București - Ploiești, nr. 42 - 44, Băneasa Business & Technology Park,
Clădirea B, et. 3, Aripa B2, sector 1, București

pentru următoarele activități/
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Instalare, service, mentenanță, suport tehnic și reparații pentru echipamente electrice

Sale of low and medium voltage electrical equipment and components. Installation,
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că are implementat și menține un
sistem de management de mediu
conform condițiilor din standardul

which has implemented and maintains a
environmental management system
which fulfils the requirements of the standard

SR EN ISO 14001:2015 (ISO 14001:2015)



Valabilitatea certificatului este condiționată de
efectuarea supravegheților anuale până la data de:



10-
2020

10-
2021

nr. certificat/ certificate registration no. 275

data inițială a certificării/ initial certification date 01 aprilie 2005

data recertificării/ reissuing date 07 octombrie 2019

data ultimei actualizări/ last update -

valabil până la/ valid until 08 octombrie 2022 (cu condiția vizării anuale)

SRAC CERT SRL, Str. Vasile Pârvan Nr. 14, Sector 1, București www.srac.ro

Director General
Ing. Mihaela Cristea





THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

SRAC as an IQNet Partner hereby states that the organization:

EATON ELECTRIC S.R.L.

Șos. București - Ploiești, nr. 42 - 44, Băneasa Business & Technology Park,
Clădirea B, et. 3, Aripa B2, sector 1, București

for the following scope:

Sale of low and medium voltage electrical equipment and components. Installation, service, maintenance, technical support and repairs for electrical equipment

has implemented and maintains a

Environmental Management System

which fulfils the requirements of the following standard:

ISO 14001: 2015

Issued on: 2019-10-07

First issued on: 2005-04-01

for the validity date, please refer to the original certificate* issued by **SRAC**

Registration Number: RO - 275



Alex Stoichitoiu
President of IQNet

eng. Mihaela Cristea
SRAC General Manager



IQNet Partners:**

AENOR Spain AFNOR Certification France APCER Portugal CCC Cyprus CISQ Italy
CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany FCAV Brazil
FONDONORMA Venezuela ICONTEC Colombia Inspecta Certification Finland INTECO Costa Rica
IRAM Argentina JQA Japan KFQ Korea MIRTEC Greece MSZT Hungary Nemko AS Norway NSAI Ireland PCBC Poland
Quality Austria Austria RR Russia SIGE México SII Israel SIQ Slovenia SIRIM QAS International Malaysia
SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey Vinçotte Belgium YUQS Serbia
IQNet is represented in the USA by: AFNOR Certification, CISQ, DQS Holding GmbH and NSAI Inc.

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

** The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com



C E R T I F I C A T

SRAC certifică organizația/ certifies the organisation

EATON ELECTRIC S.R.L.

Sos. București - Ploiești, nr. 42 - 44, Băneasa Business & Technology Park,
Clădirea B, et. 3, Aripa B2, sector 1, București

**pentru următoarele activități/
for the following fields of activities**

*Comercializare echipamente și componente electrice de joasă și medie tensiune.
Instalare, service, mentenanță, suport tehnic și reparații pentru echipamente electrice*

*Sale of low and medium voltage electrical equipment and components. Installation,
service, maintenance, technical support and repairs for electrical equipment*

că are implementat și menține un
**sistem de management al sănătății
și securității ocupaționale**
conform condițiilor din referențialul

which has implemented and maintains an
**occupational health and safety
management system**

which fulfils the requirements of the reference standard

SR ISO 45001:2018 (ISO 45001:2018)



Valabilitatea certificatului este condiționată de
efectuarea supravegheților anuale până la data de:



10-
2020

10-
2021

nr. certificat/ certificate registration no. **1299**

data inițială a certificării/ initial certification date **09 ianuarie 2009**

data recertificării/ reissuing date **07 octombrie 2019**

data ultimei actualizări/ last update -

valabil până la/ valid until **08 octombrie 2022** (cu condiția vizării anuale)

SRAC CERT SRL, Str. Vasile Pârvan Nr. 14, Sector 1, București www.srac.ro

Director General
Ing. Mihaela Cristea





THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

SRAC as an IQNet Partner hereby states that the organization:

EATON ELECTRIC S.R.L.

Șos. București - Ploiești, nr. 42 - 44, Băneasa Business & Technology Park,
Clădirea B, et. 3, Aripa B2, sector 1, București

for the following scope:

Sale of low and medium voltage electrical equipment and components. Installation,
service, maintenance, technical support and repairs for electrical equipment

has implemented and maintains a

Occupational Management System

which fulfils the requirements of the following standard:

ISO 45001:2018

Issued on: 2019 - 10 - 07

First issued on: 2009 - 01 - 09

for the validity date, please refer to the original certificate* issued by SRAC

Registration Number: RO - 1299



Alex Stoichitoiu
President of IQNet

eng. Mihaela Cristea
SRAC General Manager



IQNet Partners**:

AENOR Spain AFNOR Certification France APCER Portugal CCC Cyprus CISQ Italy
CQC China CQM China CQS Czech Republic Cro Cert Croatia DQS Holding GmbH Germany FCAV Brazil
FONDONORMA Venezuela ICONTEC Colombia Inspecta Certification Finland INTECO Costa Rica
IRAM Argentina JQA Japan KFQ Korea MIRTEC Greece MSZT Hungary Nemko AS Norway NSAI Ireland PCBC Poland
Quality Austria Austria RR Russia SIGE México SII Israel SIQ Slovenia SIRIM QAS International Malaysia
SQS Switzerland SRAC Romania TEST St Petersburg Russia TSE Turkey Vinçotte Belgium YUQS Serbia
IQNet is represented in the USA by: AFNOR Certification, CISQ, DQS Holding GmbH and NSAI Inc.

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

** The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet-certification.com

EU-Konformitätserklärung Nr. 2700458.CE.02

EU-Declaration of Conformity No. 2700458.CE.02

Hersteller / Manufacturer: PHOENIX CONTACT GmbH & Co. KG
 Anschrift / Address: Flachsmarktstraße 8, 32825 Blomberg, Germany

Produktbezeichnung / Product description: **IB IL AI 4/I-PAC**
(Artikelbezeichnung, / Article description, Artikel-Nr. / Article-/Part no.) **2700458**

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 61000-6-2:2005+AC:2005 EN 61000-6-4:2007+A1:2011 * EN 61131-2:2007
 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.

Blomberg, 2018-11-03


 Klaus Brand
 Business Unit Control Systems
 Manager Development Analog I/O
Ansprechpartner / contact person ¹


 Dr. Tobias Frank
 Business Unit Control Systems
 Vice President
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.

EU-Konformitätserklärung Nr. 1046666.CE.00 EU-Declaration of Conformity No. 1046666.CE.00

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

Produktbezeichnung / Product description: **BTP 2070W**

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

1046666

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)

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

EN 55011:2009+A1:2010	EN 61000-6-2:2005+AC:2005	EN 61000-6-4:2007+A1:2011 *
EN 61131-2:2007	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:

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.

Middletown, 2017-10-31


 Michael Rothwell
 Business Unit Control Systems
 Vice President
 Ansprechpartner / contact person


 David Skelton
 Development & Manufacturing
 Vice President & General Manager
 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.

EU Declaration of Conformity

NO. OF PAGES

1 (1)

We: nVent HOFFMAN
Pº de la Finca 1, Ed 3
Madrid 28223

declare under our sole responsibility that the product ranges

MCS, Mild steel floor standing combinable single door enclosure
MCD, Mild steel floor standing combinable double door enclosure
MCI, Mild steel floor standing IP protected ICT Rack
MCM, Mild steel floor standing industrial computer enclosure
MCF, Mild steel floor standing flange mount disconnect
MKS, Mild steel floor standing compact single door enclosure
MKD, Mild steel floor standing compact double door enclosure
MCSS, Stainless s. floor standing combinable single door enclosure
MCDS, Stainless s. floor standing combinable double door enclosure
EKSS, Stainless s. floor standing compact single door enclosure
EKDS, Stainless s. floor standing compact double door enclosure
ECOM, Aluminium floor standing combinable outdoor enclosure
EKOM, Aluminium floor standing outdoor enclosure
MCSE, EMC floor standing combinable single door enclosure

to which this declaration relates, are in conformity with the following standards or other normative document(s):

EN 62208, Empty enclosures for low voltage switchgear and control gear assemblies – General requirements

Following the provisions of Directive
2014/35/EU, Low Voltage Directive



Madrid, 13th November 2018

David Ramos, HPM

Measuring instrument - EEM-MA400 - 2901364

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)




Energy measurement device to measure electrical parameters in low voltage installations up to 500 V, acquisition of total harmonic oscillations - can be extended with RS-485 communication module

Your advantages

- Can be extended with RS-485 communication module (JBUS/MODBUS)
- Acquisition of total harmonics up to 51st harmonic



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 585804
GTIN	4046356585804
Weight per Piece (excluding packing)	704.200 g
Custom tariff number	90303100
Country of origin	Tunisia
Note	Made to Order (non-returnable)

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Width	96 mm
Height	96 mm
Depth	82 mm
Installation depth with extension module	80 mm
Installation depth without extension module	60 mm

Ambient conditions

Ambient temperature (operation)	-10 °C ... 55 °C (14 °F to 131 °F)
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Measuring instrument - EEM-MA400 - 2901364

Technical data

Ambient conditions

Ambient temperature (storage/transport)	-20 °C ... 85 °C (-4 °F ... 185 °F)
Max. permissible relative humidity (operation)	≤ 95 %
Max. salt spray content	≤ 2.5 %
Degree of protection	IP52 (Front)
	IP30 (Back side)

Input data

Measuring principle	True r.m.s. value measurement
Acquisition of harmonics	up to 51st harmonic
Measured value	AC sine (50/60 Hz)
Input name	Voltage measuring input V1, V2, V3
Input voltage range	50 V AC ... 500 V AC (Phase/Phase)
	28 V AC ... 289 V AC (Phase/neutral conductor)
Precision	0.2 %
Input name	Current measurement I1, I2, I3
Input current range	via external transformers
Input current	9999 A (primary)
	5 A (secondary)
Current measuring range	0 A ... 9999 A
Overload capacity	6 A (Permanent)
Response threshold from measuring range nominal value	5 mA
Precision	0.2 %
Current overload	10 x I _N for 1 s
Messbereich_Leistung	0 MW ... 11 MW
	0 Mvar ... 11 Mvar
	0 MVA ... 11 MVA
Precision	0.5 %
Active energy (IEC 62053-22)	Class 0.5 S
Reactive power (IEC 62053-23)	Class 2

Output data

Output description	Via function module
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Interfaces

Designation	via communication module
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General

Display	LCD display, backlighting
Measuring rate	approximately
Supply voltage range	110 V AC ... 400 V AC ±10 %
	120 V DC ... 350 V DC (# 20 %)
Nominal power consumption	5 VA
Power consumption	10 VA (with max. number of extension modules)

Measuring instrument - EEM-MA400 - 2901364

Technical data

General

Mains type	3-phase (3 or 4-wire), 2-phase (2-wire), and single-phase (1-wire)
Color	black
Conformance	CE-compliant
Rated insulation voltage	300 V AC (EN 61010-1)
Test voltage	3.5 kV AC (50 Hz, 1 min.)
	2.2 kV AC (50 Hz, 1 min.)

UL data

Supply voltage	300 V AC
Nominal supply voltage range	110 V AC ... 240 V AC ±10 %
	120 V DC ... 250 V DC ±10 %
Power consumption	10 VA
Operating mode	Indoor use
Surge voltages	Transient overvoltage according to installation classes
Overvoltage category	I, II, III
Overvoltage category of the supply	Min. II
Altitude	≤ 2000 m
Ambient temperature (operation)	0 °C ... 40 °C
Max. permissible relative humidity (operation)	80 % (up to 31 °C)
	50 % (at 40 °C)

Standards and Regulations

Conformance	CE-compliant
UL, USA/Canada	UL 61010-1
	CSA-C22.2 No. 61010-1
	cULus

Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Classifications

eCl@ss

eCl@ss 4.0	27210900
eCl@ss 4.1	27210900
eCl@ss 5.0	27210900
eCl@ss 5.1	27210900
eCl@ss 6.0	27142300
eCl@ss 7.0	27142330
eCl@ss 8.0	27142330
eCl@ss 9.0	27142330

Measuring instrument - EEM-MA400 - 2901364

Classifications

ETIM

ETIM 4.0	EC002301
ETIM 5.0	EC002301
ETIM 6.0	EC002301
ETIM 7.0	EC002301

UNSPSC

UNSPSC 6.01	30211916
UNSPSC 7.0901	39121535
UNSPSC 11	39121535
UNSPSC 12.01	39121535
UNSPSC 13.2	39121535

Accessories

Accessories

Assembly adapter

DIN rail adapter - EEM-MKT-DRA - 2902078



DIN rail adapter for EEM-MA600 and EEM-MA400 energy meters

Communication module

Communication module - EEM-RS485-MA400 - 2901365



RS-485 JBUS/MODBUS communication module for EEM-MA400

Function module

Special function module - EEM-IMP-MA400 - 2904314



Function module with a pulse or alarm output for the EEM-MA400

UTILIZARE AUTORIZATA EXCLUSIV PENTRU PROIECTUL:
"CONSTRUCTIA SONDEI ARTEZIENE SI RETELELOR DE
ALIMENTARE CU APA DIN SATUL CAJBA,
RAIONUL GLODENI, REPUBLICA MOLDOVA"

Zertifizierungsvertrag

Grundlage für die Zertifikatserteilung ist die Prüf- und Zertifizierungsordnung von TÜV SÜD Product Service.

Mit Erhalt des Zertifikates erkennt der Zertifikatsinhaber die jeweils gültige Fassung der Prüf- und Zertifizierungsordnung an (www.tuev-sued.de/ps_regulations) und wird somit Partner im Zertifizierungssystem von TÜV SÜD Product Service.

Prinzipielle Voraussetzung für die Gültigkeit des Zertifikates:

- Gültigkeit der zitierten normativen Prüfgrundlage(n) ist gegeben und zusätzlich bei Zertifikaten mit Berechtigung zur Verwendung eines Prüfzeichens bzw. bei Zertifikaten für QM-Systeme:
- Voraussetzungen für vorschriftsmäßige Fertigung werden eingehalten.
- Die Fertigungs- bzw. Betriebsstätten werden regelmäßig überwacht.

Certification contract

Certification is based on the TÜV SÜD Product Service Testing and Certification Regulations. On receipt of the certificate the certificate holder agrees to the current version of the Testing and Certification Regulations (www.tuv-sud.com/ps_regulations) and thus becomes partner in the TÜV SÜD Product Service Certification System.

Requirements for the validity of the certificate in principle:

- Validity of the quoted test standard(s)
- In addition, for certificates with the right to use a certification mark and for QM certificates:
- Conditions for an adequate manufacturing are maintained
 - Regular surveillance of the facility is performed

认证合约

认证基于 TÜV SÜD 产品服务《测试及认证准则》。

获得证书即表明证书持有者接受当前版本的《测试及认证准则》(见 www.tuv-sud.com/ps_regulations) 并成为 TÜV SÜD 产品服务认证系统内的合作伙伴。

维持证书有效性的原则要求：

- 认证所依据标准的有效性
- 此外，对于授权可使用认证标志的证书和质量管理体系证书：
- 保持充分的生产条件
 - 生产场地通过定期的监督

認證契約

認證は TÜV SÜD Product Service の試験認証規約に基づく。認証書保持者は認証書を受領することにより最新の試験認証規約(www.tuv-sud.com/ps_regulations)に同意したものとする。その結果、TÜV SÜD Product Service 認証システムのパートナーとなる。

認證書の有効性に関する原則的な要求事項

- 引用している試験規格が有効である
- さらに認証マークの使用を許諾された認証書や品質マネジメント認証書は、
- 適切な製造の条件を維持している
 - 定期的な工場監査を実施している

Contrato de certificação

A certificação se baseia nos Regulamentos de Testes e Certificação do Grupo TÜV SÜD. Ao receber o certificado, o Fornecedor, titular do certificado concorda com a versão atual dos Regulamentos de Testes e Certificação do Grupo TÜV SÜD (www.tuv-sud.com/ps_regulations) e assim, torna-se parceiro no Sistema de Certificação de Produtos e Serviços TÜV SÜD.

Requisitos para a validade do certificado (em princípio):

- Validade da(s) norma(s) de ensaio(s) referenciada(s).
- Adicionalmente, para os certificados com o direito ao uso da marca de certificação e para certificados de SG:
- Condições de fabricação adequada estão mantidas.
 - Auditoria de monitoração realizada regularmente.

Certificate of Approval

This is to certify that the Management System of:

ELDON Romania SRL

4 Bruxelles Ave., Parc Industrial Prejmer - Graells & Lonch., 507165 Prejmer, Romania

has been approved by LRQA to the following standards:

ISO 9001:2015



Gilles Bessiere

Issued By: Lloyd's Register (Romania) (Srl) for and on behalf of: Lloyd's Register Quality Assurance Ltd

Current Issue Date: 7 November 2017

Expiry Date: 8 December 2020

Certificate Identity Number: 10036289

Original Approvals:

ISO 9001 – 9 December 2008

Approval Number(s): ISO 9001 – 0027386

The scope of this approval is applicable to:

Design, manufacture and distribution of enclosures and accessories for electrical, electronic, data and telecom applications.



001

Certificate of Approval

This is to certify that the Management System of:

ELDON Romania SRL

4 Bruxelles Ave., Parc Industrial Prejmer - Graells & Lonch., 507165 Prejmer, Romania

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ISO 14001:2015



Gilles Bessiere

Issued By: Lloyd's Register (Romania) (Srl) for and on behalf of: Lloyd's Register Quality Assurance Ltd

Current Issue Date: 7 November 2017

Expiry Date: 22 November 2020

Certificate Identity Number: 10036291

Original Approvals:

ISO 14001 – 23 November 2011

Approval Number(s): ISO 14001 – 0027546

The scope of this approval is applicable to:

Activities including and associated with design, manufacture and distribution of enclosures and accessories for electrical, electronic, data and telecom applications



001

Certificate of Approval

This is to certify that the Management System of:

ELDON Romania SRL

4 Bruxelles Ave., Parc Industrial Prejmer - Graells & Llonch., 507165 Prejmer, Romania

has been approved by LRQA to the following standards:

ISO 45001:2018



Gilles Bessiere - Area Technical Manager

Issued by: Lloyd's Register (Romania) (Srl)

for and on behalf of: Lloyd's Register Quality Assurance Limited

Current issue date: 5 November 2018

Expiry date: 12 November 2020

Certificate identity number: 10164878

Original approval(s):

ISO 45001 - 13 November 2017

Approval number(s): ISO 45001 - 00017279

The scope of this approval is applicable to:

Activities including and associated with design, manufacture and distribution of enclosures and accessories for electrical, electronic, data and telecom applications



001

Zertifizierungsvertrag

Grundlage für die Zertifikatserteilung ist die Prüf- und Zertifizierungsordnung von TÜV SÜD Product Service.

Mit Erhalt des Zertifikates erkennt der Zertifikatsinhaber die jeweils gültige Fassung der Prüf- und Zertifizierungsordnung an (www.tuev-sued.de/ps_regulations) und wird somit Partner im Zertifizierungssystem von TÜV SÜD Product Service.

Prinzipielle Voraussetzung für die Gültigkeit des Zertifikates:

- Gültigkeit der zitierten normativen Prüfgrundlage(n) ist gegeben und zusätzlich bei Zertifikaten mit Berechtigung zur Verwendung eines Prüfzeichens bzw. bei Zertifikaten für QM-Systeme:
- Voraussetzungen für vorschriftsmäßige Fertigung werden eingehalten.
- Die Fertigungs- bzw. Betriebsstätten werden regelmäßig überwacht.

Certification contract

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Requirements for the validity of the certificate in principle:

- Validity of the quoted test standard(s) In addition, for certificates with the right to use a certification mark and for QM certificates:
- Conditions for an adequate manufacturing are maintained
- Regular surveillance of the facility is performed

认证合约

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维持证书有效性的原则要求：

- 认证所依据标准的有效性
- 此外，对于授权可使用认证标志的证书和质量管理体系证书：
- 保持充分的生产条件
- 生产场地通过定期的监督

認證契約

認證是 TÜV SÜD Product Service の試験認證規約に基づく。認證書保持者は認證書を受領することにより最新の試験認證規約(www.tuv-sud.com/ps_regulations)に同意したものとする。その結果、TÜV SÜD Product Service 認証システムのパートナーとなる。

認證書の有効性に関する原則的な要求事項

- 引用している試験規格が有効である
- さらに認証マークの使用を許諾された認証書や品質マネジメント認証書は：
- 適切な製造の条件を維持している
- 定期的な工場監査を実施している

Contrato de certificação

A certificação se baseia nos Regulamentos de Testes e Certificação do Grupo TÜV SÜD. Ao receber o certificado, o Fornecedor, titular do certificado concorda com a versão atual dos Regulamentos de Testes e Certificação do Grupo TÜV SÜD (www.tuv-sud.com/ps_regulations) e assim, torna-se parceiro no Sistema de Certificação de Produtos e Serviços TÜV SÜD.

Requisitos para a validade do certificado (em princípio):

- Validade da(s) norma(s) de ensaio(s) referenciada(s).
- Adicionalmente, para os certificados com o direito ao uso da marca de certificação e para certificados de SG:
- Condições de fabricação adequada estão mantidas.
- Auditoria de monitoração realizada regularmente.



CERTIFICATE



This is to certify that

PHOENIX CONTACT Group

Flachsmarktstraße 8
32825 Blomberg
Germany

with the organizational units/sites as listed in the annex

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

Scope:

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, electronic interface systems, surge voltage protection, industrial communication and automation systems, software, cable assembly, tools, machines for special purposes, components, products, solutions and services for electrical engineering and automation, as well as services for functional safety, safety of machinery and operational reliability

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

ISO 50001 : 2011

Certificate registration no. 239330 EMSt
Valid from 2016-09-23
Valid until 2019-09-22
Date of certification 2016-09-16



DQS GmbH

Frank Graichen
Managing Director



**Annex to certificate
Registration No. 239330 EMSt**

PHOENIX CONTACT Group

Flachsmarktstraße 8
32825 Blomberg
Germany

Location

Scope

058140
PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstraße 8
32825 Blomberg
Germany

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, surge voltage protection, cable assembly, tools, machines for special purposes, components, products, solutions and services for electrical engineering and automation, sale of electronic interface systems, industrial communication and automation systems and software

061639
PHOENIX CONTACT ELECTRONICS GmbH
Dringenauer Straße 30
31812 Bad Pyrmont
Germany

Development, manufacturing and sale of electronic interface systems, industrial communication and automation systems, software, components and services for electrical engineering and automation, as well as services for functional safety, safety of machinery and operational reliability

003418
PHOENIX FEINBAU GmbH & Co. KG
Gustavstraße 3
58511 Lüdenscheid
Germany

Manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, components for electrical engineering and automation, development, manufacturing and sale of tools



Confirmation on quality assurance according to nuclear standard KTA 1401

On behalf of the German nuclear power plant operators,
PreussenElektra GmbH as a partner of the VGB PowerTech e.V.
working group Assessment of Contractors confirms

VGB
POWERTECH

Phoenix Contact Group

valid for the sites

Phoenix Contact GmbH & Co. KG
Flachsmarktstraße 8, D-32825 Blomberg

Phoenix Contact Electronics GmbH
Dringenauer Straße 30, D-31812 Bad Pyrmont

Phoenix Contact Deutschland GmbH
Flachsmarktstraße 8, D-32825 Blomberg

Phoenix Contact Power Supplies GmbH
Oberes Feld 1, D-33106 Paderborn

and the scope of supply and services

**Design, Manufacturing and Sale of Electrical and
Electronic Connecting Elements, Power Supply and
Surge Voltage Protection Modules, as well as
Electronic Interface Systems**

the qualification for system- and product related quality assurance.

The assessment was performed on 25 June 2019 by

Dr.-Ing. Götz Berenbrock Ingenieurbüro

based on the standard **KTA 1401** as well as on the assessment documents of the VGB PowerTech e.V. working group Assessment of Contractors in consideration of product related requirements.

Details of the assessment are given in the report DGBI 2019/011.

This confirmation is valid until **08 March 2022** provided that the conditions on which the assessment was based have not been changed.

Hanover, 27 June 2019

PreussenElektra GmbH

EnBW

Preussen
Elektra

RWE

Vattenfall Europe
Nuclear Energy

VATTENFALL



Certificate of Compliance

Certificate: 1442951

Master Contract: 183409

Project: 1442951

Date Issued: May 26, 2003

Issued to: Eldon B.V.
Tussendiepen 64-66
9206 AD DRACHTEN
THE NETHERLANDS

The products listed below are eligible to bear the CSA Mark shown



Authorized by: G. Foulem

PRODUCTS

CLASS 3211 07 – INDUSTRIAL CONTROL EQUIPMENT – Miscellaneous Apparatus

Industrial Control Panel Enclosures, for general purpose and special purpose applications, for floor standing and wall mounting

Series MCS.....;	Type 4, Type 12, Type 13
MCD.....;	Type 12, Type 13
MCI.....;	Type 4, Type 12, Type 13
MKS.....;	Type 4, Type 12, Type 13
MKD.....;	Type 12, Type 13
MAS.....;	Type 4, Type 12, Type 13
MAD.....;	Type 12
MAP.....;	Type 4, Type 12, Type 13 (enclosure with steel closed door only)

Certificate: 1442951

Master Contract: 183409

Project: 1442951

Date: May 26, 2003

General Notes

1. These are metal enclosures intended for use with industrial control equipment where the acceptability of the combination has been determined by the Canadian Standards Association.
2. The type designations are completed by suffixes indicating dimensions. Accessories as indicated in the Certification Report may be provided or supplied with.
3. The Certification of this submitter's enclosures covers mechanical parts only (no electrical parts are involved).

APPLICABLE REQUIREMENTS

- | | |
|------------------------------------|---|
| CSA Standard C22.2 No. 0 - M91 | - General Requirements |
| CSA Standard C22.2 No. 0.4 - M1982 | - Bonding and Grounding of Electrical Equipment |
| CSA Standard C22.2 No. 14 - 95 | - Industrial Control Equipment |
| CSA Standard C22.2 No. 94 - M91 | - Special Purpose Enclosures. |
- Electrical Certification Notices Nos. 587 and 587A.



Supplement to Certificate of Compliance

Certificate: 1442951

Master Contract: 183409

*The products listed, including the latest revision described below,
are eligible to be marked in accordance with the referenced Certificate.*

Product Certification History

Project	Date	Description
1442951	May 26, 2003	cCSAus original certification of types MCS.; MCD.; MCI.; MKS.; MKD.; MAS.; MAD.; MAP..

UTILIZARE EXCLUSIV PENTRU PROIECTUL:
"CONSTRUCTIA AUTORITATA
ALIMENTARE SONDEI ARTEZIENE SI RETELELOR DE
RAIONUL GLODENI, REPUBLICA MOLDOVA"



Declaration of Compliance

We: ELDON Group
P^o de la Finca 1, Ed 3
Madrid 28223

declare under our sole responsibility that the product ranges

MCS, MCD, MKS, MKD, EKS, EKD, Mild steel floorstanding enclosures
MCSS, MCDS, EKSS, EKDS, Stainless steel floorstanding enclosures
MAS, MAD, MAP, Mild steel wall mounted enclosures
ADR, AFS, ASR, Stainless steel wall mounted enclosures
STB, Mild steel terminal boxes
SSTB, Stainless Steel terminal boxes

to which this declaration relates, comply with the relevant requirements stated in the standard IEC 61439-1&2 :2011 (Low-voltage switchgear and controlgear assemblies – Part 1: General rules) for empty enclosures:

Section 8.1 Strength of material and parts

Section 8.2 Degree of protection

The compliance has been verified through the empty enclosures certification following the standard IEC 62208:2011 (Empty enclosures for low-voltage switchgear and controlgear assemblies – General requirements), which has been issued by DEKRA in the following certificates:

KEMA Certificate 2171237.01

MAS, MAD, MAP, ASR, ADR, AFS, MCS, MCD, MKS, MKD, MCSS, MCDS

KEMA Certificate 2171237.02

EKS, EKD, EKSS, EKDS

KEMA Certificate 2171237.03

STB, SSTB

In addition, ELDON also declares that an enclosures assembly, built using ELDON enclosures and accessories, and following the mounting instructions available on Eldon's website, complies with IEC 61439-1&2:2011 (Low-voltage switchgear and controlgear assemblies).

Madrid, 20th February 2017

José Antonio Rodríguez Salvador,
Product Manager

CERTIFICATE OF COMPLIANCE

Certificate Number 20140707-E92044
Report Reference E92044-20080308
Issue Date 2014-JULY-07

Issued to: ELDON GROUP
Paseo De La Finca 1
Edif 13
28223 Pozuelo De Alarcon SPAIN


This is to certify that representative samples of INDUSTRIAL CONTROL PANELS
See Addendum Page

Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.

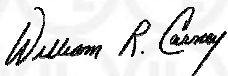
Standard(s) for Safety: UL 508A : standard for Industrial Control Panels
C22.2 No. 14-13 : standard for Industrial Control Equipment

Additional Information: See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Listing Mark for the US and Canada should be considered as being covered by UL's Listing and Follow-Up Service meeting the appropriate requirements for US and Canada.

The UL Listing Mark for the US and Canada generally includes: the UL in a circle symbol with "C" and "US" identifiers:  the word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Carney, Director, North American Certification Programs
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus



CERTIFICATE OF COMPLIANCE

Certificate Number 20140707-E92044
Report Reference E92044-20080308
Issue Date 2014-JULY-07

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

USL, CNL - Type 4, 4X, 12 and 13 Industrial Control Panel Enclosures. Enclosures provided with observation window are rated only Type 12 and 13.

Type 4, 12 and 13 Industrial Control Panel Enclosures, Console Desk Versions, Types MPC and MPG

Type 4, 12 and 13 Industrial Control Panel Enclosures, wall mounted versions, Types MAP and MAS

Type 4, 12 and 13 Industrial Control Panel Enclosures, floor standing versions, Types MCI, MCS, MKS, EKS

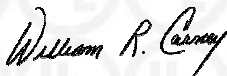
Type 4, 4X, 12 and 13 Industrial Control Panel Enclosures, floor standing versions, Types KSS

Type 4, 4X, 12 and 13 Industrial Control Panel Enclosures, wall mounted versions, Types AFS and ASR (single door versions only)

Type 4, 4X, 12 and 13 Industrial Control Panel Enclosures, Console Desk Versions, Types MPCS and MPGS (single door versions only)

Type 4, 4X, 12 and 13 Industrial Control Panel Enclosures, floor standing versions, Types EKSS, EKDS, MCSS.

Type 4, 4X, 12 and 13 Industrial Control Panel Enclosures, floor standing versions, Types EKOM, EKOM SW



William R. Carney, Director, North American Certification Programs
UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at www.ul.com/contactus



Declaratie de Conformitate

Nr. 553-0026

Noi, **EATON ELECTRIC SRL**

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

ca reprezentant unic în România al producătorilor din grupul Eaton,
în baza declarațiilor de conformitate emise de acestia,

declarăm pe propria răspundere ca produsele (familia):

Contactor, Reversing starter combination

DILM.-...

(declarația de conformitate se aplică pentru toate tipurile enumerate în catalogul nostru actual de produse)

sunt realizate în conformitate cu buna practică inginerască în materie de siguranță în vigoare în Uniunea Europeană, nu pun în pericol viața, sănătatea și securitatea persoanelor și a animalelor domestice, nu produc un impact negativ asupra mediului, cu condiția instalării și întreținerii în mod corespunzător, utilizării în scopul pentru care au fost create, respectării instrucțiunilor producătorului, standardelor specifice și a "bunelor practici ingineresti", și sunt conforme cu:

prevederile directivelor Uniunii Europene:

Low Voltage Directive 2014/35/EU

EMC Directive 2014/30/EU

și cu standardele Europene armonizate :

EN60947-4-1:2010, EN60947-5-1:2004+A1:2009



Bucuresti, Romania

25.04.2016

Razvan Sorescu

Quality, Environment,
Health & Safety
responsible

Gabriel Tache
Country Manager

Data de aplicare a marcatului CE:

Nr. document: 553-0026 / 25.04.2016



CERTIFICATE



This is to certify that the

PHOENIX CONTACT Group

for
PHOENIX CONTACT GmbH & Co. KG

Flachsmarktstraße 8
32825 Blomberg
Germany

with the organizational units/sites as listed in the annex

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

Scope:

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, electronic interface systems, surge voltage protection, industrial communication and automation systems, software, cable assembly, tools, machines for special purposes, components, products, solutions and services for electrical engineering and automation as well as services for functional safety, safety of machinery, and operational reliability

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

ISO 50001 : 2018

Certificate registration no.	239330 EMS18
Valid from	2019-09-27
Valid until	2022-09-26
Date of certification	2019-09-27



Deutsche
Akkreditierungsstelle
D-ZM-16074-01-00

DQS GmbH

Markus Bleher
Managing Director





Annex to certificate
Registration No. 239330 EMSt18

PHOENIX CONTACT Group
PHOENIX CONTACT GmbH & Co. KG

Flachsmarktstraße 8
32825 Blomberg
Germany

Location

Scope

058140
PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstraße 8
32825 Blomberg
Germany

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, surge voltage protection, cable assembly, tools, machines for special purposes, components, products, solutions and services for electrical engineering and automation, sale of electronic interface systems, industrial communication and automation systems and software

061639
PHOENIX CONTACT ELECTRONICS GmbH
Dringenauer Straße 30
31812 Bad Pyrmont
Germany

Development, manufacturing and sale of electronic interface systems, industrial communication and automation systems, software, components and services for electrical engineering and automation, as well as services for functional safety, safety of machinery, and operational reliability

003418
PHOENIX FEINBAU GmbH & Co. KG
Gustavstraße 3
58511 Lüdenscheid
Germany

Manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, components for electrical engineering and automation, development, manufacturing and sale of tools

UTI SA
"CONSTRUCTIA AUTORIZATA EXCLUSIV PENTRU PROIECTIA
ALIMENTARE SI APA DIN SATUL SAU SI REZELELE
RAJONUL BUCURESTI, REPUBLICA MOLDOVA"

EU-Konformitätserklärung Nr. 2901362.CE.01

EU-Declaration of Conformity No.

Hersteller / Manufacturer: **PHOENIX CONTACT GmbH & Co. KG**
 Anschrift / Address: **Flachsmarktstraße 8, 32825 Blomberg, Germany**

Produktbezeichnung / Product description: **EEM-MA200**
 (Artikelbezeichnung, / Article description, Artikel-Nr. / Article no.) **2901362**

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 61557-12:2008

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:
 The last two figures of the year in which the CE marking was applied: 17
 (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, 2017-07-27

i. A.

 Martin Jankowski
 Business Unit Interface Components
 Development Analog Interface, Monitoring
 Ansprechpartner / contact person

i. V.

 Carsten Thörner
 Business Unit Interface Components
 Vice President
 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.

Anhang zur EU-Konformitätserklärung Nr. 2901362.CE.01
Annex on EU Declaration of Conformity No.
vom / dated 2017-07-27

Produktbezeichnung / Product description: **EEM-MA200**

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

2901362

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
2901363	EEM-MA250
2901364	EEM-MA400
2901365	EEM-RS485-MA400
2901366	EEM-MA600
2901367	EEM-RS485-MA600
2901370	EEM-MEMO-MA600
2901371	EEM-2DIO-MA600
2901373	EEM-ETH-MA600
2901374	EEM-ETH-RS485-MA600
2901418	EEM-PB 12-MA600
2901475	EEM-2AO-MA600
2901949	EEM-TEMP-MA600
2902352	EEM-MA600-24DC
2904313	EEM-IMP-MA600
2904314	EEM-IMP-MA400

UTILIZARE AUTONOMA EXCLUSIV PENTRU PROIECTUL:
 "RECONSTRUCȚIA AUTOMATIZAREA SATEI SAU SATUL CAJBA,
 RAIONUL GLODENI, REPUBLICA MOLDOVA"



CERTIFICATE



This is to certify that

PHOENIX CONTACT Group

for
PHOENIX CONTACT GmbH & Co. KG

Flachsmarktstraße 8
32825 Blomberg
Germany

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality-, Environmental-,
Occupational Health and Safety Management System.**

Scope:

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, electronic interface systems, surge voltage protection, industrial communication and automation systems, software, cable assembly, tools, machines for special purposes, components, products, solutions and services for electrical engineering and automation as well as services for functional safety, for safety of machinery and for operational reliability

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

ISO 9001 : 2015

ISO 14001 : 2015

BS OHSAS 18001 : 2007

Certificate registration no.	239330 QM15 UM15 BSOH
Date of revision	2020-01-21
Valid from	2017-12-10
Valid until	2020-12-09
Date of certification	2020-01-21



DQS GmbH

Markus Bleher
Managing Director

UTILITARE AUTORIZATA
"CONSTRUCȚIA AUTORIZATA EXPERTIZĂ
ALIMENTARĂ SONDEZATĂ EXPERTIZĂ
RAIONUL BENDRII, RAIONUL SAJUBA
REȚEA SAJUBA SAJUBA SI REȚELELOR DE
MOLDOVA"





Annex to certificate
Registration No. 239330 QM15 UM15 BSOH

PHOENIX CONTACT Group
for
PHOENIX CONTACT GmbH & Co. KG

Flachsmarktstraße 8
32825 Blomberg
Germany



Location

Scope

058140
PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstraße 8
32825 Blomberg
Germany

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, surge voltage protection, cable assembly, tools, machines for special purposes, components, products, solutions and services for electrical engineering and automation, sale of electronic interface systems, industrial communication and automation systems and software

003418
PHOENIX FEINBAU GmbH & Co. KG
Gustavstraße 3
58511 Lüdenscheid
Germany

Manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, components for electrical engineering and automation, development, manufacturing and sale of tools

061639
PHOENIX CONTACT ELECTRONICS GmbH
Dringenauer Straße 30
31812 Bad Pyrmont
Germany

Development, manufacturing and sale of electronic interface systems, industrial communication and automation systems, software, components and services for electrical engineering and automation, as well as services for functional safety, safety of machinery, and operational reliability

325291
PHOENIX CONTACT Connector
Technology GmbH
Heisenbergstraße 1
71083 Herrenberg
Germany

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, cable assembly, components for electrical engineering and automation

UTILIZARE AUTORIZATA EXCLUSIV
"CONSULTANTA SONDEI ARTEZIENE SI ENERU PROIECTIA"
ALIMENTARE CU APA DIN SATEL SI ENERU PROIECTIA
RAIONUL CACIULENI, REPUBLICA MOLDOVA



Annex to certificate
Registration No. 239330 QM15 UM15 BSOH

PHOENIX CONTACT Group
for
PHOENIX CONTACT GmbH & Co. KG

Flachsmarktstraße 8
32825 Blomberg
Germany

Location

Scope

239355
PHOENIX CONTACT Wielkopolska
Sp.z.o.o.
ul. Celna 5
64-300 Nowy Tomysl
Poland

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, cable assembly, tools, components and services for electrical engineering and automation

319197
PHOENIX CONTACT Inc.
586 Fulling Mill Road
Middletown, PA 17057
USA

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, electronic interface systems, surge voltage protection, industrial communication and automation systems, software, cable assembly, components and services for electrical engineering and automation

322953
PHOENIX CONTACT Asia-Pacific (Nanjing)
Co., Ltd. / Nanjing Phoenix Contact Co.,
Ltd.
No.36, Phoenix Road, Nanjing Jiangning
Development Zone
211100, Nanjing, Jiangsu
P.R. China

Development, manufacture and sales of electromechanical and electrical connecting elements, plug connectors, electronic interface systems, surge voltage protection, industrial communication and automation systems, cable assembly, Assembly of electrical engineering and automation

UTILIZAREA AUTORIZATA EXCLUSIV
"CONSULTANTA SONDET ARTEZIENE SI PENTRU PROIECTAREA
ALIMENTATIA CU APA DIN SAIUL CAUTII
RAIONUL GLODENI, REPUBLICA MOLDOVA"

Communication module - EEM-RS485-MA400 - 2901365

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (<http://phoenixcontact.com/download>)


RS-485 JBUS/MODBUS communication module for EEM-MA400



Your advantages

- RS-485 (JBUS/MODBUS)

Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 584265
GTIN	4046356584265
Weight per Piece (excluding packing)	123.700 g
Custom tariff number	85176200
Country of origin	Hungary
Note	Made to Order (non-returnable)

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Width	22.5 mm
Height	65 mm
Depth	48 mm

Ambient conditions

Ambient temperature (operation)	-10 °C ... 55 °C (14 °F to 131 °F)
Ambient temperature (storage/transport)	-20 °C ... 85 °C (-4 °F ... 185 °F)
Max. permissible relative humidity (operation)	≤ 95 %
Max. salt spray content	≤ 2.5 %

Communication module - EEM-RS485-MA400 - 2901365

Technical data

Interfaces

Designation	Modbus RTU/JBUS
Interface	RS-485
Connection method	COMBICON plug-in screw terminal block
Connection technology	2, 3-wire
Transmission length	≤ 1200 m
Termination resistor	120 Ω (switchable via DIP switches)
Operating mode	semiduplex
Serial transmission speed	2,4 ... 38.4 kbps

General

Supply voltage	9 V (Via EEM-MA600/EEM-MA400)
Color	black
Conformance	CE-compliant
Rated insulation voltage	300 V AC (EN 61010-1)
Test voltage	3.5 kV AC (50 Hz, 1 min.)
	2.2 kV AC (50 Hz, 1 min.)

Standards and Regulations

Conformance	CE-compliant
UL, USA/Canada	UL 61010-1
	CSA-C22.2 No. 61010-1
	cULus

Environmental Product Compliance

China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Classifications

eCl@ss

eCl@ss 4.0	27371100
eCl@ss 4.1	27371100
eCl@ss 5.0	27371800
eCl@ss 5.1	27371800
eCl@ss 6.0	27149200
eCl@ss 7.0	27149223
eCl@ss 8.0	27149223
eCl@ss 9.0	27142336

ETIM

ETIM 4.0	EC002295
ETIM 5.0	EC002295

Communication module - EEM-RS485-MA400 - 2901365

Classifications

ETIM

ETIM 6.0	EC002295
ETIM 7.0	EC002295

UNSPSC

UNSPSC 6.01	30211916
UNSPSC 7.0901	39121535
UNSPSC 11	39121535
UNSPSC 12.01	39121535
UNSPSC 13.2	32151602
UNSPSC 19.0	32151602

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"CONSTRUCȚIA SONDEI ARTEZIENE SI REȚELELOR DE
ALIMENTARE CU APA DIN SATUL CAJBA,
RAIONUL GLODENI, REPUBLICA MOLDOVA"

Controller - ILC 151 GSM/GPRS - 2700977

Rețineți că datele furnizate aici sunt luate din catalogul online. Pentru informații și date complete, consultați documentația de utilizare. În cazul descărcărilor de pe internet se aplică Termenii și condițiile de utilizare generale. (<http://download.phoenixcontact.de>)



Inline Controller with Ethernet interface and GSM modem for coupling to other controllers and systems, with programming options according to IEC 61131-3, complete with plug and labeling field.

Descriere articol

The ILC 151 GSM/GPRS combines the options of class 100 controllers with wireless communication via mobile phone networks. A GSM/GPRS modem is integrated in the controller. This enables SMS messages to be sent and received and supports packet-oriented (IP) communication via GPRS.

The controller itself offers 16 digital inputs and 4 digital outputs for various control tasks. The 512 kB program memory and 512 kB data memory complete the functions of the controller, thereby providing plenty of space to accommodate larger applications as well.


The Inline controller (ILC) range covers a wide performance range. From entry-level versions to high-end controllers, users can choose the right controller for their application.

Caracteristici articol

- ✓ Numerous protocols supported such as: HTTP, FTP, SNMP, SMTP, SQL, MySQL, etc.
- ✓ Free engineering with PC Worx Express (IEC 61131-3)
- ✓ Complete INTERBUS master (4096 I/O points)
- ✓ Integrated web server for visualization with WebVisit
- ✓ FTP server
- ✓ Flash file system



Date comerciale

Unitate de ambalare	1 buc
GTIN	 4 046356 665537
Greutate pe bucată (fără ambalaj)	350.0 g
Cod tarif vamal	85371091
#ara de origine	Germany

Date tehnice

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Controller - ILC 151 GSM/GPRS - 2700977

Date tehnice

Dimensions

Width	85 mm
Height	119.8 mm
Depth	71.5 mm

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 55 °C
Ambient temperature (storage/transport)	-25 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (according to DIN EN 61131-2)
Permissible humidity (storage/transport)	10 % ... 95 % (according to DIN EN 61131-2)
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above mean sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above mean sea level)
Shock	25g, Criterion 1, according to IEC 60068-2-27
Vibration (operation)	5g

Control system

Programming tool	PC WORX / PC WORX EXPRESS
Diagnostics tool	DIAG+
Configuration tool	Config+ Version 1.01 or later

Mechanical design

Weight	285 g
Diagnostics display	No
Controller redundancy	No

Data interfaces

Interface	INTERBUS local bus (master)
Connection method	Inline data jumper
Transmission speed	500 kBaud / 2 MBaud umschaltbar
Interface	Ethernet 10Base-T/100Base-TX
Connection method	RJ45 socket
Transmission speed	10/100 MBit/s
Interface	GSM / GPRS
Connection method	SIM card, SMA antenna connection

Power supply

Typical current consumption	210 mA
Max. current consumption	860 mA (360 mA communications power + 500 mA analog voltage supply)
Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC
Residual ripple	± 5 %
Power dissipation	max. 5 W

Controller - ILC 151 GSM/GPRS - 2700977

Date tehnice

Fieldbus function

Amount of process data	max. 4096 Bit (INTERBUS)
Number of supported devices	max. 128
Number of local bus devices that can be connected	max. 63 (observe current consumption)
Number of devices with parameter channel	max. 16
Number of supported branch terminals with remote bus branch	max. 3

Direct I/Os

Input name	Digital inputs
Number of inputs	16
Connection method	Inline potential distributor
Description of the input	EN 61131-2 type 1 NPN/PNP
Output name	Digital outputs
Number of outputs	4
Connection method	2, 3, 4-wire
Maximum output current per channel	500 mA
Without analog input	yes
Without analog output	yes
Without pulse direction output	yes
Without counter input	yes

IEC 61131 runtime system

Programming tool	PC WORX / PC WORX EXPRESS
Program memory	512 kByte (43 K instructions (IL))
Mass storage	512 kByte
Retentive mass storage	48 kByte (NVRAM)
Number of control tasks	8
Realtime clock	Yes

General data

Processor	Altera Nios II 64 MHz
Diagnostics display	No

Clasificări

eCl@ss

eCl@ss 4.0	27240490
eCl@ss 4.1	27240490
eCl@ss 5.0	27242208
eCl@ss 5.1	27242208
eCl@ss 6.0	27242208
eCl@ss 7.0	27242208
eCl@ss 8.0	27242207

Controller - ILC 151 GSM/GPRS - 2700977

Clasificări

ETIM

ETIM 3.0	EC001423
ETIM 4.0	EC000236
ETIM 5.0	EC000236

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	43172018
UNSPSC 12.01	43201404
UNSPSC 13.2	43201404

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Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

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Uninterruptible power supply with integrated power supply unit, 5A, in combination with MINI-BAT/24/DC/1.3 AH, QUINT-BAT/24DC 3,4AH, 7,2AH or 12 AH

Product Description

The TRIO UPS module with integrated power supply is particularly space-saving: UPS module and power supply in one housing. Only one energy storage is required to complete the UPS system.

Energy storage with lead AGM technology buffers failures lasting up to two hours with 5 A load current.

Your advantages

- Autonomous – in the event of AC mains failure the industrial PC continues operating without interruption
- Time saving – when the supply voltage is restored, the industrial PC starts automatically



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 311809
GTIN	4046356311809
Weight per Piece (excluding packing)	1,147.000 g
Custom tariff number	85371091
Country of origin	China

Technical data

Dimensions

Width	60 mm
Height	130 mm
Depth	118 mm

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (> 55° C derating : 2.5%/K)
Ambient temperature (storage/transport)	-40 °C ... 80 °C

Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Technical data

Ambient conditions

Max. permissible relative humidity (operation)	95 % (at 25 °C, non-condensing)
Climatic class	3K3 (in acc. with EN 60721)
Degree of pollution	2

Input data

Nominal input voltage range	100 V AC ... 240 V AC
AC input voltage range	85 V AC ... 264 V AC (Derating < 90 V AC: 2.5%V)
Input voltage range DC	100 V DC ... 350 V DC (UL508: 100 ... 250 V)
Buffer time	adjustable: 0.5 min; 1 min; 2 min; 3 min; 5 min; 10 min; 15 min; 20 min; PC-Mode
Current consumption	1.1 A (230 V AC, maximum) 1.8 A (120 V AC, maximum)
Inrush current limiting/I ² t	< 1.3 A ² s
Mains buffering time	see diagram
Typical response time	150 ms (230 V AC) 200 ms (120 V AC)
Power factor (cos phi)	approx. 0.5
Protective circuit	Transient surge protection Varistor
Input fuse, integrated	6.3 A (slow-blow, internal)

Output data

Nominal output voltage	24 V DC
Setting range of the output voltage (U _{Set})	22.5 V DC ... 29.5 V DC (Network operation; in the buffer mode, dependent on the battery voltage of 27.9 V DC ... 19.2 V DC)
Nominal output current (I _N)	5 A (-25 °C ... 55 °C)
Derating	55 °C ... 70 °C (2.5%/K)
Output current limit	max. 6 A (Mains operation)
Control deviation	< 1 % (change in load, static 10 % ... 90 %)
Efficiency	> 88 % (230 V AC, network operation) > 86 % (120 V AC, network operation) > 86 % (Battery operation)
Residual ripple	< 10 mV _{PP}
Peak switching voltages nominal load	< 25 mV _{PP}
Connection in parallel	Yes, 2
Surge protection against internal surge voltages	< 35 V DC
Feedback voltage resistance	35 V DC

General

IQ technology	no
Net weight	1.1 kg
Memory medium	External, battery 1.3 Ah / 3.4 Ah / 7.2 Ah / 12 Ah
Insulation voltage input/output	4 kV (type test) 2 kV (routine test)

Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Technical data

General

Protection class	I
	> 596000 h (40 °C)
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	alignable: horizontally 0 mm, vertically 50 mm

Connection data, input

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Screw thread	M3

Connection data, output

Connection method	Screw connection
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Stripping length	8 mm
Screw thread	M3

Connection data for signaling

Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
Screw thread	M3

Charging process

Charge characteristic curve	I/U characteristic curve
Battery presence check/time interval	60 s
Charge current	0.2 A ... 1.5 A (Default 1.0 A)
End-of-charge voltage	25 V DC ... 30 V DC (Default 27.6 V DC)
Temperature compensation	0 mV/K ... 200 mV/K (42 mV/K by default)
Quality check of battery	4 h ... 200 h (Default 12 h)
Deep discharge protection	18 V DC ... 21 V DC (Default 19.2 V DC)

Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Technical data

Charging process

Alarm signaling threshold	18 V DC ... 30 V DC (Default 20.4 V DC)
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Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011 (EN 55022)
Noise immunity	EN 61000-6-2:2005
Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-2
Contact discharge	6 kV
Standards/regulations	EN 61000-4-3
Frequency range	80 MHz ... 2 GHz
Test field strength	10 V/m
Standards/regulations	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-6-3
	EN 61000-4-6
Frequency range	10 kHz ... 80 MHz
Voltage	10 V
Standards/regulations	EN 61000-4-11
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Standard - Electrical safety	EN 60950-1/VDE 0805 (SELV)
Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard – Safety extra-low voltage	EN 60950-1 (SELV)
	EN 60204 (PELV)
Standard - Safe isolation	DIN VDE 0100-410
Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment	EN 50178
Standard – Limitation of mains harmonic currents	EN 61000-3-2
Shipbuilding approval	DNV GL (EMC B)
UL approvals	UL/C-UL listed UL 508
	UL/C-UL Recognized UL 60950-1
Shock	18 ms, 30g, in each space direction (according to IEC 60068-2-27)
Vibration (operation)	< 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)
	15 Hz ... 150 Hz, 2.3g, 90 min.
Rail applications	EN 50121-4

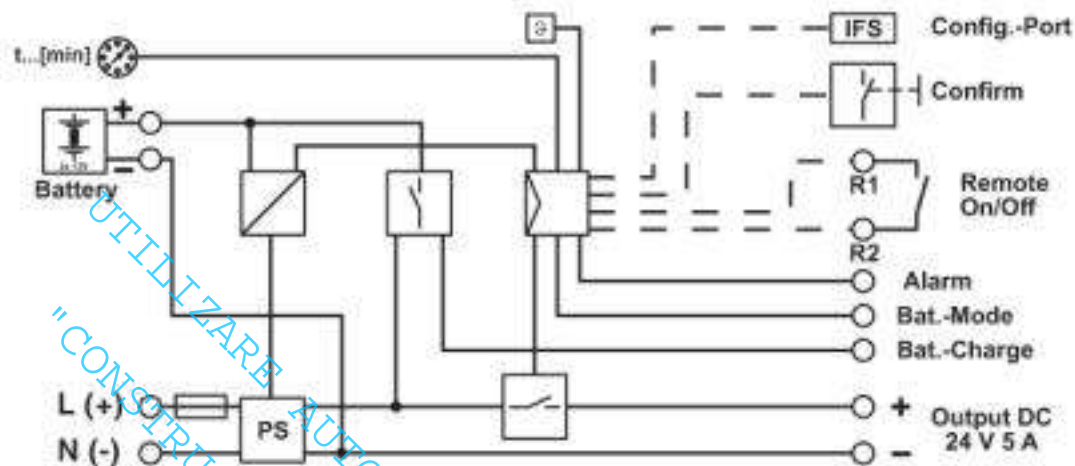
Environmental Product Compliance

China RoHS	Environmentally Friendly Use Period = 25;
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

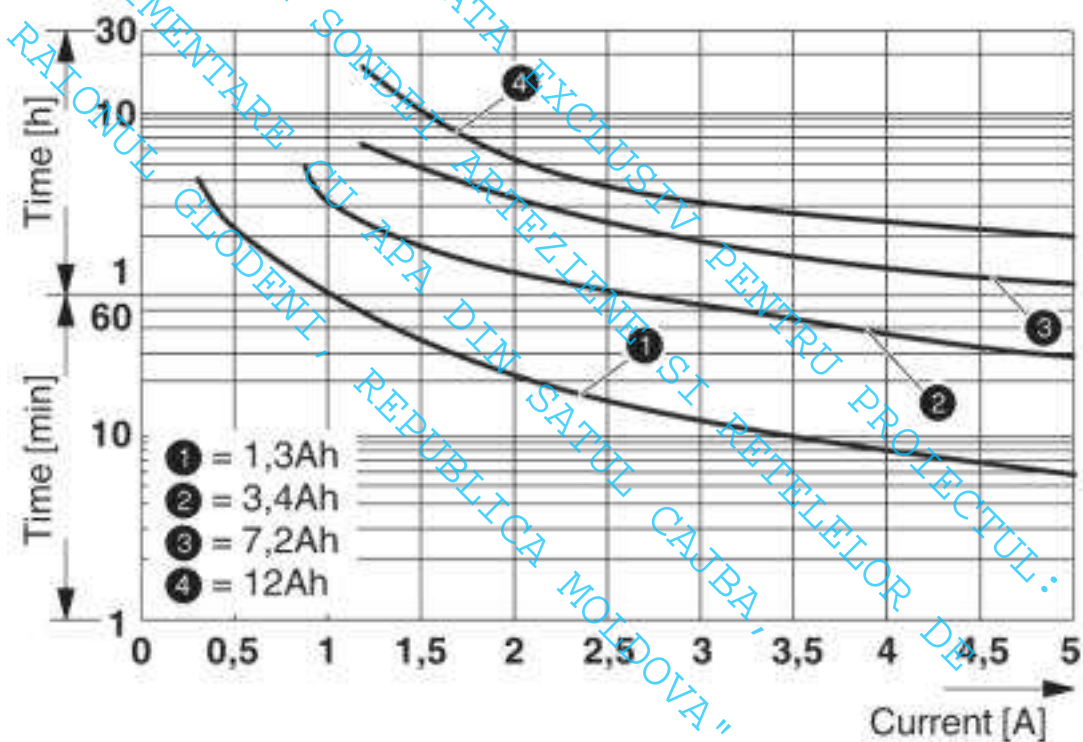
Drawings

Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Block diagram



Diagram



Classifications

eCl@ss

eCl@ss 4.0	27040600
eCl@ss 4.1	27040600
eCl@ss 5.0	27040600
eCl@ss 5.1	27040600

Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Classifications

eCl@ss

eCl@ss 6.0	27040600
eCl@ss 7.0	27040603
eCl@ss 8.0	27040603
eCl@ss 9.0	27040705

ETIM

ETIM 2.0	EC000382
ETIM 3.0	EC000382
ETIM 4.0	EC000382
ETIM 5.0	EC000382
ETIM 6.0	EC000382
ETIM 7.0	EC000382

UNSPSC

UNSPSC 6.01	30211510
UNSPSC 7.0901	39121011
UNSPSC 11	39121011
UNSPSC 12.01	39121011
UNSPSC 13.2	39121011
UNSPSC 18.0	39121011
UNSPSC 19.0	39121011
UNSPSC 20.0	39121011
UNSPSC 21.0	39121011

Approvals

Approvals

Approvals

DNV GL / PRS / UL Listed / UL Recognized / cUL Recognized / cUL Listed / EAC / EAC / cULus Recognized / cULus Listed

Ex Approvals

Approval details

DNV GL		https://approvalfinder.dnvgl.com/	TAA00000A2
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Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Approvals

PRS		http://www.prs.pl/	TE/2104/880590/16
UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 123528
UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 211944
cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 211944
cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 123528
EAC			EAC-Zulassung
EAC			RU*DE*08.B.01873/19
cULus Recognized			
cULus Listed			

Accessories

Accessories

Assembly adapter

Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Accessories

Assembly adapters - QUINT-PS-ADAPTERS7/2 - 2938206

Assembly adapter for QUINT POWER 10A on S7-300 rail



Assembly adapters - UWA 182/52 - 2938235

Universal wall adapter for securely mounting the device in the event of strong vibrations. The device is screwed directly onto the mounting surface. The universal wall adapter is attached on the top/bottom.



Battery unit

Energy storage - MINI-BAT/24DC/1.3AH - 2866417



Energy storage device, lead AGM, VRLA technology, 24 V DC, 1.3 Ah.

Energy storage - QUINT-BAT/24DC/ 3.4AH - 2866349



Energy storage device, lead AGM, VRLA technology, 24 V DC, 3.4 Ah. Connection via pin cable lug, 14 mm.

Energy storage - QUINT-BAT/24DC/ 7.2AH - 2866352



Energy storage device, lead AGM, VRLA technology, 24 V DC, 7.2 Ah. Connection via pin cable lug, 14 mm.

Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Accessories

Energy storage - QUINT-BAT/24DC/12AH - 2866365



Energy storage device, lead AGM, VRLA technology, 24 V DC, 12 Ah. Connection via pin cable lug, 14 mm.

Energy storage - UPS-BAT/VRLA/24DC/1.3AH - 2320296



Energy storage device, lead AGM, VRLA technology, 24 V DC, 1.3 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Energy storage - UPS-BAT/VRLA/24DC/3.4AH - 2320306



Energy storage device, lead AGM, VRLA technology, 24 V DC, 3.4 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Energy storage - UPS-BAT/VRLA/24DC/7.2AH - 2320319



Energy storage device, lead AGM, VRLA technology, 24 V DC, 7.2 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Energy storage - UPS-BAT/VRLA/24DC/12AH - 2320322



Energy storage device, lead AGM, VRLA technology, 24 V DC, 12 Ah, tool-free battery replacement, automatic detection, and communication with QUINT UPS-IQ

Data cable preassembled

Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Accessories

Data cable - IFS-USB-DATACABLE - 2320500



Used for communicating between industrial PCs and Phoenix Contact devices with the 12-pos. IFS data port, such as QUINT UPS or TRIO UPS.

Fuse

Fuse - SI FORM C 15 A DIN 72581 - 0913676



Flat-type plug-in fuse, type C, color code: light blue, nominal current: 15 A

Fuse - SI FORM C 25 A DIN 72581 - 0913757



Flat-type plug-in fuse, type C, color code: white, nominal current: 25 A

Memory block

Memory block - IFS-CONFSTICK-L - 2901103



Multi-functional memory block with handle for the INTERFACE system; for easy storage and back up of the configuration.

Memory block - IFS-CONFSTICK - 2986122



Multi-functional memory block for the INTERFACE system for easy storage and backup of the configuration.

Mounting rail adapter

Uninterruptible power supply - TRIO-UPS/1AC/24DC/5 - 2866611

Accessories

DIN rail adapter - UTA 107 - 2853983

Universal DIN rail adapter, for screwing on switchgear



Programming adapter

Programming adapter - JFS-USB-PROG-ADAPTER - 2811271



Programming adapter with USB interface, for programming with software. The USB driver is included in the software solutions for the products to be programmed, such as measuring transducers or motor managers.

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Touch panel - BTP 2070W - 1046666

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Touch panel with 17.8 cm/7" TFT-display (analog resistive (polyester)), 800 x 480 pixel(s) (WVGA), 262144 colors, Arm9™ i.MX28, 454 MHz, 2x COM (RS-232/422/485), 1x USB 2.0, Typ A, 1x USB 2.0, Typ B, 1 x Ethernet (10/100 Mbps), RJ45, Windows® CE 6.0 and user software: Visu+. (bus system: without)

Your advantages

- ✓ Visu+ RT integrated as standard in all BTP 2000 devices
- ✓ Connection to all relevant control systems, thanks to a large number of available drivers
- ✓ Developed for basic applications with attractive price/performance ratio
- ✓ 3 display sizes in 16:9 format

RoHS

Key Commercial Data

Packing unit	1 ps
GTIN	 4 055626 642963
GTIN	4055626642963

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Outer dimensions: width, height, depth	186 mm x 138 mm x 5 mm (Dimensions of the front plate)
Installation dimensions: width, height, depth	175 mm x 127 mm x 31 mm (Installation cutout)

Display

Display	17.8 cm/7" TFT
Screen resolution	800 x 480 Pixel(s) (WVGA)
Touch technology	analog resistive (polyester)
Brightness	300 cd/m ² , typical (adjustable)
Backlighting	LED
Display backlight MTBF	20000 h

Touch panel - BTP 2070W - 1046666

Technical data

Display

Colors	262144 colors
Reading angle left	70 °
Reading angle right	70 °
Reading angle top	50 °
Reading angle bottom	70 °

Computer data

Processor	Arm9™ i.MX28, 454 MHz
Operating system	Windows® CE 6.0
User software	Visu+
RAM	128 MB DDR2 SDRAM
Mass storage	Flash, 512 MB
Network	1 x Ethernet (10/100 Mbps), RJ45
Interfaces	2x COM (RS-232/422/485)
	1x USB 2.0, Typ A
	1x USB 2.0, Typ B
Bus system	without
Slots	1x SD

General

Housing material	Plastic
Mounting type	Front installation
Weight	400 g

Ambient conditions

Degree of protection	IP66 (on the front), IP20 (on the back)
Ambient temperature (operation)	0 °C ... 50 °C
Ambient temperature (storage/transport)	-20 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)
Vibration (operation)	DIN EN 60068-2-6
Shock	DIN EN 60068-2-27

Device supply

Typical current consumption	0.4 A
Power supply unit	24 V DC ±15 %

Standards and Regulations

Shock	DIN EN 60068-2-27
Vibration (operation)	DIN EN 60068-2-6

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
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Touch panel - BTP 2070W - 1046666

Approvals

Approvals

Approvals

EAC

Ex Approvals

UL Listed / cUL Listed / cULus Listed

Approval details

EAC		RU C- DE.A*08.B01708
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Accessories

Accessories

Data plug

D-SUB gender changer - VS-09-GC-ST/ST - 1652651



D-SUB contact insert, shell size 1, with nine signal contacts, type of contact pin, gender changer, fixing with 4-40 UNC thread

Operating stylus

Touch pen - TOUCH PEN - 2701379



Touch pen for analog-resistive HMI, silver coated. Delivery includes self-adhesive pen holder.

PCB plug

Touch panel - BTP 2070W - 1046666

Accessories

Printed-circuit board connector - MSTB 2,5/ 3-STF-5,08 - 1777992

PCB connector, nominal current: 12 A, rated voltage (III/2): 320 V, nominal cross section: 2.5 mm², number of positions: 3, pitch: 5.08 mm, connection method: Screw connection with tension sleeve, color: green, contact surface: Tin



Storage medium

USB memory stick - USB FLASH DRIVE - 2402809



USB memory stick, 8 GB

Disk drive - MICROSDHC-16GB - 1154696



Industrial grade 16 GB MicroSDHC 3DTLC

Disk drive - MICROSDHC-32GB - 1154699



Industrial grade 32 GB MicroSDHC 3DTLC

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Declaration of Compliance

We: ELDON Group
Pº de la Finca 1, Ed 3
Madrid 28223

declare under our sole responsibility that the product ranges

MCS, MCD, MKS, MKD, MCF, MCI Mild steel floorstanding enclosures
MCSS, MCDS, EKSS, EKDS, Stainless steel floorstanding enclosures
MAS, MAD, MAP, Mild steel wall mounted enclosures
ADR, AFS, ASR, Stainless steel wall mounted enclosures
STB, Mild steel terminal boxes
SSTB, Stainless Steel terminal boxes

to which this declaration relates, comply with the relevant requirements stated in the standard IEC 61439-1&2 :2011 (Low-voltage switchgear and controlgear assemblies – Part 1: General rules) for empty enclosures:

Section 8.1 Strength of material and parts
Section 8.2 Degree of protection

The compliance has been verified through the empty enclosures certification following the standard IEC 62208:2011 (Empty enclosures for low-voltage switchgear and controlgear assemblies – General requirements), which has been issued by DEKRA in the following certificates:

KEMA Certificate 2171237.01

MAS, MAD, MAP, ASR, ADR, AFS, MCS, MCD, MCF, MCI, MKS, MKD, MCSS, MCDS

KEMA Certificate 2171237.02


EKSS, EKDS

KEMA Certificate 2171237.03

STB, SSTB

In addition, ELDON also declares that an enclosures assembly, built using ELDON enclosures and accessories, and following the mounting instructions available on Eldon's website, complies with IEC 61439-1&2:2011 (Low-voltage switchgear and controlgear assemblies)

Madrid, 31th August 2018



José Antonio Rodríguez Salvador,
Product Manager

EU-Konformitätserklärung Nr. 2700977.CE.04

EU-Declaration of Conformity No. 2700977.CE.04

Hersteller / Manufacturer: PHOENIX CONTACT GmbH & Co. KG
 Anschrift / Address: Flachsmarktstraße 8, 32825 Blomberg, Germany

Produktbezeichnung / Product description: **ILC 151 GSM/GPRS**
(Artikelbezeichnung, / Article description, Artikel-Nr. / Article-/Part no.) **2700977**

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)
2014/34/EU	Geräte in explosionsgefährdeten Bereichen Equipment for explosive atmospheres (ATEX)
2014/53/EU	Funkanlagen Radio equipment (RED)

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

EN 61131-2:2007	EN 61000-6-2:2005+AC:2005	EN 61000-6-4:2007+A1:2011 *
EN 60079-0:2012+A11:2013	EN 60079-15:2010	EN 60950-1:2006+A11:2009+A1:2010+A12:2011+A2:2013
EN 62311:2008	EN 301 489-01 V2.1.1	EN 301 489-52 V1.1.0
EN 301 511 V12.5.1	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: _____

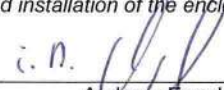

Anschrift / Address: _____

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.

Blomberg, 2019-09-17

 _____ Andreas Engel Business Unit Automation Systems Manager Hardware SSC und PN Device <small>Ansprechpartner / contact person ¹</small>	 _____ Dr. Tobias Frank Business Unit Automation Systems Vice President <small>Zeichnungsberechtigter / authorized signatory</small>
---	--

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.



C E R T I F I C A T E

awarded to

Phoenix Contact GmbH & Co.KG
Flachsmarktstr. 8
32825, Blomberg
Germany

DQS GmbH

confirms, as an IRIS CertificationTM approved certification body, that the Management System of the above organization has been assessed and found to be in accordance with the

IRIS CertificationTM rules:2017
and based on
ISO/TS 22163:2017

for the activities of Design and Development and Manufacturing
for the scopes of certification: 12 (Electrical wiring), 19 (Single railway components)
electromechanical and electrical connecting elements, plug connectors, surge voltage protection, cable assembly, tools and components for electrical engineering

Certificate valid from: 04/03/2018

Certificate valid until: 03/03/2021*

Current date: 06/03/2018
Certificate-Register-No: 239330

* Providing that the subsequent surveillance audits are successful before the validity date of the previous audit.

Certification body address: August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany



Enclosure 1 of Certificate No.: 239330

Phoenix Contact GmbH & Co.KG
Flachsmarktstr. 8
32825, Blomberg
Germany

The location is supported by the following remote locations:

Address	Scope/Process
Phoenix Contact GmbH & Co. KG Bahnhofstr. 9 32816 Schieder-Schwalenberg, Germany	Logistics, Professional Education

Stefan Herlich

Current date: 06/03/2018
Certificate-Register-No: 239330

UTILEȘIRI AUTORIZATE
"CONSTRUCTIA ȘCOLII EXCLUSIV PENTRU PROIECTUL:
ALIMENTARE ȘCOLII ARTIZIENE ȘI REȚELELOR DE
RAIONUL ȘCOLII, REPUBLICA MOLDOVA"

* Providing that the subsequent surveillance audits are successful before the validity date of the previous audit.

Certification body address: August-Schanz-Straße 21, 60433 Frankfurt am Main, Germany



CERTIFICATE



This is to certify that

PHOENIX CONTACT Group

Flachsmarktstraße 8
32825 Blomberg
Germany

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality-, Environmental-, Occupational Health and Safety Management System.**

Scope:

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, electronic interface systems, surge voltage protection, industrial communication and automation systems, software, cable assembly, tools, machines for special purposes, components, products, solutions and services for electrical engineering and automation as well as services for functional safety, for safety of machinery and for operational reliability

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

ISO 9001 : 2015
ISO 14001 : 2015
BS OHSAS 18001 : 2007

Certificate registration no.	239330 QM15 UM15 BSOH
Valid from	2017-12-10
Valid until	2020-12-09
Date of certification	2017-12-08



DQS GmbH

Stefan Heinloth
Managing Director



Annex to certificate
Registration No. 239330 QM15 UM15 BSOH

PHOENIX CONTACT Group

Flachsmarktstraße 8
32825 Blomberg
Germany

Location

Scope

058140
PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstraße 8
32825 Blomberg
Germany

ISO 9001:2015
ISO 14001:2015
BS OHSAS 18001:2007
certified

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, surge voltage protection, cable assembly, tools, machines for special purposes, components, products, solutions and services for electrical engineering and automation, sale of electronic interface systems, industrial communication and automation systems and software

003418
PHOENIX FEINBAU GmbH & Co. KG
Gustavstraße 3
58511 Lüdenscheid
Germany

ISO 9001:2015
ISO 14001:2015
BS OHSAS 18001:2007
certified

Manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, components for electrical engineering and automation, development, manufacturing and sale of tools

061639
PHOENIX CONTACT ELECTRONICS GmbH
Dringenauer Straße 30
31812 Bad Pyrmont
Germany

ISO 9001:2015
ISO 14001:2015
BS OHSAS 18001:2007
certified

Development, manufacturing and sale of electronic interface systems, industrial communication and automation systems, software, components and services for electrical engineering and automation, as well as services for functional safety, safety of machinery, and operational reliability

325291
PHOENIX CONTACT Connector
Technology GmbH
Heisenbergstraße 1
71083 Herrenberg
Germany

ISO 9001:2015
ISO 14001:2015
BS OHSAS 18001:2007
certified

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, cable assembly, components for electrical engineering and automation





Annex to certificate
Registration No. 239330 QM15 UM15 BSOH

PHOENIX CONTACT Group

Flachsmarktstraße 8
32825 Blomberg
Germany

Location

Scope

239355
PHOENIX CONTACT Wielkopolska
Sp.z.o.o.
ul. Cejna 5
64-300 Nowy Tomysl
Poland

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, cable assembly, tools, components and services for electrical engineering and automation

ISO 9001:2015
ISO 14001:2015
BS OHSAS 18001:2007
certified

319197
PHOENIX CONTACT Inc.
586 Fulling Mill Road
Middletown, PA 17057
USA

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, electronic interface systems, surge voltage protection, industrial communication and automation systems, software, cable assembly, components and services for electrical engineering and automation

ISO 9001:2015
ISO 14001:2015
BS OHSAS 18001:2007
certified

322953
PHOENIX CONTACT Asia-Pacific (Nanjing)
Co., Ltd. / Nanjing Phoenix Contact Co.,
Ltd.
No.36, Phoenix Road, Nanjing Jiangning
Development Zone
211100, Nanjing, Jiangsu
P.R. China

Development, manufacture and sales of electromechanical and electrical connecting elements, plug connectors, electronic interface systems, surge voltage protection, industrial communication and automation systems, cable assembly, Assembly of electrical engineering and automation

ISO 9001:2015
ISO 14001:2015
BS OHSAS 18001:2007
Certified

493978
PHOENIX CONTACT Industria e Comercio
Ltda
Rua Francisco Corazza, 20 a 100
São Paulo 05038-130
Brazil

Development, manufacturing and sale of electromechanical and electrical connecting elements, plug connectors, electronic interface systems, surge voltage protection, industrial communication and automation systems, software, cable assembly, components and services for electrical engineering and automation

ISO 9001:2015
certified

This annex (edition: 2017-12-08) is only valid in connection with the above-mentioned certificate.



Lloyd's
Register

Type Approval Certificate

This is to certify that the undernoted product(s) has/have been tested with satisfactory results in accordance with the relevant requirements of the Lloyd's Register Type Approval System.

This certificate is issued to:

PRODUCER SC ELDON SRL
Calle Bruxelles no.4
Graells & Llonch Prejmer Industrial Park
Prejmer County
507165 postal code
Brasov city
Romania

PRODUCT DESCRIPTION

Floor standing enclosures

TYPE

MKS (E) series, mild steel, single door
Degree of protection IP 66.

MKD (E) series, Mild steel, double doors
Degree of protection IP 55

MCS (E) series, mild steel, single door with side panels as accessory
Degree of protection IP 56 with front doors and side panels.

Certificate No.

19/30016

Issue Date

21 October 2019

Expiry Date

31 March 2024

Sheet

1 of 2

Lloyd's Register EMEA
P.O. Box 701, 3000 AS Rotterdam

G.J.Vromans
Type Approval Department
Lloyd's Register EMEA/Rotterdam Office

This is a copy of an electronic document. In the event of any conflict or ambiguity between the copy and the electronic document, which is retained and published by Lloyd's Register, the original electronic and certified version shall always prevail.

MCD (E) series, Mild steel , double doors, with side panels as accessory
Degree of protection IP 55 with front doors and side panels.

MCI series, Mild steel with door and side panels as accessory
Degree of protection IP 56 with door and side panels.

MCSS series, stainless steel with door and side panels as accessory

MCDS series, stainless steel with double door and side panels as accessory

EKSS series, stainless steel with door and side panels as accessory

EKDS series, stainless steel with double door and side panels as accessory

marine use

APPLICATION

"This Certificate is not valid for equipment, the design, ratings or operating parameters of which have been varied from the specimen tested. The manufacturer should notify Lloyd's Register EMEA of any modification or changes to the equipment in order to obtain a valid certificate."

The attached Design Appraisal Document No. ROT.TA. BBO1602085 and its supplementary Type Approval Terms and Conditions form part of this Certificate.

All other details remain as the previous Certificate No. 05730022 to which this extension should be attached.

Certificate No.	19/30016
Issue Date	21 October 2019
Expiry Date	31 March 2024
Sheet	2 of 2

Lloyd's Register EMEA
P.O. Box 701, 3000 AS Rotterdam

C.J. Vromans
Type Approval Department
Lloyd's Register EMEA Rotterdam Office



DECLARATIE DE CONFORMITATE CE

Nr. 553-0010

Noi, **EATON ELECTRIC SRL**

cu sediul în București, sos. București – Ploiești nr. 42-44,
Baneasa Business & Technology Park, clădirea B2, et.3, sector 1, 013696

ca reprezentant unic în România al producătorilor din grupul Eaton,
în baza declarațiilor de conformitate emise de aceștia,

declaram pe propria răspundere ca produsele (familia):

Eaton - Circuit Breaker

LZM1-I,

(declarația de conformitate se aplică pentru toate tipurile enumerate în catalogul nostru actual de produse)

sunt realizate în conformitate cu buna practică inginerască în materie de siguranță în vigoare în Uniunea Europeană, nu pun în pericol viața, sănătatea, securitatea persoanelor și a animalelor domestice, nu produc un impact negativ asupra mediului, cu condiția instalării și întreținerii în mod corespunzător, utilizării în scopul pentru care au fost create, respectării instrucțiunilor producătorului, standardelor specifice și a "bunelor practici ingineresti", și sunt conforme cu:

prevederile directivelor Uniunii Europene:

Low Voltage Directive 2014/35/EU

RoHS Directive 2011/65/EU

și cu standardele Europene armonizate :

EN60947-2/06 + A1/09 + A2/13, EN60947-1/07 + A1/11



București, România

25.04.2016

Razvan Sorescu

Quality, Environment,
Health & Safety
responsible

Gabriel Tache
Country Manager

Data de aplicare a marcatului CE: 2004

Nr. document: 553-0010 / 25.04.2016

DECLARATIE DE CONFORMITATE CE

Nr. 553-0011

Noi, **EATON ELECTRIC SRL**

cu sediul în București, sos. București – Ploiești nr. 42-44,
Baneasa Business & Technology Park, clădirea B2, et.3, sector 1, 013696

ca reprezentant unic în România al producătorilor din grupul Eaton,
în baza declarațiilor de conformitate emise de aceștia,

declaram pe propria răspundere ca produsele (familia):

Eaton - Circuit Breaker

LZM2-I,

(declarația de conformitate se aplică pentru toate tipurile enumerate în catalogul nostru actual de produse)

sunt realizate în conformitate cu buna practică inginerască în materie de siguranță în vigoare în Uniunea Europeană, nu pun în pericol viața, sănătatea, securitatea persoanelor și a animalelor domestice, nu produc un impact negativ asupra mediului, cu condiția instalării și întreținerii în mod corespunzător, utilizării în scopul pentru care au fost create, respectării instrucțiunilor producătorului, standardelor specifice și a "bunelor practici ingineresti", și sunt conforme cu:

prevederile directivelor Uniunii Europene:

Low Voltage Directive 2014/35/EU

EMC Directive 2014/30/EU

RoHS Directive 2011/65/EU

și cu standardele Europene armonizate :

EN60947-2/06 + A1/09 + A2/13, EN60947-1/07 + A1/11



București, România

25.04.2016

Razvan Sorescu

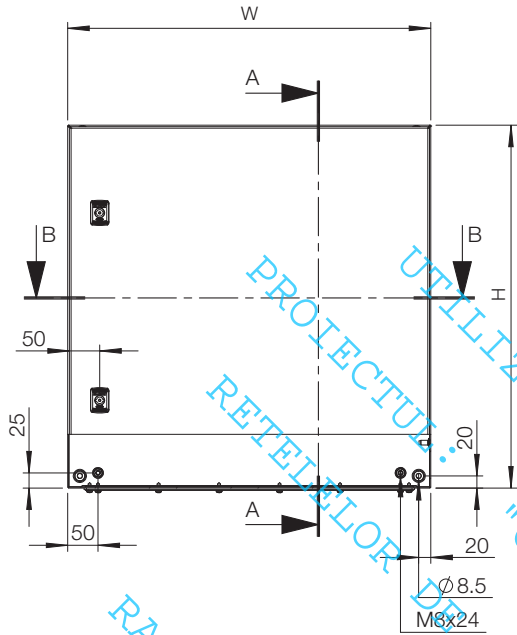
Quality, Environment,
Health & Safety
responsible

Gabriel Tache
Country Manager

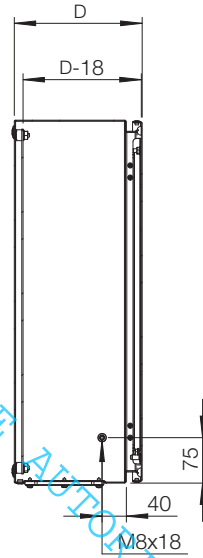
Data de aplicare a marcajului CE: 2004

Nr. document: 553-0011 / 25.04.2016

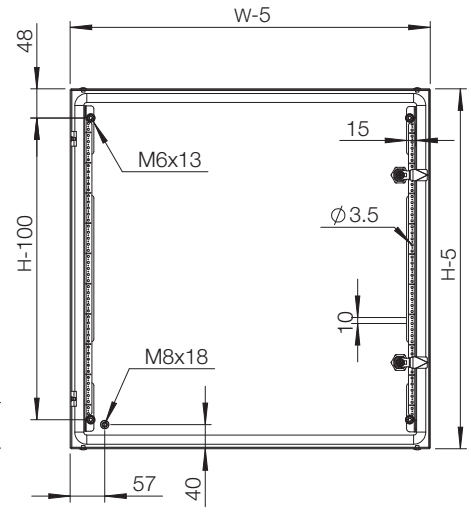
Front view



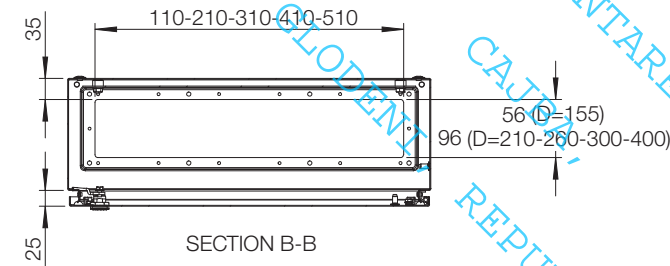
Sectional side view



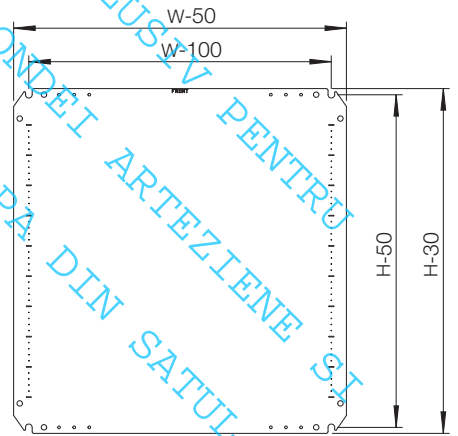
Inside door view



Sectional top view



Mounting plate view



SECTION B-B

SECTION A-A

Manufacturer Declaration

Functional Safety

No. A5E47062524A - 001

Manufacturer: Siemens AG
Process Industries and Drives
Process Automation

Address: DE-76181 Karlsruhe

Product description: SITRANS F M MAG 5000 + MAG 3100 Flowmeter
7ME6910-**-**** MAG 5000**
7ME6310-**-a** MAG 3100**
a=A,B,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) = \pm [application specific measuring error + 2% safety accuracy of full span].

The SITRANS F M Product Manual shall be observed.

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, 18.03.2019

Siemens Aktiengesellschaft

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

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



Signature / Unterschrift



Signature / Unterschrift

Herstellereklärung Funktionale Sicherheit

Nr. A5E47062524A - 001

Hersteller: Siemens AG
Process Industries and Drives
Process Automation

Anschrift: DE-76181 Karlsruhe

Produktbezeichnung SITRANS F M MAG 5000 + MAG 3100 Durchflussmesser
7ME6910-****-**** MAG 5000
7ME6310-****-**a** MAG 3100
a=A,B,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) = \pm [applikationsspezifischer Messfehler + 2% Sicherheitsgenauigkeit bezogen auf die volle Messspanne].

Die Anweisungen des SITRANS F M Produkthandbuches müssen befolgt werden.

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, 18.03.2019

Siemens Aktiengesellschaft

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

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



Signature / Unterschrift



Signature / Unterschrift

SIL Declaration of Conformity / SIL Konformitätserklärung

Product description: Flowmeter / Durchflussmesser
Produktbezeichnung SITRANS F M MAG 5000 + MAG 3100 (4-20 mA)
7ME6910-**-**** MAG 5000**
7ME6310-**-a** MAG 3100**
a=A,B,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)	$5.07 \cdot 10^{-4}$
PFH	$2.88 \cdot 10^{-7}$
SFF Safe Failure Fraction	64 %
DC Diagnostic Coverage	60 %
λ_D Dangerous Failure Rate	287 FIT
λ_{DD} Dangerous detected Failure Rate	172 FIT
λ_{DU} Dangerous undetected Failure Rate	115 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 Alarmer des Gerätes müssen als Fehlerstrom über den Analogausgang 4-20 mA ausgegeben werden.



IP 66 | TYPE 4, 12, 13 | IK 10



Gama de cofrete din oțel cu ușă simplă MAS, cu grad de protecție IP 66, conține produse de stoc disponibile în numeroase dimensiuni diferite. Această gamă de cofrete este bine adecvată pentru numeroase aplicații diferite. Riscul de defectare a componentelor și, cu acesta, perioadele inutile de nefuncționare sunt eliminate, deoarece apa și praful sunt împiedicate să intre în cofret.

Material: Corp: Oțel de 1,2 mm pentru cofrete cu o adâncime de 155 mm / 1,4 mm pentru cofrete cu o adâncime de 210 sau 260 mm / 1,5 mm pentru cofrete cu o adâncime de 300 sau 400 mm sau în cazul în care înălțimea sau lățimea este de 1000 mm sau mai mare. Presetupă cabluri: Oțel de 1,4 mm. Ușă: Oțel de 1,2 mm / 1,5 mm pentru cofrete cu o înălțime sau lățime de 500 mm sau mai mare / 2 mm pentru cofrete cu o înălțime sau lățime de 800 mm sau mai mare. Contrapanou: Oțel galvanizat de 2 mm.

Corp: Pliat și sudat pe margini. Patru orificii cu diametrul de 8.5 mm pentru fixare pe perete, ștanțate în exterior cu diametrul de 20.4 mm x 2 mm, pentru a permite circulația aerului în partea posterioară a cofretului.

Ușă: Montare pe suprafață, cu o deschidere de 130°. Balamale detașabile fixate cu bolț demontabil. Balamalele pot fi montate pentru a permite deschiderea pe stânga sau pe dreapta. Bolțuri sudate M6 interioare pentru montarea profilelor de ușă MMDP. Etanșeitatea este asigurată printr-o garnitură injectată (turnată) dintr-o bucată, extrudată din poliuretan.

Încuietoare: Încuietoare particularizată, cu bac dublu, pentru deschiderea facilă a ușii. Butuc double-bit de 3 mm și mișcare la 90°. Cofretele cu înălțimea de peste 1000 mm sunt prevăzute cu încuietoare espagnolette în trei puncte. Alte tipuri de butuci sunt disponibile ca accesorii.

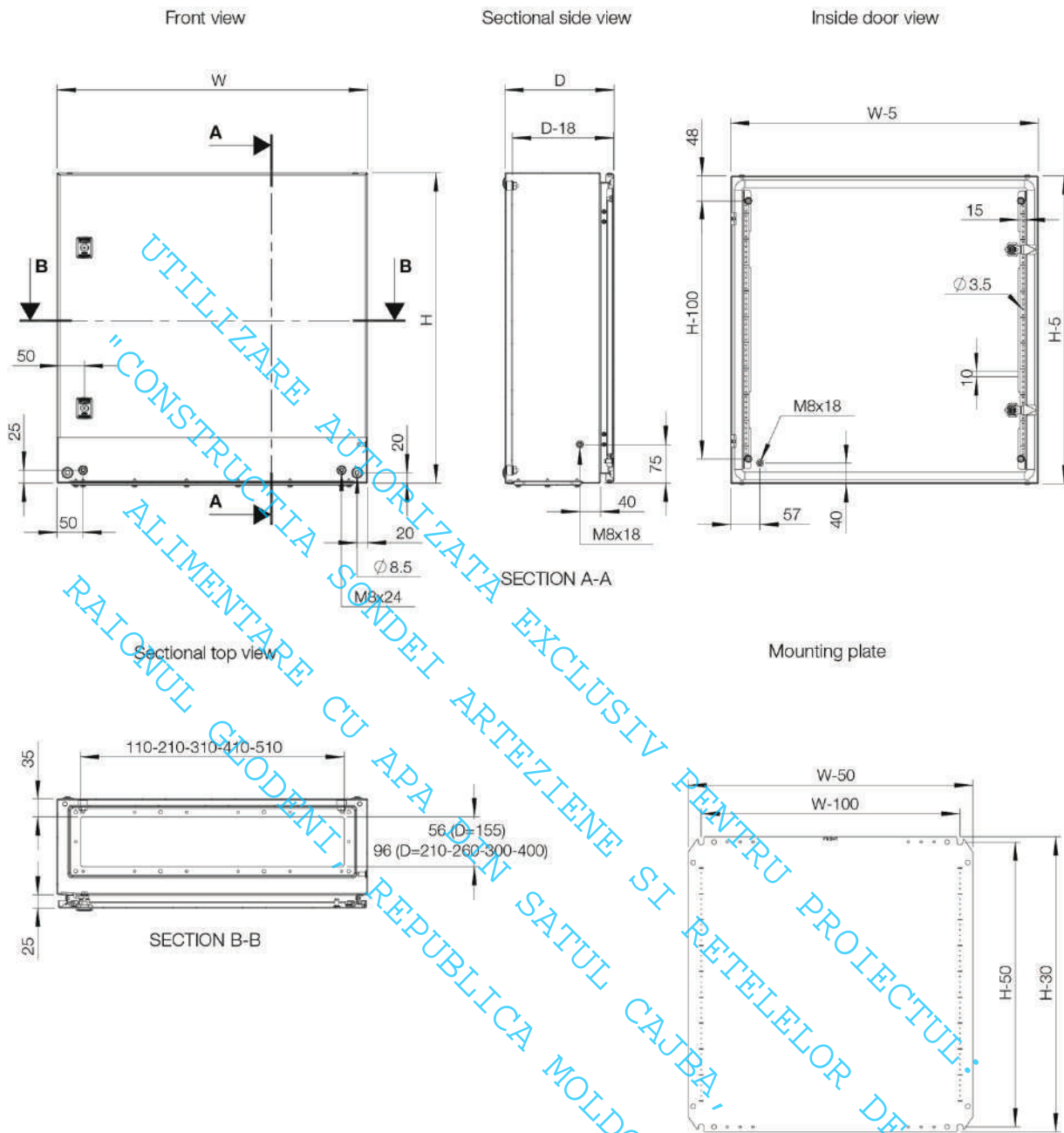
Contrapanou: Contrapanoul este prevăzut cu marcate orizontale, dispuse vertical la intervale de 10 mm, pentru poziționarea facilă a echipamentelor pe orizontală. Pe partea superioară și inferioară sunt orificii pentru facilitarea fișării cablurilor. Fixat pe șuruburi M8 sudate prin presiune pe partea posterioară a cofretului. Toate părțile contrapanoului de la 800 mm în sus sunt ranforsate prin plierea marginilor. Prin utilizarea accesoriului AMG, poziția contrapanoului poate fi reglată pe adâncime.

Deschidere intrare cabluri: Situat în partea posterioară a cofretului, pentru a facilita montarea cablajului pe contrapanou.

Protecție: Conform IP 66 | TYPE 4, 12, 13 | IK 10. Pentru montarea în exterior se recomandă folosirea elementului de protecție impermeabil ARF și trebuie luată în considerare rezistența la coroziune.

Finisaj: Vopsea pudră structurată RAL 7035.

Livrare: Cofret cu ușă. Două profile de montare pentru ușă începând cu înălțimea minimă de 600 mm. Placă / plăci de intrare cabluri cu garnitură / garnituri, cheie din plastic double-bit de 3 mm și accesorii de montare. Cheie din metal pentru înălțime minimă de 1000 mm. Facilități de împământare.



"UTILIZARE AUTORIZATA EXCLUSIV PENTRU PROIECTUL
"CONSTRUCTIA SONDII ARTEZIENE SI RETELELOR DE
ALIMENTARE CU APA CALDA SI CEALE CUM
RAICANUL GIODENI" REPUBLICA MOLDOVA"

Contrapanou inclus

Dimensiuni dulap			Dimensiuni contrapanou		Adâncime utilă	Nr. articol
Î	L	A	î	l	a	
200	200	155	170	150	137	MAS0202015R5
250	200	155	220	150	137	MAS0252015R5
250	250	155	220	200	137	MAS0252515R5
300	250	155	270	200	137	MAS0302515R5
300	250	210	270	200	192	MAS0302521R5
300	300	155	270	250	137	MAS0303015R5
300	300	210	270	250	192	MAS0303021R5
350	250	155	320	200	137	MAS0352515R5
400	300	155	370	250	137	MAS0403015R5
400	300	210	370	250	192	MAS0403021R5
400	400	210	370	350	192	MAS0404021R5
400	500	210	370	450	192	MAS0405021R5
400	600	210	370	550	192	MAS0406021R5
500	300	210	470	250	192	MAS0503021R5
500	400	155	470	350	137	MAS0504015R5
500	400	210	470	350	192	MAS0504021R5
500	400	260	470	350	242	MAS0504026R5
500	400	300	470	350	282	MAS0504030R5
500	500	210	470	450	192	MAS0505021R5
500	500	300	470	450	282	MAS0505030R5
600	400	155	570	350	137	MAS0604015R5
600	400	210	570	350	192	MAS0604021R5
600	400	260	570	350	242	MAS0604026R5
600	400	300	570	350	282	MAS0604030R5
600	500	155	570	450	137	MAS0605015R5
600	500	210	570	450	192	MAS0605021R5
600	500	260	570	450	242	MAS0605026R5
600	500	300	570	450	282	MAS0605030R5
600	600	210	570	550	192	MAS0606021R5
600	600	300	570	550	282	MAS0606030R5
600	600	400	570	550	382	MAS0606040R5
600	800	300	570	750	282	MAS0608030R5
700	500	210	670	450	192	MAS0705021R5
700	500	260	670	450	242	MAS0705026R5
800	400	300	770	350	282	MAS0804030R5
800	600	210	770	550	192	MAS0806021R5
800	600	260	770	550	242	MAS0806026R5
800	600	300	770	550	282	MAS0806030R5
800	600	400	770	550	382	MAS0806040R5
800	800	210	770	750	192	MAS0808021R5
800	800	300	770	750	282	MAS0808030R5
800	800	400	770	750	382	MAS0808040R5
1000	600	260	970	550	242	MAS1006026R5
1000	600	300	970	550	282	MAS1006030R5
1000	800	260	970	750	242	MAS1008026R5
1000	800	300	970	750	282	MAS1008030R5
1000	800	400	970	750	382	MAS1008040R5
1200	600	300	1170	550	282	MAS1206030R5
1200	800	300	1170	750	282	MAS1208030R5
1200	800	400	1170	750	382	MAS1208040R5

Contrapanou inclus

Placă intrare cabluri				
Dimensiune	Tip	Deschideri	Nr. încuietori	Nr. articol
110 x 56	0S	1	1	MAS0202015R5
110 x 56	0S	1	1	MAS0252015R5
110 x 56	0S	1	1	MAS0252515R5
110 x 56	0S	1	1	MAS0302515R5
110 x 56	0S	1	1	MAS0302521R5
210 x 56	1S	1	1	MAS0303015R5
210 x 96	1	1	1	MAS0303021R5
110 x 56	0S	1	1	MAS0352515R5
210 x 56	1S	1	1	MAS0403015R5
210 x 96	1	1	1	MAS0403021R5
310 x 96	2	1	1	MAS0404021R5
410 x 96	3	1	1	MAS0405021R5
510 x 96	4	1	1	MAS0406021R5
210 x 96	1	1	1	MAS0503021R5
310 x 56	2S	1	1	MAS0504015R5
310 x 96	2	1	1	MAS0504021R5
310 x 96	2	1	1	MAS0504026R5
310 x 96	2	1	1	MAS0504030R5
410 x 96	3	1	1	MAS0505021R5
410 x 96	3	1	1	MAS0505030R5
310 x 56	2S	1	2	MAS0604015R5
310 x 96	2	1	2	MAS0604021R5
310 x 96	2	1	2	MAS0604026R5
310 x 96	2	1	2	MAS0604030R5
410 x 56	3S	1	2	MAS0605015R5
410 x 96	3	1	2	MAS0605021R5
410 x 96	3	1	2	MAS0605026R5
410 x 96	3	1	2	MAS0605030R5
510 x 96	4	1	2	MAS0606021R5
510 x 96	4	1	2	MAS0606030R5
510 x 96	4	1	2	MAS0606040R5
310 x 96	2	2	2	MAS0608030R5
410 x 96	3	1	2	MAS0705021R5
410 x 96	3	1	2	MAS0705026R5
310 x 96	2	1	2	MAS0804030R5
510 x 96	4	1	2	MAS0806021R5
510 x 96	4	1	2	MAS0806026R5
510 x 96	4	1	2	MAS0806030R5
510 x 96	4	1	2	MAS0806040R5
310 x 96	2	2	2	MAS0808021R5
310 x 96	2	2	2	MAS0808030R5
310 x 96	2	2	2	MAS0808040R5
510 x 96	4	1	1*	MAS1006026R5
510 x 96	4	1	1*	MAS1006030R5
310 x 96	2	2	1*	MAS1008026R5
310 x 96	2	2	1*	MAS1008030R5
310 x 96	2	2	1*	MAS1008040R5
510 x 96	4	1	1*	MAS1206030R5
310 x 96	2	2	1*	MAS1208030R5
310 x 96	2	2	1*	MAS1208040R5

Approval Number: 1905513
Test Report: J-00330461



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

14th May 2019

Steuler-KCH GmbH
Berggarten 1,
D-56427 Siershahn,
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

'Vulkodurif 1250'. Natural (appears grey coloured), extruded ebonite rubber material. Shore hardness 72D. Tested in-radius size 2.0mm. For use with water up to 23°C.

APPROVAL NUMBER: 1905513

APPROVAL HOLDER: STEULER-KCH GMBH

The Scheme reserves the right to review approval.
Approval 1905513 is valid between May 2019 and May 2024

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

A handwritten signature in black ink, appearing to read 'Jason Furnival', written in a cursive style.

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 MAS 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.

LZM

xEnergy



Product catalogue LZM-I
Circuit breaker
Switch disconnect
Switching and protection up to 1000A



Powering Business Worldwide

Circuit breaker LZM series up to 1000A

Reliable, safe and simple products for energy distribution systems in high density residential, commercial and industrial buildings. Enabled by innovative protection concepts.



Standard/trip-indicating auxiliary contact from the Titan range

- reduced number of variants and stockholding requirement
- simple front installation at the same position
- simple clip-on feature saves mounting costs
- attractively priced identical parts from the control circuit device range

Page 26

Circuit-breaker series LZM1 to LZM4

- just 4 compact frame sizes
- available as 3 and 4-pole device up to 1000A
- equal dimension as NZM range
- flexible mounting using modular function groups suitable for 50°C according derating table
- switch suitable for world-wide use

Page 4



Remote operators

- common functional concept of all variants
- low closing delays 60 ms to 100 ms
- locking and sealing features provide security

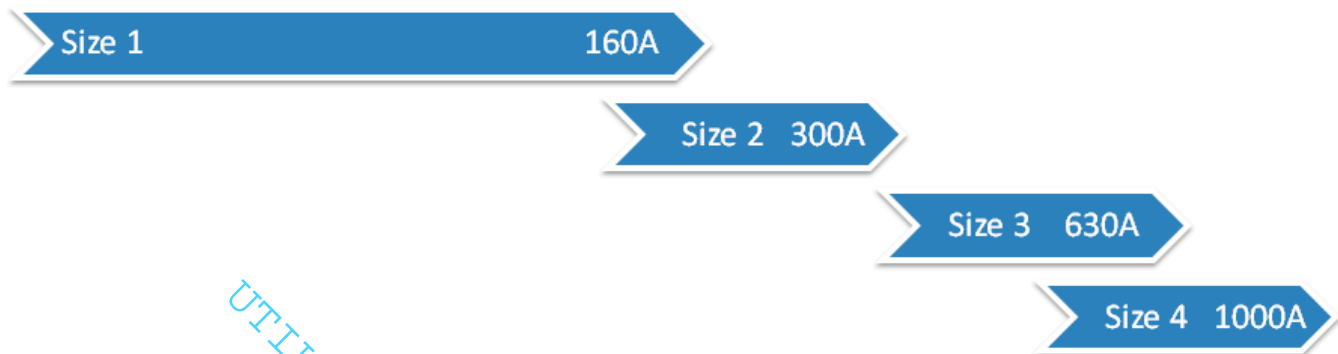
Page 35

Door coupling rotary handles

- identical drilling template for all variants
- innovative automatic centring
- axis support for long-term reliable operation

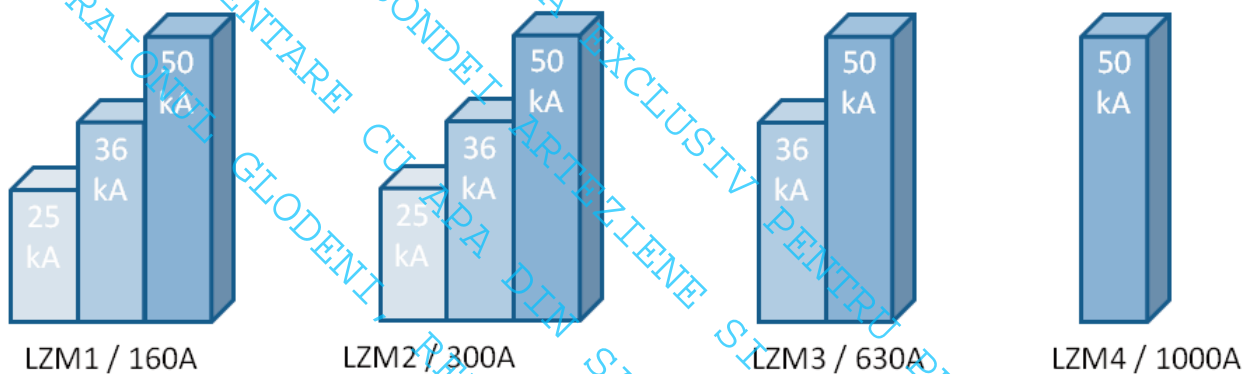
Page 30

Rated Current (A)



Only 4 frame sizes with nominal current up to 1000 A reduce time and effort to design and build up energy distribution boards.

Rated ultimate short-circuit breaking capacity (kA at 400/415V)



Continuous short-circuit breaking capacity from frame 1 up to frame 4 to ensure easy project planning for application oriented projects.

Complete offer to cover basic requirements and standard applications up to complex high end energy distribution boards.

Thermomagnetic and electronic trip unit

	Type code	Overload release	Short circuit release	
Thermo-magnetic	A	$0.8 \dots 1 \times I_n$	$6 \dots 10 \times I_n$	Standard application cable and system protection
Electronic	AE	$0.5 \dots 1 \times I_n$	$2 \dots 12 \times I_n$	Standard application cable and system protection

With each release type the LZW range provides adjustability for every nominal current to protect your application accordingly.

Type code for LZM-I MCCBs

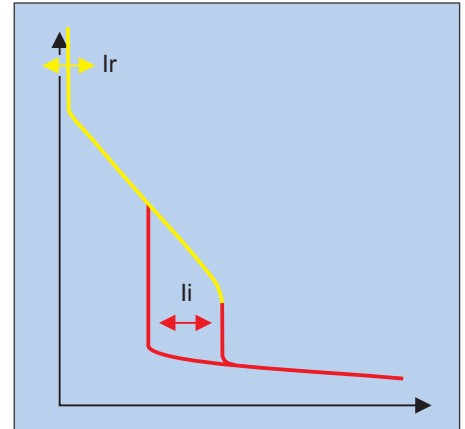
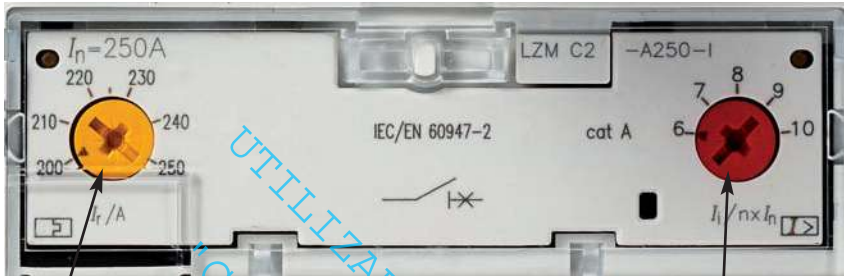
	LZM	B	2	-4	-A	160	/100	-I
LZM	Low Voltage Moulded Case Circuit Breaker with over-load release including inverse time delay dependent of previous load and instantaneous over-current release							
Rated ultimate short-circuit breaking capacity <i>I_{cu}</i> at 400/415V 50/60Hz								
B	25 kA							
C	36 kA							
N	50 kA							
Frame size								
1	up to 160A							
2	up to 300A							
3	up to 630A							
4	up to 1000A							
Number of poles								
	3 pole							
-4	4 pole							
Releases and Tripping characteristics								
-A	System and cable protection with thermalmagnetic releases							
-AE	System and cable protection with electronic releases							
Rated current phase conductor (A) 20 ... 1000								
Rated current neutral conductor (A) /100 ... /630	63% of phase conductor (e.g. cables with reduced cross-section of neutral line)							
Region standard								
-I	International Standard IEC 60947							

The description of the type code is a logic sequence of short circuit level, frame size, number of poles, trip unit and nominal current.

UTILIZARE AUTORIZATA EXCLUSIV PENTRU PROIECTUL: 'CONSTRUCTIA SOND EI ARTEZIENE SI REZELELOR DE RALONUL GIUCENI, RAJONUL CAJBA, REPUBLICA MOLDOVA'

Over-current releases

Thermomagnetic release A



1 Overload protection

$$I_r = 0,8 - 1 \times I_n$$

Neutral protection

The neutral pole is protected by the thermal device featuring an I_n tripping threshold of 100% or 60% of the I_r threshold adjusted with respect to the phases.

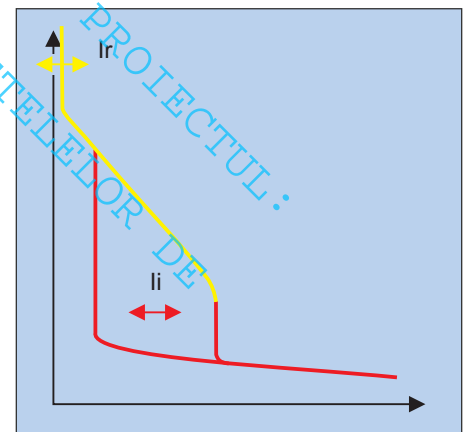
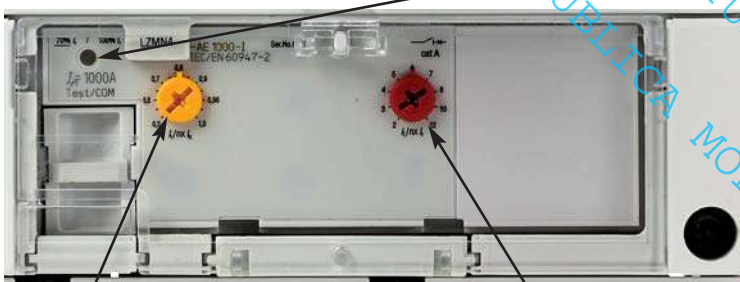
In this way, conductors, which may have a smaller section on the less charged neutral pole as in the phases, may be dimensioned effectively.

2 Short-circuit protection

Device with instantaneous tripping and adjustable I_i threshold

$$I_i = 6 - 10 \times I_n$$

Electronic release without delay AE



1 Overload protection

Device featuring microprocessor with inverse time tripping and adjustable threshold

$$I_r = 0,5 - 1 \times I_n$$

Neutral protection

The neutral pole is protected by the thermal device featuring an I_n tripping threshold of 100% or 60% of the I_r threshold adjusted with respect to the phases.

The protection featuring advance threshold is intended for high I_n rated currents ($\geq 160A$): in these cases, the statutory provision allows the use of cables with a smaller section than in the phases.

2 Led for indication of overload

The LED starts to light when the charge value approaches the I_n value or exceeds it:

Charge	<70% I_r	$\geq 70\% I_r$	$\geq 100\% I_r$
LED	off	steady	on intermittent

3 Short-circuit protection

Device featuring instantaneous tripping and adjustable I_i threshold

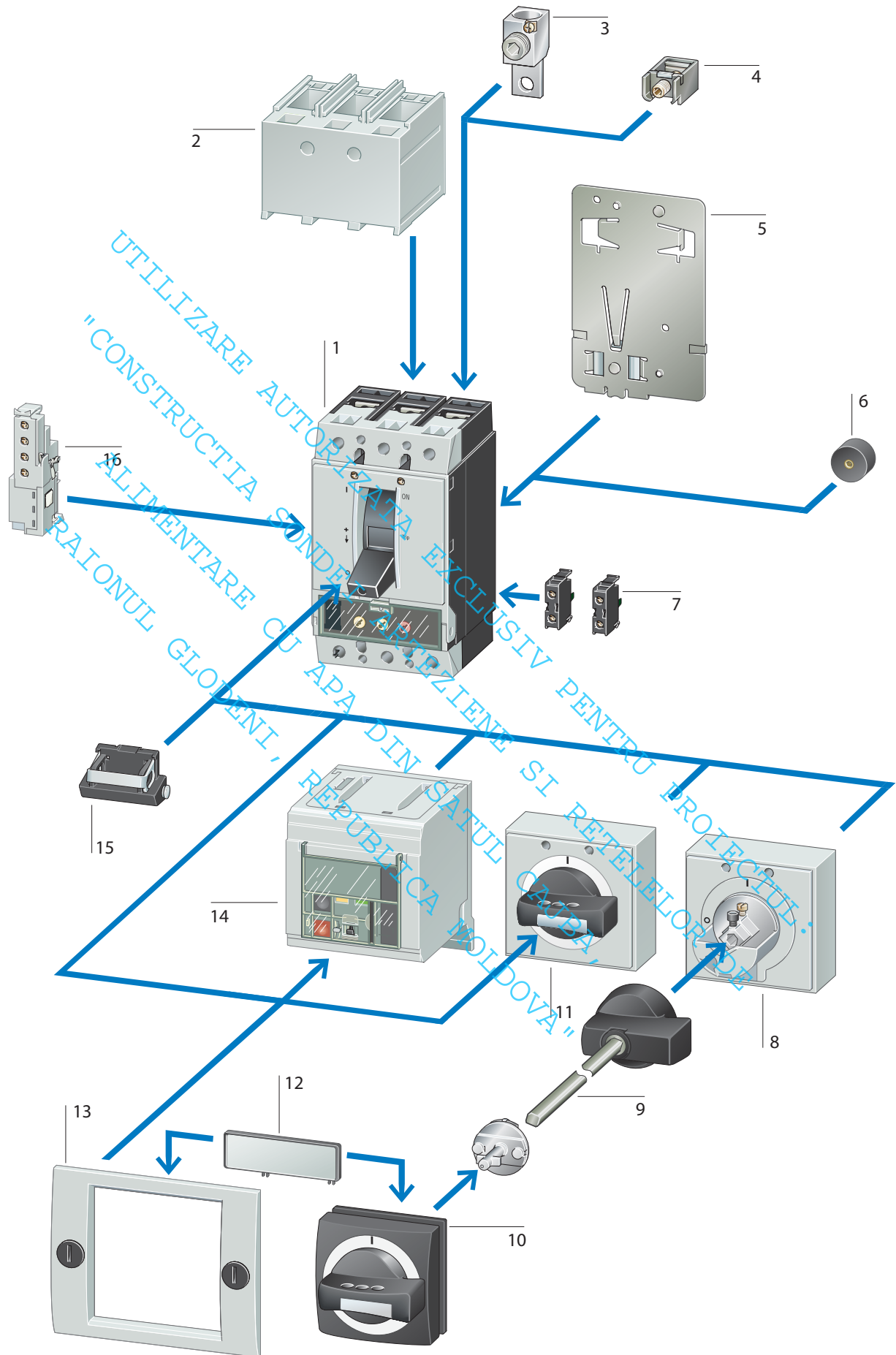
$$I_i = 2 - 8/12 \times I_n$$

Circuit-breakers, switch-disconnectors from 15 to 1000 A



	Page		Page		Page
System overview		Engineering		Technical data	
Circuit-breakers, switch-disconnectors	3	Selectivity: incoming circuit-breaker, outgoing circuit-breaker	38	Circuit-breakers	52
Technical overview		MCB, backup protection	42	Switch-disconnectors	54
Ordering	4	Direction of blow-out, minimum clearances, tube cable lugs	43	Temperature influence	55
Circuit-breaker thermo-magnetic release, 3-pole	6	Auxiliary switches, trip-indicating auxiliary contacts	44	Effective power loss	56
Circuit-breaker, electronic releases, 3 pole	6	Mechanical interlock for (door-coupling) rotary handle	45	Terminal capacities	57
Circuit-breaker thermo-magnetic release, 4-pole	8	Mechanical interlock for remote operator, Sizes 1, 2, 3: tripping characteristics	46	Auxiliary contact	59
Circuit-breakers, electronic releases, 4 pole	10	Size 4: tripping characteristics	49	Equipping with auxiliary contacts, time differences	60
Switch-disconnectors, 3 pole, 4 pole	12	Sizes 1, 2, 3: let-through characteristics	50	Undervoltage release, shunt release, Remote operator, capacitor unit	61
Connection types	14				62
Auxiliary contact	26			Dimensions	
Undervoltage release	28			Size 1: basic units	63
Shunt release	29			Size 1: accessories	64
Door coupling rotary handles	30			Size 2: basic units	67
Rotary handles on breaker	31			Size 2: accessories	68
Accessories	32			Size 3: basic units	73
Mechanical interlock	34			Size 3: accessories	74
Remote operators	35			Size 4: basic units	78
				Size 4: accessories	79

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Basic units

Circuit-breaker 1

Rated uninterrupted current up to 1000 A

Switching capacity 25, 36, 50kA
at 415V

Adjustable releases for overload and short-circuit

Protection of systems, cables, motors,
generators

3 and 4 pole versions, IEC/EN60947

→ page 6

Switch-disconnector 1

Rated uninterrupted current up to 1000 A

Remotely tripped switch-disconnector with
undervoltage or shunt release

3 and 4 pole versions, IEC/EN60947

→ page 12

Add-on functions

Standard auxiliary contact (HIN) 7Switching with the main contacts. Used for
indication and interlock functions.

→ page 26

Trip-indicating auxiliary contact (HIA) 7General trip indication '+', when tripped by
voltage release, overload release or short-
circuit release

→ page 26

Voltage release 16

Undervoltage release

Shunt release

→ page 28

Door coupling rotary handle 8+10

Lockable

With door interlock

→ page 30

Extension shaft 9

Can be cut to required length.

→ page 30

Rotary handle 11

Lockable

→ page 31

Remote operator 14For remote switching of circuit-breakers and
switch-disconnectors

→ page 35

Toggle lever interlock device 15

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Mounting accessories

Tunnel terminals for Al and Cu cable 3

Standard with control circuit terminal

LZM1 → page 14

LZM2 → page 16

LZM3 → page 18

LZM4 → page 22

Box terminals 4Standard version of frame size 1 assembled
within the circuit-breaker enclosure

LZM1 → page 14

LZM2 → page 16

LZM3 → page 18

Terminal cover 2Protection against direct contact where cable
lugs, busbars or tunnel terminals are used

LZM1 → page 14

LZM2 → page 16

LZM3 → page 20

LZM4 → page 24

Clip plate 5

NZM1-XC35 for 35 mm top-hat rail

NZM2-XC75 for 75 mm top-hat rail

→ page 33

Insulating surround 13For use with toggle lever, rotary drive and
remote operator protruding from the enclosure

→ page 33

External warning plate/designation label 12

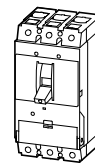
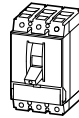
→ page 32

Spacer 6

→ page 33

Circuit-breaker

With main switch characteristics to IEC/EN 60204
and isolating characteristics to IEC/EN60947



Rated uninterrupted current I_u = Rated current I_n
Adjustable overload release I_r
Adjustable short-circuit release I_i

**Thermomagnetic releases
System and cable protection**

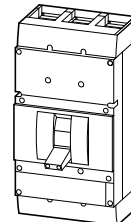
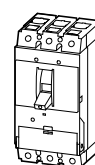
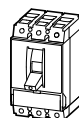
	I_u A	I_u A	I_r A	I_i A	
Ambient temperature at 100% I_n min./max. -25/+50°C	20		0.8 - 1 x I_n	350	
	25				
	32				
	40				
	50				
	63				
	80				
	100				
	125				
	160	160			
		200			
		250			
		300			320
					400
			500		
				8 - 10 x I_n	
				6 - 10 x I_n	
				LZM1: 8 x I_n	
				6 - 10 x I_n	

Basic switching capacity		LZMB1-A...	LZMB2-A...		
400/415 V	kA	25	25		
440V	kA	12.5	12.5		
Comfort switching capacity		LZMC1-A...	LZMC2-A...	LZMC3-A...	
400/415 V	kA	36	36	36	
440 V	kA	18	18	18	
Normal switching capacity		LZMN1-A...	LZMN2-A...	LZMN3-A...	
400/415 V	kA/cos φ	50	50	50	
440 V	kA	25	25	25	

Notes The stated switching capacity values are rated ultimate short-circuit breaking capacities (I_{cu})

Switch-disconnector

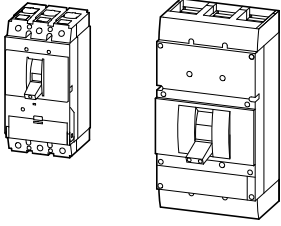
With main switch characteristics to IEC/EN 60204
and VDE 0113 isolating characteristics to IEC/EN 60947,
VDE 0660 without overload and short-circuit release



	63 – 160	160 – 250	400 – 630	630 – 1600
Rated uninterrupted current I_u = rated current I_n				
Can be triggered with U/A voltage release	LN1-...	LN2-...	LN3-...	LN4-...
Rated short-circuit making capacity I_{cm}	kA 2.8	5.5	25	53
Rated short-time withstand current I_{cw} (1s)	kA 2	3.5	12	25

xEnergy

LZM1, LZM2, LZM3, LZM4



Electronic releases
Systems, cable, selectivity and generator protection

I_U	I_U	I_r	I_i
A	A	A	A

		$0.5 - 1 \times I_n$	
630			$2 - 8 \times I_n$
	800		$2 - 12 \times I_n$
	1000		

LZMC3-...E...	
36	
18	
LZMN3-...E...	LZMN4-...E...
50	50
25	25



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 ALIMENTARE CU APA DIN SATUL CAJBA,
 RAIONUL GLODENI, REPUBLICA MOLDOVA"

6 Circuit-breaker, 3 pole

Ordering

LZM...1, LZM...2, LZM...3

xEnergy

Rated current = rated uninterrupted current $I_n = I_u$ A	Setting range		Basic switching capacity 25 kA at 415 V 50/60 Hz Part no. Article no.	Price see price list	Comfort switching capacity 36 kA at 415 V 50/60 Hz Part no. Article no.	Price see price list
	Overload releases	Short-circuit releases				
	I_r A	I_i A				
						

Protection of systems and cables

3 pole with thermo-magnetic release

Terminals standard, terminal screws as accessories

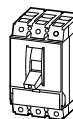


20	15...20	350
25	20...25	350
32	25...32	350
40	32...40	320...400
50	40...50	300...500
63	50...63	380...630
80	63...80	480...800
100	80...100	600...1000
125	100...125	750...1250
160	125...160	1280

LZMB1-A20-I 111848	LZMC1-A20-I 111888
LZMB1-A25-I 111849	LZMC1-A25-I 111889
LZMB1-A32-I 111850	LZMC1-A32-I 111890
LZMB1-A40-I 111851	LZMC1-A40-I 111891
LZMB1-A50-I 111852	LZMC1-A50-I 111892
LZMB1-A63-I 111853	LZMC1-A63-I 111893
LZMB1-A80-I 111854	LZMC1-A80-I 111894
LZMB1-A100-I 111855	LZMC1-A100-I 111895
LZMB1-A125-I 111856	LZMC1-A125-I 111896
LZMB1-A160-I 111857	LZMC1-A160-I 111897

LZMB1-A20-I 111848	LZMC1-A20-I 111888
LZMB1-A25-I 111849	LZMC1-A25-I 111889
LZMB1-A32-I 111850	LZMC1-A32-I 111890
LZMB1-A40-I 111851	LZMC1-A40-I 111891
LZMB1-A50-I 111852	LZMC1-A50-I 111892
LZMB1-A63-I 111853	LZMC1-A63-I 111893
LZMB1-A80-I 111854	LZMC1-A80-I 111894
LZMB1-A100-I 111855	LZMC1-A100-I 111895
LZMB1-A125-I 111856	LZMC1-A125-I 111896
LZMB1-A160-I 111857	LZMC1-A160-I 111897

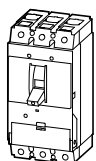
Terminal screws standard, terminals as accessories



160	125...160	960...1600
200	160...200	1200...2000
250	200...250	1500...2500
300	240...300	1500...2500

LZMB2-A160-I 111922	LZMC2-A160-I 111938
LZMB2-A200-I 111923	LZMC2-A200-I 111939
LZMB2-A250-I 111924	LZMC2-A250-I 111940
LZMB2-A300-I 111925	LZMC2-A300-I 111941

LZMB2-A160-I 111922	LZMC2-A160-I 111938
LZMB2-A200-I 111923	LZMC2-A200-I 111939
LZMB2-A250-I 111924	LZMC2-A250-I 111940
LZMB2-A300-I 111925	LZMC2-A300-I 111941



320	250...320	1920...3200
400	320...400	2400...4000
500	400...500	3000...5000

LZMB3-A320-I 111954	LZMC3-A320-I 111954
LZMB3-A400-I 111955	LZMC3-A400-I 111955
LZMB3-A500-I 111956	LZMC3-A500-I 111956

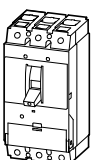
LZMB3-A320-I 111954	LZMC3-A320-I 111954
LZMB3-A400-I 111955	LZMC3-A400-I 111955
LZMB3-A500-I 111956	LZMC3-A500-I 111956

Notes

Notes for terminals → 15

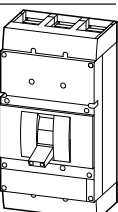
3 pole with electronic release

Terminals screws standard, terminals as accessories



630	315...630	1260...5040
-----	-----------	-------------

LZMC3-AE630-I 111957



800	400...800	1600...9600
1000	500...1000	2000...12000

Notes

Notes for terminals → 19

xEnergy

Normal switching capacity
50 kA at 415 V 50/60 Hz

Part no. Article no.	Price see price list	Std. pack	Notes
-------------------------	----------------------------	-----------	-------

LZMN1-A20-I
174414

LZMN1-A25-I
174415

LZMN1-A32-I
174416

LZMN1-A40-I
174417

LZMN1-A50-I
174418

LZMN1-A63-I
174419

LZMN1-A80-I
174420

LZMN1-A100-I
174421

LZMN1-A125-I
174422

LZMN1-A160-I
174423

1 off

IEC/EN 60947-2

Adjustable overload releases I_r

- $0.8 - 1 \times I_n$ (ex-works $0.8 \times I_n$)

Adjustable short-circuit releases I_i

- $6 - 10 \times I_n$ (ex-works $6 \times I_n$)
- LZM...-A40: $8 - 10 \times I_n$ (ex-works $8 \times I_n$)

Fixed short-circuit release I_i

- 350 A at $I_n = 20 - 32$ A
- 1280 A at $I_n = 160$ A (LZM1)

LZMN2-A160-I
174442

LZMN2-A200-I
174443

LZMN2-A250-I
174444

LZMN2-A300-I
174445

LZMN3-A320-I
111966

LZMN3-A400-I
111967

LZMN3-A500-I
111968

1 off

LZMN3-AE630-I
111969

LZMN4-AE800-I
111978

LZMN4-AE1000-I
111979

1 off

IEC/EN 60947-2

Adjustable overload releases I_r

- $0.5 - 1 \times I_n$ (ex-works $0.8 \times I_n$)

R.m.s. value measurement and "thermal memory"




Adjustable short-circuit releases I_i

- LZM...3-AE630-I: $2 - 8 \times I_n$ (ex-works $6 \times I_n$)
- LZM...4-AE...-I: $2 - 12 \times I_n$ (ex-works $6 \times I_n$)

Ordering

LZM...1, LZM...2, LZM...3

xEnergy

Rated current = rated uninterrupted current	Setting range Overload releases	Neutral conductor	Short-circuit releases	Basic switching capacity 25 kA at 415 V 50/60 Hz Part no. Article no.	Price see price list	Comfort switching capacity 36 kA at 415 V 50/60 Hz Part no. Article no.	Price see price list
$I_n = I_u$ A	I_r A 	I_r A 	I_i A 				

Protection of systems and cables

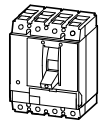
4 pole

Terminals standard, terminal screws as accessories



20	15...20	15...20	350	LZMB1-4-A20-I 111868	LZMC1-4-A20-I 111908
25	20...25	20...25	350	LZMB1-4-A25-I 111869	LZMC1-4-A25-I 111909
32	25...32	25...32	350	LZMB1-4-A32-I 111870	LZMC1-4-A32-I 111910
40	32...40	32...40	320...400	LZMB1-4-A40-I 111871	LZMC1-4-A40-I 111911
50	40...50	40...50	300...500	LZMB1-4-A50-I 111872	LZMC1-4-A50-I 111912
63	50...63	50...63	380...630	LZMB1-4-A63-I 111873	LZMC1-4-A63-I 111913
80	63...80	63...80	480...800	LZMB1-4-A80-I 111874	LZMC1-4-A80-I 111914
100	80...100	80...100	600...1000	LZMB1-4-A100-I 111875	LZMC1-4-A100-I 111915
125	100...125	100...125	750...1250	LZMB1-4-A125-I 111876	LZMC1-4-A125-I 111916
160	125...160	125...160	1280	LZMB1-4-A160-I 111877	LZMC1-4-A160-I 111917

Terminals standard, terminal screws as accessories



160	125...160	125...160	960...1600	LZMB2-4-A160-I 116431	LZMC2-4-A160-I 116435
	125...160	80...100	960...1600	LZMB2-4-A160/100-I 111930	LZMC2-4-A160/100-I 111948
200	160...200	160...200	1200...2000	LZMB2-4-A200-I 116432	LZMC2-4-A200-I 116436
	160...200	100...125	1200...2000	LZMB2-4-A200/125-I 111931	LZMC2-4-A200/125-I 111949
250	200...250	200...250	1500...2500	LZMB2-4-A250-I 116433	LZMC2-4-A250-I 116437
	200...250	125...160	1500...2500	LZMB2-4-A250/160-I 111932	LZMC2-4-A250/160-I 111950
300	240...300	250...320	1500...2500	LZMB2-4-A300-I 116434	LZMC2-4-A300-I 116438
	240...300	160...200	1500...2500	LZMB2-4-A300/200-I 111933	LZMC2-4-A300/200-I 111951
320	250...320	320...400	1920...3200		LZMC3-4-A320-I 116439
	250...320	200...250	1920...3200		LZMC3-4-A320/200-I 111960
400	320...400	320...400	2400...4000		LZMC3-4-A400-I 116470
	320...400	250...250	2400...4000		LZMC3-4-A400/250-I 111961
500	400...500	400...500	3000...5000		LZMC3-4-A500-I 116471
	400...500	250...320	3000...5000		LZMC3-4-A500/320-I 111962

Notes

Notes for terminals → 15+19

xEnergy

Normal switching capacity
50 kA at 415 V 50/60 Hz

Part no.	Price Article no. list	Std. pack see price	Notes
LZMN1-4-A20-I 174424		1 off	IEC/EN 60947-2
LZMN1-4-A25-I 174425			Adjustable overload releases I_r <ul style="list-style-type: none"> • 0.8 – 1 x I_n (ex-works 0.8 x I_n)
LZMN1-4-A32-I 174426			Setting on neutral pole implemented via the main pole setting I_r of the main pole.
LZMN1-4-A40-I 174427			Adjustable short-circuit releases I_s <ul style="list-style-type: none"> • 6 – 10 x I_r (ex-works 6 x I_n) – LZM...A40-I: 8 – 10 x I_n (ex-works 8 x I_n)
LZMN1-4-A50-I 174428			Fixed short-circuit release I_s <ul style="list-style-type: none"> • 350 A at $I_n = 20 - 32$ A • 1280 A at $I_n = 160$ A (8 x I_n)
LZMN1-4-A63-I 174429			LZM..1-4-A...
LZMN1-4-A80-I 174430			<ul style="list-style-type: none"> • With 100 % overload and short-circuit protection in 4th pole
LZMN1-4-A100-I 174431			LZM..2-4-A...
LZMN1-4-A125-I 174432			<ul style="list-style-type: none"> • With 100 % or 60 % overload and short-circuit protection in 4th pole
LZMN1-4-A160-I 174433			
LZMN2-4-A160-I 174435		1 off	
LZMN2-4-A160/100-I 174434			
LZMN2-4-A200-I 174437			
LZMN2-4-A200/125-I 174436			
LZMN2-4-A250-I 174439			
LZMN2-4-A250/160-I 174438			
LZMN2-4-A300-I 174441			
LZMN2-4-A300/200-I 174440			
LZMN3-4-A320-I 116473		1 off	
LZMN3-4-A320/200-I 111974			
LZMN3-4-A400-I 116474			
LZMN3-4-A400/250-I 111975			
LZMN3-4-A500-I 116475			
LZMN3-4-A500/320-I 111976			

UTILIZARE AUTONOMA
 "CONSTRUCTIA AUTONOMA
 ALIMENTARE CU APA DIN
 RAIONUL GLODENI, REPUBLICA
 MOLDOVA"
 ARTEZIENE SI RETELELOR DE
 PENTRU PROIECTUL:

Ordering

LZM...2, LZM...3, LZM...4

xEnergy

Comfort switching capacity
36 kA at 415 V 50/60 Hz
Part no.
 Article no.

Price
 see price list

Rated current =
 rated uninterrupted
 current

Setting range
 Overload
 releases

Neutral
 conductor

Short-circuit
 releases
 Non-delayed

$I_n = I_u$

I_r

I_r

I_r

A

A

A

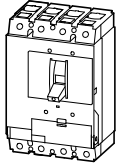
A



Protection of systems and cables

4 pole

Terminals screws standard, terminals as accessories



630

315...630

315...630

1260...5040

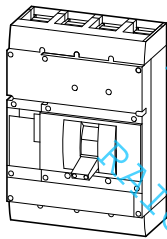
LZMC3-4-AE630-I
 116472

315...630

200...400

1260...5040

LZMC3-4-AE630/400-I
 111963



800

400...800

400...800

1600...9600

400...800

250...500

1600...9600

1000

500...1000

500...1000

2000...12000

500...1000

315...630

2000...12000

Notes

Notes for terminals → 19+22

"CONSTRUCTIA AUTOPIZZARIA EXCLUSIV PENTRU PROIECTUL: ALIMENTARE CU APA DIN SATUL CAJBA, RAJONUL GLODENI, REPUBLICA MOLDOVA"

xEnergy

Normal switching capacity
50 kA at 415 V 50/60 Hz

Part no.
 Article no. **Price**
 see price list

Std. pack

Notes

LZMN3-4-AE630-I
 116476

LZMN3-4-AE630/400-I
 111977

LZMN4-4-AE800-I
 116477

LZMN4-4-AE800/500-I
 111986

LZMN4-4-AE1000-I
 116478

LZMN4-4-AE1000/630-I
 111987

1 off

IEC/EN 60947-2

Adjustable overload releases I_r

- 0.5 – 1 x I_n (ex-works 0.8 x I_n)

Setting on neutral pole implemented via the main pole setting I_r of the main pole.

R.m.s. value measurement and "thermal memory"

Adjustable short-circuit releases I_s

- LZM...3-4-AE630-I: 2 – 8 x I_n (ex-works 6 x I_n)
- LZM...4-4-AE...-I: 2 – 12 x I_n (ex-works 6 x I_n)

I_{t1} constant function (ex-works OFF)

- LZM3, LZM4 switched (ex-works OFF)

LZM...3-AE630/400, LZM...-4-AE.../...-I









- With 60 % or 100 % overload and short-circuit protection in 4th pole

UTILIZARE AUTONOMA EXCLUSIV PENTRU PROIECTUL:
 "CONSTRUCTIA AUTONOMA ALIMENTARE CU APA DIN SATUL CAJBA,
 RAIONUL GLODENI, REPUBLICA MOLDOVA"

Ordering


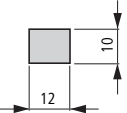
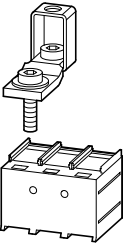
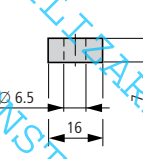
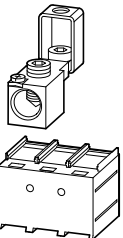
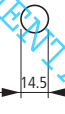
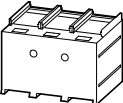
LN1..., LN2..., LN3..., LN4...

xEnergy

	Rated current = rated uninterrupted current	Short-circuit protection max. fuse gL-characteristic	3pole Part no. Article no.	Price see price list	4pole Part no. Article no.	Price see price list	Std. pack
	$I_n = I_u$ A	A					
Switch-disconnectors							
Can be tripped remotely with shunt- or undervoltage release							
Terminals standard, terminal screws as accessories							
	63	125	LN1-63-I 111994		LN1-4-63-I 111998		1 off
	100	125	LN1-100-I 111995		LN1-4-100-I 111999		
	125	125	LN1-125-I 111996		LN1-4-125-I 112000		
	160	160	LN1-160-I 111997		LN1-4-160-I 112001		
Terminals screws standard, terminals as accessories							
	160	250	LN2-160-I 112002		LN2-4-160-I 112005		1 off
	200	250	LN2-200-I 112003		LN2-4-200-I 112006		
	250	250	LN2-250-I 112004		LN2-4-250-I 112007		
	400	630	LN3-400-I 112008		LN3-4-400-I 112010		
	630	630	LN3-630-I 112009		LN3-4-630-I 112011		
	800	1600	LN4-800-I 112012		LN4-4-800-I 112016		
	1000	1600	LN4-1000-I 112013		LN4-4-1000-I 112017		

Notes Main switch characteristics including positive drive to IEC/EN 60204 and VDE 0113
 Isolating characteristics to IEC/EN 60947-3 and VDE 0660
 Protection against accidental contact according to IEC 100
 Notes for terminals → 16

UTILIZARE AUTORIZATA EXCLUSIV PENTRU PROIECTUL:
"CONSTRUCTIA SONDEI ARTEZIENE SI RETELELOR DE
ALIMENTARE CU APA DIN SATUL CAJBA,
RAIONUL GLODENI, REPUBLICA MOLDOVA"


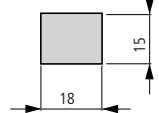
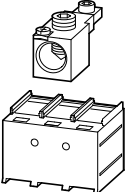
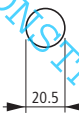
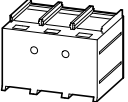

	Max. cable connection area	For use with	Terminal capacities	Type of conductor		
				mm ²	AWG/kcmil	
Box terminal						
Standard equipment						
		LZM1(-4) LN1(-4)	Three- and four-pole	Cu cable	1 x 10 – 70 ¹⁾ 2 x 6 – 25	1 x 8 – 2/0 2 x 9 – 4
Screw connection						
		LZM1(-4) LN1(-4)	Three- and four-pole	Copper cable lugs Aluminium cable lug	1 x 10 – 70 2 x 6 – 25 1 x 10 – 35 2 x 10 – 35	1 x 8 – 2/0 2 x 9 – 4 1 x 8 – 2 2 x 8 – 2
Tunnel terminal						
		LZM1(-4) LN1(-4)	Three- and four-pole	Copper cable Al cable	1 x 16 – 95 2 x 6 – 25	1 x 6 – 3/0 –
Cover						
	–	LZM1(-4) LN1(-4)	3 pole 4 pole			

Notes

¹⁾ Up to 95 mm² can be connected depending on the cable manufacturer.

xEnergy

Terminal capacities		Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Cu strip (number of segments x width x segment thickness)	Copper busbar width x thickness				
mm	mm				
2 x 9 x 0.8 9 x 9 x 0.8		NZM1-XKC 260015		1 off	Standard connection with all switches LZM1 and LN1. Conversion kit for circuit-breaker with screw connection.
		NZM1-4-XKC 267075		1 off	Type contains parts for a 3 or 4-pole switch side. Fitted within the switch housing
	min. 12 x 5 max. 16 x 5	NZM1-XKS 260019		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. Fitted outside the switch housing.
	min. 12 x 5 max. 16 x 5	NZM1-4-XKS 266725		1 off	Mounting of the cover NZM1(-4)-XKSA obligatory (supplied).
		NZM1-XKA 266730		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers.
		NZM1-4-XKA 266731		1 off	A standard with control circuit terminal for 1 x 0.75 – 2.5 mm ² (18 – 14 AWG) or 2 x 0.75 – 1.5 mm ² (18 – 14 AWG) copper conductors. Fitted outside the switch housing. Use with flexible and highly flexible conductors ferrules. Maximum specified cross-section can only be connected when stranded and without ferrules. Mounting of the cover NZM1(-4)-XKSA obligatory (supplied).
		NZM1-XKSA 260021		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers.
		NZM1-4-XKSA 266741		1 off	Protection against direct contact where cable lugs, busbars or tunnel terminals are used. Contained in kit with tunnel terminals or screw connection terminals. Degree of protection IP1X on the connection side when using insulated conductor material.

	Max. cable connection area	For use with	Terminal capacities		Terminal capacities Cu strip (number of segments x width x segment thickness)		
			Type of conductor	Terminal capacities ¹⁾			
			mm ²	AWG/kcmil	mm		
Box terminal							
 		LZM2(-4) LN2(-4)	3pole	Copper conductors Cu cable	1 x 4 – 185 2 x 4 – 70	1 x 11 – 350 2 x 12 – 2/0	≥ 2 x 9 x 0.8
			4pole				
Tunnel terminal							
 		LZM2(-4) LN2(-4)	3pole	Copper cable all cable	1 x 16 ... 185 ¹⁾ 1 x 16 ... 185 ¹⁾	1 x 6 – 350 –	
			4pole				
Cover							
		LZM2	3 pole				
			LZM2(-4) LN2-4	4 pole			
Copper cable lug							
	95 mm ²	LZM2(-4) LN2(-4)	3 and 4 pole				
	120 mm ²						
	150 mm ²						
	185 mm ²						

Notes

¹⁾ Up to 240 mm² can be connected depending on the cable manufacturer.

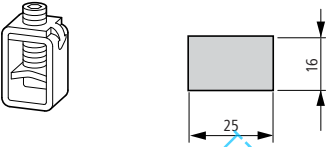
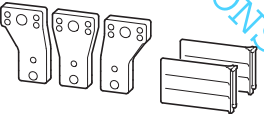
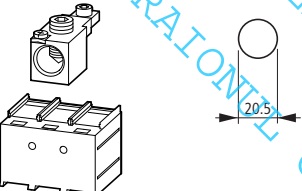
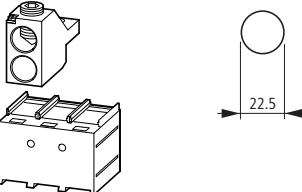
xEnergy

Copper busbar width x thickness	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
mm				
	NZM2-160-XKC 262240		1 off	Type suffix and type contain parts for a circuit-breaker side at top or bottom for 3 or 4 pole circuit-breakers. Conversion kit for circuit-breaker with screw connection. Fitted within the switch housing. O = for fitting at the top U = for fitting at the bottom $U_g \geq 525$ V AC: • Use cover NZM2(4)-XKSA. Use ferrules with flexible and highly flexible conductors. Max. cross section shown can only be connected when flexible and without ferrules.
	NZM2-250-XKC 262244			
	NZM2-4-160-XKC 266755			
	NZM2-4-250-XKC 266756			
	NZM2-XKA 271457		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. A standard with control circuit terminal for 1 x 0.75 – 2.5 mm ² (18 – 14 AWG) or 2 x 0.75 – 1.5 mm ² (18 – 16 AWG) copper conductors. Fitted outside the switch housing. Use with flexible and highly flexible conductors ferrules. Maximum specified cross-section can only be connected when stranded and without ferrules. Mounting of the cover NZM2(-4)-XKSA obligatory (supplied).
	NZM2-4-XKA 271458		1 off	
	NZM2-XKSA 260038		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. Protection against direct contact where cable lugs, busbars or tunnel terminals are used. Degree of protection IP1X on the connection side when using insulated conductor material.
	NZM2-4-XKSA 266770		1 off	
	KS95-NZM7 059775		3 off	Type contains a cable lug for 3-pole or 4-pole switches. Special cable lug, narrow style.
	KS120-NZM7 059776			
	KS150-NZM7 059777			
	NZM2-XKS185 260032			

Ordering

LZM3

xEnergy

Max. cable connection area	Rated current ¹⁾	For use with	Terminal capacities			
			Type of conductor	Terminal capacities		
	I_n			mm ²	AWG/kcmil	
Box terminal						
	max. 500	LZM3(-4) LN3(-4)	3pole	Copper conductors Cu cable	1 x 35 – 240	1 x 2 – 350
	630		4pole		2 x 16 – 120	
Connection width extension						
	630	LZM3(-4) LN3(-4)	3pole	Copper cable lugs	2 x 300	2 x 500
			4pole		1 x 600	
Tunnel terminal						
	max. 350	LZM3(-4) LN3(-4)	3pole	Copper conductors Cu cable conductors Al cable	1 x 16 – 185 ²⁾	1 x 6 – 350
			4pole			
	max. 630		3pole		1 x 50 – 240	1 x 0 – 500
			4pole		2 x 50 – 240	2 x 0 – 500

Notes

¹⁾ The following applies for the rated current: The values have been determined conform to IEC/EN 60947 (switchgear standard) and generally relate to the max. defined cross-sections and are intended for the purpose of orientation.

The engineering standards which apply in each case must be observed.

²⁾ Up to 240mm² can be connected depending on the cable manufacturer.

xEnergy

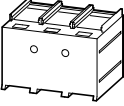
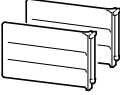

Terminal capacities		Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Cu strip (number of segments x width x segment thickness)	Copper busbar width x thickness				
mm	mm				
min. 6 x 16 x 0.8 max. 20 x 24 x 0.5 or max. 11 x 21 x 1		NZM3-XKC 260042		1 off	Type suffix and type contain parts for a circuit-breaker side at top or bottom for 3 or 4-pole circuit-breakers. Conversion kit for circuit-breaker with screw connection. Fitted within the switch housing O = for fitting at the top U = for fitting at the bottom $U_e \geq 525$ V AC: • Use NZM3(-4)-XKSA cover. Use with flexible and highly flexible conductors ferrules, note the max. terminal capacity when using ferrules.
		NZM3-4-XKC 266783			
(2 x) 10 x 50 x 1.0	(2 x) 10 x 50	NZM3-XKV70 100514		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4 pole circuit-breakers. Central drill holes, e.g. for up to 2 cable lugs per phase. Can be fitted to circuit-breaker with screw termination. Phase isolator supplied. Distance between pole centres with NZM3(-4)-XKV70: 70 mm. Drill hole available for control cable.
		NZM3-4-XKV70 100515		1 off	
		NZM3-XKA1 271459		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. A standard with control circuit terminal for 1 x 0.75 – 2.5 mm ² (18 – 14 AWG) or 2 x 0.75 – 1.5 mm ² (18 – 16 AWG) copper conductors. Fitted outside the switch housing. Use with flexible and highly flexible conductors ferrules. Maximum specified cross-section can only be connected when stranded and without ferrules. Mounting of the cover NZM3(-4)-XKSA obligatory (supplied). Please note a maximum diameter of 20.5 mm resp. 22.5 mm.
		NZM3-4-XKA1 271460		1 off	
		NZM3-XKA2 271461		1 off	
		NZM3-4-XKA2 271462		1 off	

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Ordering

LZM3

xEnergy

	Max. cable connection area	For use with	Part no. Article no. when ordered separately	Price see price list
Cover				
	—	LZM3(-4) LN3(-4)	3 pole	NZM3-XKSA 260045
	—		4 pole	NZM3-4-XKSA 266801
Phase isolator				
	—	LZM3(-4) LN3(-4)	3 pole	NZM3-XKP 100512
	—		4 pole	NZM3-4-XKP 100513
Copper cable lug				
When using cable lugs without NZM3(-4)-XKSA cover, they must be insulated.				
	185 mm ²	LZM3(-4), LN3(-4) LZM4(-4), LN4(-4)	3 and 4 pole	NZM3-XKS185 260040
	240 mm ²			NZM3-XKS240 260041
	300 mm ²			NZM3-XKS300 153186

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xEnergy

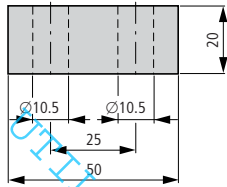


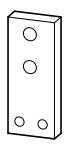


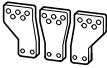
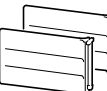


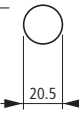
Std. pack **Notes**

- 1 off Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers.
Insulation/protection against direct contact where cable lugs, busbars or tunnel terminals are used.
- 1 off Included in set with tunnel terminals.
Degree of protection IP1X on the connection side when using insulated conductor material.

- 1 off Type contains parts for a terminal located at top or bottom for 3 or 4 pole circuit-breakers.
Included with the connection width extension.
- 1 off Cannot be combined with the NZM3(-4)-XKA tunnel terminal, NZM3(-4)-XKR connection on rear.
Insulation protection with connection of cable lugs, busbars or braid.

- 1 off Type contains a cable lug for 3-pole or 4-pole switches.
Special cable lug, narrow style

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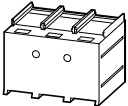
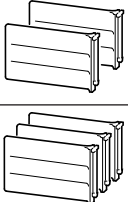

	Max. cable connection area	Rated current ¹⁾	For use with	Terminal capacities			
				Type of conductor	Terminal capacities	AWG/kcmil	
		I_n A			mm ²		
Screw connection							
Standard equipment							
	2-hole with stud bolts and nuts.	max. 1600	LZM4(-4) LN4(-4)	Three- and four-pole	Cu cable lugs	1 x 120 – 185 4 x 50 – 185	1 x 250 – 350 4 x 0 – 350
							
Module plate							
	Single hole	max. 1250	LZM4 LN4	3 pole	Copper cable lugs	1 x 120 – 300 2 x 95 – 300	1 x 250 – 600 2 x 000 – 600
	Double hole	max. 1400	LZM4 LN4	3 pole	Copper cable lugs	2 x 95 – 185 4 x 35 – 185	2 x 000 – 350 4 x 2 – 350
	Double hole	max. 1250	LZM4 LN4	3 pole	Copper cable lugs	2 x 95 – 300	2 x 000 – 600
	Double hole	max. 1600	LZM4 LN4	3 pole	Copper cable lugs	2 x 95 – 300	2 x 000 – 500
	Double hole		LZM4-4 LN4-4	4 pole		2 x 95 – 300	2 x 000 – 500
Connection width extension							
		max. 1600	LZM4 LN4	3 pole	Cu cable lugs	4 x 300 6 x 95 – 240	4 x 600 6 x 000 ... 500
			LZM4-4 LN4-4	4 pole			
Tunnel terminal							
		max. 1400	LZM4 LN4	3 pole	Copper conductors	1 x 50 – 240 4 x 50 – 240	1 x 0 – 500 4 x 0 – 500
			LZM4-4 LN4-4	4 pole	Cu cable Al conductors Al cable	1 x 50 – 240 4 x 50 – 240	1 x 0 – 500 4 x 0 – 500
							

Notes

¹⁾ The following applies for the rated current: The values have been determined conform to IEC/EN 60947 (switchgear standard) and generally relate to the max. defined cross-sections and are intended for the purpose of orientation.

xEnergy

Terminal capacities Cu strip (number of segments x width x segment thickness) mm	Copper busbar width x thickness mm	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
(2 x) 10 x 50 x 1.0	(2 x) 50 x 10			off	Double hole fitting for M10 stud bolts with 25 mm clearance. Use special cable lug narrow version.
(2 x) 10 x 40 x 1.0 (2 x) 10 x 50 x 1.0	(2 x) 40 x 10 (2 x) 50 x 10	NZM4-XKM1 266814		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. For M10 screws. Can be enlarged for M12 screws. Use special cable lug narrow version. Can be fitted to circuit-breaker with screw termination. Insulation through NZM4(-4)-XKSA cover necessary.
		NZM4-4-XKM1 266815		1 off	
		NZM4-XKM2 266820		1 off	
		NZM4-4-XKM2 266821		1 off	
		NZM4-XKM2S-1250 284471		1 off	
		NZM4-4-XKM2S-1250 284472		1 off	
		NZM4-XKM2S-1600 284473		1 off	
		NZM4-4-XKM2S-1600 284474		1 off	
min. 10 x 50 x 1.0	max. (2 x) 80 x 10	NZM4-XKV95 281591		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers.F ive way holes, e.g. for up to 9 cable lugs per phase. Can be fitted to circuit-breaker with screw termination. Phase isolator supplied.Distance between pole centres with NZM4(-4)-XKV95: 95 mm. Installation conditions for current transformer up to 130 mm width with 80 mm busbar width. Distance between pole centres with NZM4-XKV110: 107.5 mm. Installation conditions for current transformer up to 135 mm width with 80 mm busbar width. Distance between pole centres with NZM4-4-XKV120: 122 mm. Installation conditions for current transformer up to 164 mm width with 80 mm busbar width. 4 mm drilled holes for control circuit terminal available.
		NZM4-XKV110 281593		1 off	
		NZM4-4-XKV95 281592		1 off	
		NZM4-4-XKV120 281594		1 off	
		NZM4-XKA 266836		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4 pole circuit-breakers. A standard with control circuit terminal for 1 x 0.75 ... 2.5 mm ² (18 ... 14 AWG) or 2 x 0.75 ... 1.5 mm ² (18 ... 16 AWG) copper conductors. Can be fitted to circuit-breaker with screw termination. Use ferrules with flexible and highly flexible conductors. Max. cross section shown can only be connected when flexible and without ferrules. Use of the NZM4(-4)-XKSA cover obligatory(supplied).
		NZM4-4-XKA 266837		1 off	

	Max. cable connection area	For use with	Terminal capacities		
			Type of conductor	Terminal capacities	AWG/kcmil
			I_n	mm ²	
Cover					
	-	LZM4 LN4	3 pole		
	-	LZM4-4 LN4-4)	4 pole		
Phase isolators					
	-	LZM4 LN4	3 pole		
	-	LZM4-4 LN4-4)	4 pole		
Cable lug					
	185 mm ²	LZM3(-4) LZM4(-4) LN3(-4) LN4(-4)	3 and 4 pole		
	240 mm ²				
	300 mm ²				

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xEnergy

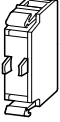


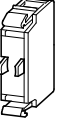



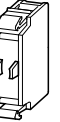


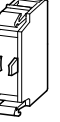



Part no.	Price	Std. pack	Notes
Article no. when ordered separately	see price list		
NZM4-XKSA 266846		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4 pole circuit-breakers. Protection against direct contact where cable lugs, busbars, flat cable terminals or tunnel terminals are used. With module plates, flat braid terminals and tunnel terminals included in the kit. When using insulated conductor material to degree of protection: IP1X.
NZM4-4-XKSA 266847			
NZM4-XKP 281595		1 off	Type contains parts for a terminal located at top or bottom for 3 or 4-pole circuit-breakers. Included with the connection width extension. Cannot be combined with the tunnel terminal NZM4(-4)-XKA, connection NZM4-XKR on rear. Insulation protection where cable lugs, busbars, module plates or flat cable terminals are used.
NZM4-4-XKP 281596			
NZM3-XKS185 260040		3 off	Type contains a cable lug for 3-pole or 4-pole switches. Special cable lug, narrow style.
NZM3-XKS240 260041			
NZM3-XKS300 153186			

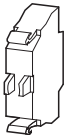
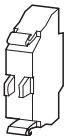
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Ordering

LZM, M22-...

xEnergy

		For use with	Auxiliary contacts: ⊕ = safety function, by positive opening to IEC/EN 60947-5-1		Contact sequence	Part no. Article no. when ordered separately	Price see price
			N/O = Normally open	N/C = Normally closed			
Auxiliary contacts							
Standard auxiliary contact (HIN) Switching with the main contacts Used for indicating and interlocking tasks							
		LZM1(-4), 2(-4), 3(-4), 4(-4) LN1(-4), 2(-4), 3(-4), 4(-4)	1 N/O			M22-K10 216376	
				1 N/C ⊕		M22-K01 216378	
	With 3 m connection cable instead of screw termination.	LZM1(-4), 2(-4), 3(-4), 4(-4) LN1(-4), 2(-4), 3(-4), 4(-4)	1 N/O	1 N/C ⊕			
			2 N/O				
				2 N/C ⊕			
Trip indicating auxiliary contact (HIA) General trip indication '+', when tripped by voltage release, overload release or short-circuit release							
		LZM1(-4), 2(-4), 3(-4), 4(-4) LN1(-4), 2(-4), 3(-4), 4(-4)	1 N/O			M22-K10 216376	
				1 N/C		M22-K01 216378	
	With 3 m connection cable instead of screw termination.	LZM1(-4), 2(-4), 3(-4), 4(-4) LN1(-4), 2(-4), 3(-4), 4(-4)	1 N/O	1 N/C			
			2 N/O				
				2 N/C			

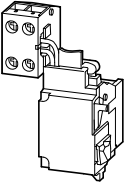

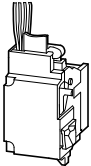

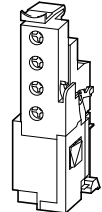

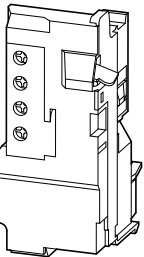

	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes	Notes
	M22-CK10 216384		20 off	For Std. pack: M22-(C)K... : Std. pack = 20 off	The following can be clipped into the switches: <ul style="list-style-type: none"> •LZM1 - one standard auxiliary contact •LZM2 - up to 2 standard auxiliary contacts M22-(C)K... •LZM3 and LZM4 - up to 3 standard auxiliary contacts M22-(C)K... Any combinations of the auxiliary contact types is possible. Marking on switch: HIN
	M22-CK01 216385		20 off		
	M22-CK11 107940		20 off		
	M22-CK20 107898				
	M22-CK02 107899				
	M22-CK10 216384		20 off	For Std. pack: M22-(C)K... : Std. pack = 20 off	The following can be clipped into the switches: <ul style="list-style-type: none"> •LZM1 - one trip-indicating auxiliary switch •LZM2 - one M22-(C)K... trip-indicating auxiliary switch •LZM3 - one M22-(C)K... trip-indicating auxiliary switch •LZM4 - up to two M22-(C)K... trip-indicating auxiliary switches Any combinations of the auxiliary contact types is possible. Marking on switch: HIA If the trip-indicating auxiliary contact in the fault-current block is used, the N/C contacts operates as a N/O contact and the N/C contact operates as an N/O contact (circuit symbol).
	M22-CK01 216385				
	M22-CK11 107940				
	M22-CK20 107898				
	M22-CK02 107899				

"UTILIZARE AUTORIZATA EXCLUSIV PENTRU PROIECTUL: ALIMENTAREA SONDEI ARTEZIENE SI RETELELOR DE CANTONUL GIODENI, REPUBLICA MOLDOVA"

Ordering

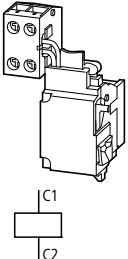
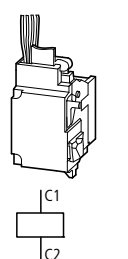
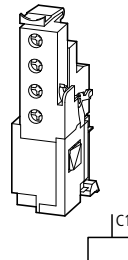
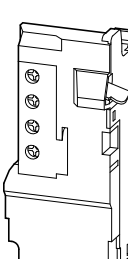
LZM1, LZM2/3, LZM4

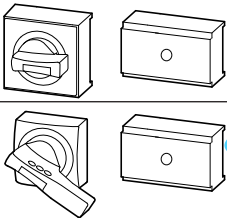
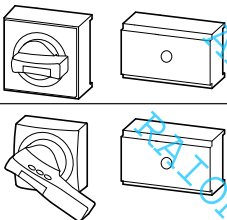
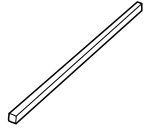
xEnergy

	For use with	Rated control voltage U_s V	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Undervoltage releases						
Without auxiliary contact Non-delayed disconnection of LZM circuit-breakers or LN switch-disconnectors when the control voltage sinks below 35 – 70% U_s . For use with Emergency-Stop devices in conjunction with Emergency-Stop button.						
 	With clamp terminal on the left-hand switch side.	LZM1(-4)	24 V 50/60 Hz	NZM1-XU24AC 259434	1 off	When the undervoltage release is de-energized, accidental contact with the main contacts of the switch during attempts to switch on, is safely prevented. Undervoltage release cannot be installed simultaneously with NZM...XHIV.. early-make auxiliary contact or NZM...XA... shunt release.
		LN1(-4)	208 V 240 V 50/60 Hz	NZM1-XU208-240AC 259442		
			380 V – 440 V 50/60 Hz	NZM1-XU380-440AC 259444		
			24 V DC	NZM1-XU24DC 259452		
 	With 3 m connection cable instead of screw termination.	LZM1(-4)	24 V 50/60 Hz	NZM1-XUL24AC 259462	1 off	
		LN1(-4)	208 V 240 V 50/60 Hz	NZM1-XUL208-240AC 259471		
			380 V – 440 V 50/60 Hz	NZM1-XUL380-440AC 259473		
			24 V DC	NZM1-XUL24DC 259481		
 		LZM2(-4)	24 V 50/60 Hz	NZM2/3-XU24AC 259491	1 off	
		LN2(-4)	208 V 240 V 50/60 Hz	NZM2/3-XU208-240AC 259499		
		LZM3(-4)	380 V – 440 V 50/60 Hz	NZM2/3-XU380-440AC 259501		
		LN3(-4)	24 V DC	NZM2/3-XU24DC 259509		
 		LZM4(-4)	24 V 50/60 Hz	NZM4-XU24AC 266189	1 off	
		LN4(-4)	208 V 240 V 50/60 Hz	NZM4-XU208-240AC 266193		
			380 V – 440 V 50/60 Hz	NZM4-XU380-440AC 266194		
			24 V DC	NZM4-XU24DC 266204		

LZM1, LZM2/3, LZM4




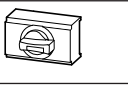

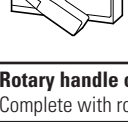




xEnergy

	For use with	Rated control voltage U_s V	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Shunt releases						
Without auxiliary contact Switches are tripped by a voltage pulse or by the application of uninterrupted voltage.						
	With clamp terminal on the left-hand switch	LZM1(-4)	24 V AC/DC	NZM1-XA24AC/DC 259708		When the undervoltage release is de-energized, accidental contact with the main contacts of the switch during attempts to switch on, is safely prevented. Shunt release cannot be installed simultaneously with NZM...-XHIV... early-make auxiliary contact or NZM...-XU... undervoltage release.
		LN1(-4)	208 V – 250 V AC/DC	NZM1-XA208-250AC/DC 259726		
			380 V – 440 V AC/DC	NZM1-XA380-440AC/DC 259728		
	With 3 m connection cable instead of screw termination.	LZM1(-4)	24 V AC/DC	NZM1-XAL24AC/DC 259736	1 off	
		LN1(-4)	208 V – 250 V AC/DC	NZM1-XAL208-250AC/DC 259744		
			380 V – 440 V AC/DC	NZM1-XAL380-440AC/D 259746		
		LZM2(-4)	24 V AC/DC	NZM2/3-XA24AC/DC 259754	1 off	
		LZM3(-4)	208 V – 250 V AC/DC	NZM2/3-XA208-250AC/DC 259763		
		LN2(-4) LN3(-4)	380 V – 440 V AC/DC	NZM2/3-XA380-440AC/DC 259766		
		LZM4(-4)	24 V AC/DC	NZM4-XA24AC/DC 266447	1 off	
		LN4(-4)	208 V – 250 V AC/DC	NZM4-XA208-250AC/DC 266451		
			380 V – 440 V AC/DC	NZM4-XA380-440AC/DC 266452		

		For use with	Part no. Article no.	Price see price list	Std. pack	Notes
Door coupling rotary handle						
Complete including rotary drive and coupling parts An additional extension shaft is necessary with the NZM...-XT(V)D(V)(R)(-60) types. Degree of protection IP66						
Standard, black/grey						
	Lockable on the 0 position on the handle using up to 3 padlocks. With door interlock	LZM1(-4), LN1(-4)	NZM1-XTVD 260166		1 off	Door interlock <ul style="list-style-type: none"> • Not defeated in the locked OFF and ON positions • Can be modified such that it can be defeated from the outside using a screwdriver, when it is in the unlocked ON position. • Door can be opened in OFF NZM...-XTVD(V) • External warning plate/ designation label can be clipped on
		LZM2(-4), LN2(-4)	NZM2-XTVD 260168			
		LZM3(-4), LN3(-4)	NZM3-XTVD 260170			
		LZM4(-4), LN4(-4)	NZM4-XTVD 266614			
Red-yellow for Emergency-Stop						
	Lockable on the handle on the switch using up to 3 padlocks. Lockable in 0 position on the handle. With door interlock. Lockable in the 0 position	LZM1(-4), LN1(-4)	NZM1-XTVDVR 260178		1 off	Door interlock <ul style="list-style-type: none"> • Not defeated in the locked OFF position. • Can be modified such that it can be defeated from the outside using a screwdriver, when it is in the unlocked ON position. • Door can be opened in OFF NZM...-XTVDVR • External warning plate/ designation label can be clipped on
		LZM2(-4), LN2(-4)	NZM2-XTVDVR 260180			
		LZM3(-4), LN3(-4)	NZM3-XTVDVR 260182			
		LZM4(-4), LN4(-4)	NZM4-XTVDVR 266618			
Extension shaft						
	Max. mounting depth: 400 mm	LZM1(-4), LN1(-4)	NZM1/2-XV4 261232		1 off	Length 290 mm
		LZM2(-4), LN2(-4)	NZM3/4-XV4 261234			
		LZM3(-4), LN3(-4)	NZM1/2-XV6 260191			Length 490 mm
		LZM4(-4), LN4(-4)	NZM3/4-XV6 260193			
	Max. mounting depth: 600 mm	LZM1(-4), LN1(-4)				
		LZM2(-4), LN2(-4)				
		LZM3(-4), LN3(-4)				
		LZM4(-4), LN4(-4)				

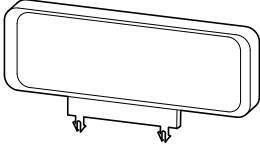



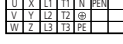
Notes

Circuit-breaker can also be installed in a lying position 90 ° left/right, with the handle still in the same position.

	For use with	Part no. Article no.	Price see price list	Std. pack	Notes
Rotary handle on circuit-breaker					
Complete with rotary drive					
Standard, black/grey					
	Lockable on the 0 position on the handle using up to 3 padlocks	LZM1(-4), LN1(-4)	NZM1-XDV 260125	1 off	NZM1(2)(3)-X... Can also be combined with insulating surround. MODAN handle position detection by wire release can be retrofitted.
		LZM2(-4), LN2(-4)	NZM2-XDV 260127		
		LZM3(-4), LN3(-4)	NZM3-XDV 260129		
		LZM4(-4), LN4(-4)	NZM4-XDV 266608		
	Lockable on the on position on the handle using up to 3 padlocks	LZM1(-4), LN1(-4)	NZM1-XDVG 285247		Can also be combined with insulating surround.
		LZM2(-4), LN2(-4)	NZM2-XDVG 285248		
Rotary handle on circuit breaker with door interlock					
Complete with rotary drive and insulating surround					
Standard, black/grey					
	Lockable on the 0 position on the handle using up to 3 padlocks, can also be modified for the I position. Also available with door interlock e.g. for MCC service distribution.	LZM1(-4), LN1(-4)	NZM1-XDTV 260131	1 off	Door interlock <ul style="list-style-type: none"> • In the ON position, can be defeated from the outside using a 1 mm pin • Not defeated in the locked OFF and ON positions • Door can be opened in OFF • Can only be switched ON when the door is closed
		LZM2(-4), LN2(-4)	NZM2-XDTV 260133		
Red-yellow for Emergency-Stop					
	Lockable on the 0 position on the handle using up to 3 padlocks. Also available with door interlock e.g. for MCC service distribution	LZM1(-4), LN1(-4)	NZM1-XDTVR 260142	1 off	
		LZM2(-4), LN2(-4)	NZM2-XDTVR 260144		

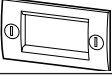
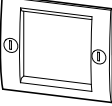
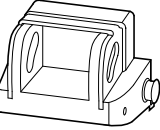

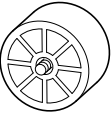
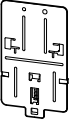

Ordering

NZM...-XRAV..., ZFS..., BPF...

For use with	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes																	
External warning plate/designation label																					
																					
German/English	LZM1(-4), LN1(-4) LZM2(-4), LN2(-4)	ZFS61/62-NZM7 272525	1 off	A bilingual external warning plate/ designation label in German/English is already included in the main switch assembly kit.																	
German	LZM3(-4), LN3(-4) LZM4(-4), LN4(-4)	ZFS61-NZM7 051089																			
English		ZFS62-NZM7 065957																			
French		ZFS63-NZM7 065958																			
Blank (for engraving or printing)		ZFS60-NZM7 065896																			
Further languages		ZFS*-NZM7 999978																			
					External warning plates are available in the following languages: <table border="0"> <tr> <td>64 Bulgarian</td> <td>73 Romanian</td> </tr> <tr> <td>65 Danish</td> <td>74 Russian</td> </tr> <tr> <td>66 Finnish</td> <td>75 Swedish</td> </tr> <tr> <td>67 Dutch</td> <td>76 Serbo-Croatian</td> </tr> <tr> <td>68 Italian</td> <td>77 Spanish</td> </tr> <tr> <td>69 Greek</td> <td>78 Czech</td> </tr> <tr> <td>70 Norwegian</td> <td>79 Turkish</td> </tr> <tr> <td>71 Polish</td> <td>80 Hungarian</td> </tr> <tr> <td>72 Portuguese</td> <td>81 Afrikaans</td> </tr> </table> To obtain the order number, insert the lan- guage code number into the type reference required. Ordering example External warning plate in Finnish: ZFS66-NZM7	64 Bulgarian	73 Romanian	65 Danish	74 Russian	66 Finnish	75 Swedish	67 Dutch	76 Serbo-Croatian	68 Italian	77 Spanish	69 Greek	78 Czech	70 Norwegian	79 Turkish	71 Polish	80 Hungarian
64 Bulgarian	73 Romanian																				
65 Danish	74 Russian																				
66 Finnish	75 Swedish																				
67 Dutch	76 Serbo-Croatian																				
68 Italian	77 Spanish																				
69 Greek	78 Czech																				
70 Norwegian	79 Turkish																				
71 Polish	80 Hungarian																				
72 Portuguese	81 Afrikaans																				
Lightning symbol Including terminal marking for main switch																					
Small	 	LZM1(-4), LN1(-4) LZM2(-4), LN2(-4)	BPF-NZM7 217294	10 off	Included as standard in main switch assembly kit																
Large	 	LZM3(-4), LN3(-4) LZM4(-4), LN4(-4)	BPF-NZM10 231363	10 off																	

xEnergy

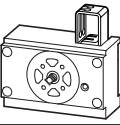
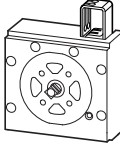
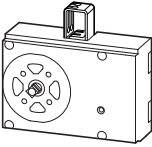

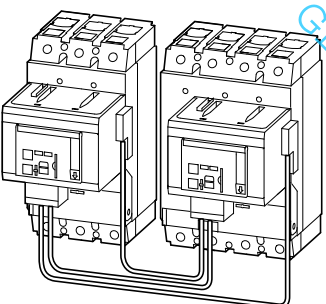
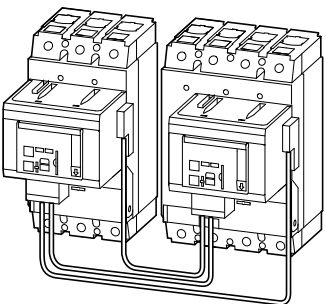
NZM...-XDZ, NZM...-XBR, NZM...-X...

	For use with	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Insulating surrounds					
For toggle lever, rotary handle with rotary drive and remote operator. Degree of protection IP40					
	LXM1(-4), LN1(-4)	NZM1-XBR 260195		1 off	For oblong cut-out on doors and enclosures with material thicknesses of 1.5 – 5 mm. External warning plate/designation label can be clipped on NZM4-XBR cannot be combined with rotary handle with rotary drive.
	LXM2(-4), LN2(-4)	NZM2-XBR 260197			
	LXM3(-4), LN3(-4)	NZM3-XBR 284645			
	LXM4(-4), LN4(-4)	NZM4-XBR 284646			
Toggle lever locking device					
Off position lockable using up to 3 padlocks (hasp thickness 4 – 8 mm)					
	LXM1(-4), LN1(-4)	NZM1-XKAV 260199		1 off	Cannot be combined with insulating surround.
	LXM2(-4), LN2(-4)	NZM2/3-XKAV 260201		1 off	
	LXM3(-4), LN3(-4)				
Spacers					
Enables fast and low-priced adjustment of differing frame sizes with/without rotary handle to the same front depth					
	LXM1(-4), LN1(-4) LXM2(-4), LN2(-4)	NZM1/2-XAB 260203		1 set	Grid depth 17.5 mm, M4 thread Type contains 4 off spacer Maximum component capacity: LXM1: 4 units per fixing screw, LXM2: 2 units per fixing screw 2 (LXM1) or 4 (LXM2) fixing screws contained per circuit-breaker
	LXM3(-4), LN3(-4) LXM4(-4), LN3(-4)	NZM3-XAB 260211		1 set	Grid depth 17.5 mm, M5 thread One set contains 4 spacers LXM3, LXM4: 1 off per fixing screw 4 fixing screws per switch included
Clip plate					
Enables snap-fit of the circuit-breaker to a DIN rail					
	LXM1(-4), LN1(-4)	NZM1-XC35 260213		1 off	For top-hat rail 35 mm
	LXM2, LN2	NZM2-XC75 260215		1 off	For top-hat rail 75 mm Not suitable for circuit-breakers with remote operator.

Ordering

NZM...XMV(R)(L), NZM-XBZ...

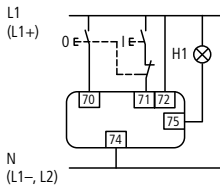
xEnergy

	For use with	Part no. Article no. when ordered separately	Price see price list	Std. pack	Notes
Mechanical interlocking of (door coupling) rotary handles					
	LZM1(-4), LN1(-4)	NZM1-XMV 281581		1 off	Rotary handles on switches or door coupling rotary handles are additionally required. Cannot be combined with paralleling mechanisms, side wall operators and remote operator as well as NZM4-XBR insulating surrounds. In order to establish a mechanical interlock at least 2 interlock modules are required. Possible combinations and interlock variants → engineering. Order Bowden cable separately.
	LZM2(-4), LN2(-4)	NZM2-XMV 281582			
	LZM3(-4), LN3(-4)	NZM3-XMV 281583			
	LZM4(-4), LN4(-4)	NZM4-XMV 281584			
Bowden cables					
	LZM1(-4), LN1(-4) LZM2(-4), LN2(-4) LZM3(-4), LN3(-4) LZM4(-4), LN4(-4)	NZM-XBZ225 281585 NZM-XBZ600 281586 NZM-XBZ1000 281587		1 off	
Mechanical interlock for remote operator					
For 2 switches of the same or next frame size with each other. Mounting beside one another.					
	LZM2(-4), LN2(-4) +LZM2(-4), LN2(-4) LZM2(-4), LN2(-4) +LZM3(-4), LN3(-4) LZM3(-4), LN3(-4) +LZM3(-4), LN3(-4) LZM3(-4), LN3(-4) +LZM4(-4), LN4(-4) LZM4(-4), LN4(-4) +LZM4(-4), LN4(-4)	NZM2-XMVR 104543 NZM2/3-XMVR 104544 NZM3-XMVR 104545 NZM3/4-XMVR 104546 NZM4-XMVR 104547		1 off	Type contains parts for both switches. Remote operator also required. Maximum switching distance → engineering. Cannot be combined with rotary handles, door coupling rotary handles and early-make auxiliary contacts.
For 2 switches of the same or different type with opposed operation. Extra long Bowden cable for mounting one above the other or in adjacent enclosures.					
	LZM2(-4), LN2(-4) +LZM2(-4), LN2(-4) LZM2(-4), LN2(-4) +LZM3(-4), LN3(-4) LZM3(-4), LN3(-4) +LZM3(-4), LN3(-4) LZM3(-4), LN3(-4) +LZM4(-4), LN4(-4) LZM4(-4), LN4(-4) +LZM4(-4), LN4(-4)	NZM2-XMVR L 104548 NZM2/3-XMVR L 104549 NZM3-XMVR L 104550 NZM3/4-XMVR L 104551 NZM4-XMVR L 104552		1 off	Type contains parts for both switches. Remote operator also required. Maximum switching distance → engineering. Cannot be combined with rotary handles, door coupling rotary handles and early-make auxiliary contacts.

	For use with	Rated control voltage	Part no. Article no. when ordered separately	Price see price list	Std. pack		
		U_s V					
Remote operator							
For remote switching of circuit-breakers and switch-disconnectors. ON and OFF switching and resetting by means of two-wire or three-wire control Local switching by hand possible. Lockable in the 0 position of the remote operator with up to 3 padlocks (hasp thickness: 4 – 8 mm)							
Closing delay 110 - 170 ms, opening delay 110 - 170 ms							
	LZM2(-4) LN2(-4)	208 – 240 V 50/60 Hz	NZM2-XRD208-240AC 115391		1 off Sliding switch for „Auto“ or „Manual“ Max. number auxiliary contacts: - Standard auxiliary contacts: 2 - Trip-indicating auxiliary contact: 1 Cannot be combined with switch-disconnector LN... Cannot be combined with mechanical interlock		
		380 – 440 V 50/60 Hz	NZM2-XRD380-440AC 115392				
		24 – 30 V DC	NZM2-XRD24-30DC 115393				
Closing delay 60 - 100 ms, opening delay 300 - 3000 ms							
Can be synchronized							
	LZM2(-4) LN2(-4)	208 – 240 V 50/60 Hz	NZM2-XR208-240AC 259832		1 off Cannot be combined with switch-disconnector LN... Dual auxiliary switch M22-CK11 (20/02) can not be combined with remote operator NZM3-XR..		
		380 – 440 V 50/60 Hz	NZM2-XR380-440AC 259834				
		24 – 30 V DC	NZM2-XR24-30DC 259836				
	LZM3(-4) LN(-4)	208 – 240 V 50/60 Hz	NZM3-XR208-240AC 259850				
		380 – 440 V 50/60 Hz	NZM3-XR380-440AC 259852				
		24 – 30 V DC	NZM3-XR24-30DC 259854				
	LZM4(-4) LN4(-4)	208 – 240 V 50/60 Hz	NZM4-XR208-240AC 266685				
		380 – 440 V 50/60 Hz	NZM4-XR380-440AC 266686				
		24 – 30 V DC	NZM4-XR24-30DC 266691				
	Shroud for 4th pole						
	Additional shroud for mounting the NZM2-XR... and NZM3-XR... on a 4-pole switch.						
		LZM2(-4), LN2-4		NZM2-XAVPR 266677			1 off
	LZM3-4, LN3-4		NZM3-XAVPR 266678		1 off		
Protective cover for door cutout							
Transparent protective shroud to increase the degree of protection to IP54							
			RTR-NZM10 034825		1 off		
Notes							
Two- and three-wire control, circuit diagram Engineering, Page 36							

2/3- wire control remote operator

Three-wire control



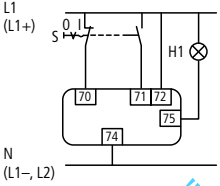
Terminal 70/71:

NZM-XR: Contact loading according to technical data

NZM2-XRD: Full current flows through the contact during make and break!

RMQ series contact elements can be used for the remote operators NZM2(3,4)-XR...

Two-wire control



Terminal 75:

NZM-XR: Operational readiness signal when the cover is closed, and not locked.

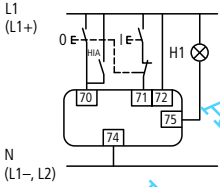
NZM2-XRD: Operational readiness signal when sliding switch set to Auto.

Sliding switch with three positions: Manual/Auto/Locked for reliable differentiation of operating positions.

AC-15: 400 V; 2 A

DC-13: 220 V; 0.2 A

Three-wire control with automatic reset to the 0 position after the switch has tripped



Switching cycle:

NZM2-XRD



NZM2-XR



NZM3-XR



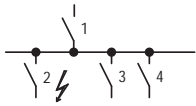
NZM4-XR



The time interval between OFF and ON is 3 seconds.

On commands received during the time interval are ignored within the first 3 seconds after switch off.

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Incoming circuit-breaker

Selectivity 415 V AC

between circuit-breakers enables separate shut-down of faulty system sections.

Selectivity (discrimination) exists between incoming breaker 1 and outgoing breaker 2 if, only outgoing breaker 2 trips at position 2 during a short-circuit. System sections 3 and 4 continue to operate.

Incoming circuit-breaker (S1)

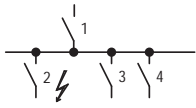
LZM...1-A...

Incoming circuit-breaker (S1)

LZM...2-A...

Outgoing circuit-breaker (S2)	I_n [A]	$I_{cu}(415V)$ [kA]	25(36)(50)							25(36)(50)				
			20...40	50	63	80	100	125	160	160	200	250	300	
FAZ-B(C)	0.5	15	T	T	T	T	T	T	T	T	T	T	T	T
	1	15	T	T	T	T	T	T	T	T	T	T	T	T
	2	15	T	T	T	T	T	T	T	T	T	T	T	T
	3	15	1.2	2	3	3	10	T	T	T	T	T	T	T
	4	15	1.2	2	3	3	8	T	T	T	T	T	T	T
	6	15	1.2	2	2.5	3	5	10	10	T	T	T	T	T
	10	15	1.2	1.5	2	2	4	10	10	10	10	10	10	10
	13	15	1	1.5	2	2	4	10	10	10	10	10	10	10
	16	15	1	1.2	1.5	2	3	8	8	10	10	10	10	10
	20	15	0.8	1.2	1.5	1.5	3	8	8	10	10	10	10	10
	25	15	0.7	1.2	1.5	1.5	3	7	7	10	10	10	10	10
	32	15	—	1.2	1	1.5	2	6	6	8	8	10	10	10
	40	15	—	—	1	1.5	2	5	5	7	7	10	10	10
	50	15	—	—	—	1.2	1.5	4	4	6	6	10	10	10
	63	15	—	—	—	—	1.5	3	3	6	6	10	10	10
PKZM0-...	0.16	100	T	T	T	T	T	T	T	T	T	T	T	T
	0.25	100	T	T	T	T	T	T	T	T	T	T	T	T
	0.4	100	T	T	T	T	T	T	T	T	T	T	T	T
	0.63	100	T	T	T	T	T	T	T	T	T	T	T	T
	1	100	T	T	T	T	T	T	T	T	T	T	T	T
	1.6	100	T	T	T	T	T	T	T	T	T	T	T	T
	2.5	100	T	T	T	T	T	T	T	T	T	T	T	T
	4	100	T	T	T	T	T	T	T	T	T	T	T	T
	6.3	100	4	5	5	5	5	5	5	5	5	5	5	5
	10	100	3	4	5	6	25	T	T	T	T	T	T	T
	12	50	3	4	5	6	25	T	T	T	T	T	T	T
	16	50	1.5	1.5	2	3	5	7	7	T	T	T	T	T
	20	50	0.8	1.5	1.5	2	3	5	T	T	T	T	T	T
	25	50	—	1	1.5	1.5	2.5	4	T	T	T	T	T	T
	32	50	—	—	1	1.5	2	3.5	T	T	T	T	T	T
PKE12/XTU(A)-...	1.2	—	0.4	0.5	0.6	0.8	1	1.2	T	T	T	T	T	T
	4.0	—	0.4	0.5	0.6	0.8	1	1.2	1.5	1.8	5	6	15	15
	12.0	—	0.4	0.5	0.6	0.8	1	1.2	1.3	1.6	3.5	4	9	9
PKE32/XTU(A)-...	4.0	—	—	0.5	0.6	0.8	1	1.2	1.3	1.8	5	6	15	15
	12	—	—	0.5	0.6	0.8	1	1.2	1.3	1.6	3.5	4	9	9
	32	—	—	0.5	0.6	0.8	1	1.2	1.3	1.6	2	2.5	3	3
PKE65/XTU(W)(A)-...	32	—	—	—	—	—	1	1.2	1.3	1.6	2	2.5	3	3
	65	—	—	—	—	—	1	1.2	1.3	1.6	2	2.5	3	3
PKE32/XTUCP(A)-...	36	—	—	0.5	0.6	0.8	1	1.2	1.3	1.6	2	2.5	3	3
PKE65/XTUCP(A)-...	65	—	—	—	—	—	1	1.2	1.3	1.6	2	2.5	3	3
PKZM4	16	100	0.5	0.8	0.8	0.8	2	5	5	5	5	5	5	5
	25	100	—	0.7	0.8	0.8	1.5	5	5	5	5	5	5	5
	32	50	—	—	0.8	0.8	1.5	4	4	4	4	4	4	4
	40	50	—	—	—	0.8	1.5	3	3	3	3	3	3	3
	50	50	—	—	—	—	1	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	58	50	—	—	—	—	—	2.5	2.5	2.5	2.5	2.5	2.5	2.5
	63	50	—	—	—	—	—	2	2	2	2	2	2	2

Notes T: full selectivity



Incoming circuit-breaker
Outgoing circuit-breaker

Selectivity 415 V AC

between circuit-breakers enables separate shut-down of faulty system sections. Selectivity (discrimination) exists between incoming breaker 1 and outgoing breaker 2 if, only outgoing breaker 2 trips at position 2 during a short-circuit. System sections 3 and 4 continue to be operational.

Incoming circuit-breaker (S1)
LZM...1-A...

Incoming circuit-breaker (S1)
LZM...2-A...

	I_{cu} [kA]	I_n [A]	25(36)(50)							25(36)(50)				
			20...40	50	63	80	100	125	160	160	200	250	300	
Outgoing circuit-breaker (S2)	I_n [A]	$I_{cu}(415V)$ [kA]	Prospective short-circuit current (kA). Set the overload and short-circuit release of the incoming circuit-breaker to the max. value.											
LZM...1-A...	20...40	25...50	-	-	0.5	0.7	0.8	1.5	1.5	1.5	2	3	3	
	50	25...50	-	-	-	0.6	0.8	1.5	1.5	1.5	2	3	3	
	63	25...50	-	-	-	-	0.8	1.5	1.5	1.5	2	3	3	
	80	25...50	-	-	-	-	-	1.5	1.5	1.5	2	3	3	
	100	25...50	-	-	-	-	-	-	1.5	1.5	2	3	3	
	125	25...50	-	-	-	-	-	-	-	1.5	2	3	3	
	160	25...50	-	-	-	-	-	-	-	-	2	3	3	
LZM...2-A...	160	25...50	-	-	-	-	-	-	-	-	-	2	2	
	200	25...50	-	-	-	-	-	-	-	-	-	-	-	
	250	25...50	-	-	-	-	-	-	-	-	-	-	-	
	300	25...50	-	-	-	-	-	-	-	-	-	-	-	
LZM...3-AE...	630	50...50	-	-	-	-	-	-	-	-	-	-	-	
LZM...4-AE...	800	50...50	-	-	-	-	-	-	-	-	-	-	-	
	1000	50...50	-	-	-	-	-	-	-	-	-	-	-	

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Notes T: full selectivity

LZM...3-A...			LZM...3-AE...			LZM...4-AE...		
36(50)			36(50)			50		
320	400	500	630			800	1000	
Prospective short-circuit current (kA). Set the overload and short-circuit release of the incoming circuit-breaker to the max. value.								
4	6	7	20			T	T	
4	6	7	20			T	T	
4	6	7	15			T	T	
4	6	7	15			T	T	
4	6	7	15			T	T	
4	6	7	15			T	T	
4	6	7	15			T	T	
4	5	6	10			T	T	
-	5	6	10			T	T	
-	5	6	10			T	T	
-	5	6	10			T	T	
-	-	-	-			T	-	
-	-	-	-			-	-	
-	-	-	-			-	-	

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Notes T: full selectivity

Protection of PVC insulated cables against thermal overload with short-circuits

According to VDE 0100 part 430 cables and conductors must be protected against short-circuit and overload. The overload protection is obtained by using LZM circuit-breakers with settable, current-dependent, delayed overload release.

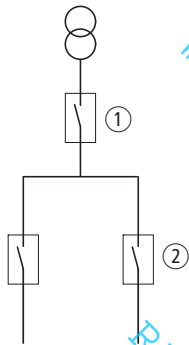
Short-circuit protection is provided by adjustable instantaneous releases, which open the main contacts in less than 25ms. The short-circuit total opening time restricts the temperature rise of the cable to a minimum.

The tables indicate the minimum conductor cross-section reliably protected by circuit-breakers during a short-circuit. (Operating voltage $U_N=415V$)

	Min. protected cross-section mm ² copper
LZM...1(-4)-...20	6
LZM...1(-4)-...25 ... 160	10
LZM...2(-4)-...20 ... 300	10
LZM...3(-4)-...250 ... 630	16
LZM...4(-4)-...630 ... 1000	95

Back-up protection

between LZM(N)(S) incoming circuit-breaker and LZM(B)(C)(N) outgoing circuit-breaker



Outgoing circuit-breaker ②

	$I_{cu}(415V)$	I_n
LZMB1	36 kA	up to 160 A
LZMC1	50 kA	up to 160 A
LZMB2	25 kA	up to 300 A
LZMC2	36 kA	up to 300 A
LZMC3	36 kA	up to 630 A
LZMN3	50 kA	up to 630 A

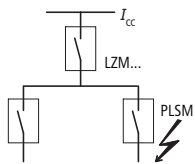
Incoming circuit-breaker ①		LZM2		LZM3
LZM1		up to 300 A		up to 630 A
up to 160 A		25 kA	36 kA	50 kA
25 kA	36 kA			
25	36	25	36	50
—	36	—	36	50
25	36	25	36	50
—	36	—	36	50
—	—	—	—	50
—	—	—	—	50

Where the prospective fault current at the point of installation of circuit-breakers is very high, it is conventional to use LZMN current-limiting circuit-breakers. An attractively priced alternative is to fit a LZMN current-limiting circuit-breaker upstream of LZMB(C) standard circuit-breakers, if the fault level is too high for LZMB(C) switches.

The table shows which current-limiting circuit-breaker LZMN in combination with LZMB(C) are to be used to provide protection at the network locations with high short-circuit capacities.

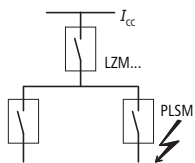
The selectivity limit is determined by the response current of the non-delayed short-circuit release in the upstream incoming circuit-breaker. In many applications this is sufficient.

between LZM...1-A... incoming circuit-breaker and FAZ-B(C)/PLSM-B(C)... outgoing circuit-breaker



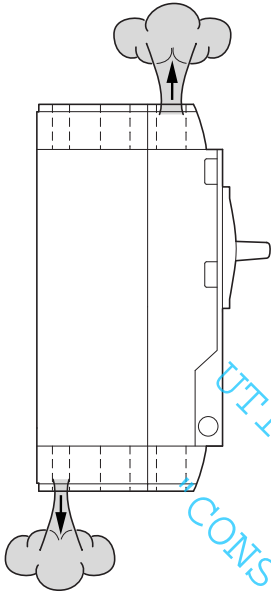
Outgoing circuit-breaker	Outgoing circuit-breaker LZMB2-A...	LZMC(N)1-A...
FAZ-B(C)...		
0,5–16	25kA	30kA
20–40	20kA	20kA
50, 63	15kA	15kA
PLSM-B(C)...(/...)		
0,5–16	25kA	30kA
20–40	20kA	20kA
50, 63	15kA	15kA

between LZM...2-A... incoming circuit-breaker and FAZ-B(C)/PLSM-B(C)... outgoing circuit-breaker



Outgoing circuit-breaker	Incoming circuit-breaker LZMB2-A...	LZMN2-A...
FAZ-B(C)...		
0,5–10	25 kA	50 kA
13–32	25 kA	30 kA
40–63	20 kA	20 kA
PLSM-B(C)...(/...)		
0,5–10	25 kA	50 kA
13–32	25 kA	30 kA
40–63	20 kA	20 kA

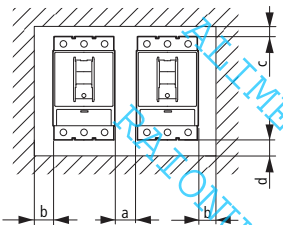
Direction of blow-out



	Top, front	Bottom, rear
LZM1	X	–
LZM2 ¹⁾	X	X
LZM3	X	X
LZM4	X	–

¹⁾ LZM2B(C) – A ... as LZM1

Minimum clearances



between two adjacently mounted switches
Minimum clearance a in mm

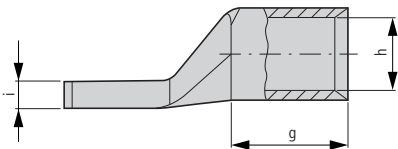
	LZM1	LZM2	LZM3	LZM4
LZM1	0	5	5	15
LZM2	5	5	5	15
LZM3	5	5	5	15
LZM4	15	15	15	15

between switch and other parts
Minimum clearances in mm

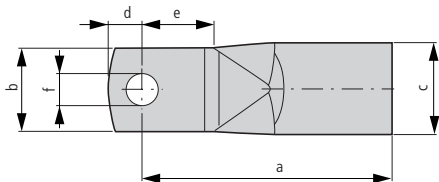
	b	c	d
	≤ 440 V	≤ 440 V	≤ 440 V
LZM1	0	30	0
LZM2 ¹⁾	5	20	35
LZM3	5	30	60
LZM4	15	50	0

¹⁾ LZM2B(C) – A ... c = 20 mm, d = 0 mm

Dimensions



For pressing the cable lugs a press tool K22, HK60/22 or EK22 from the company Klauke is necessary with the following press inserts:
R22/95 for 95 mm²
R22/120 for 120 mm²
R22/150 for 150 mm²
R22/185 for 185 mm²
R22/240 for 240 mm²

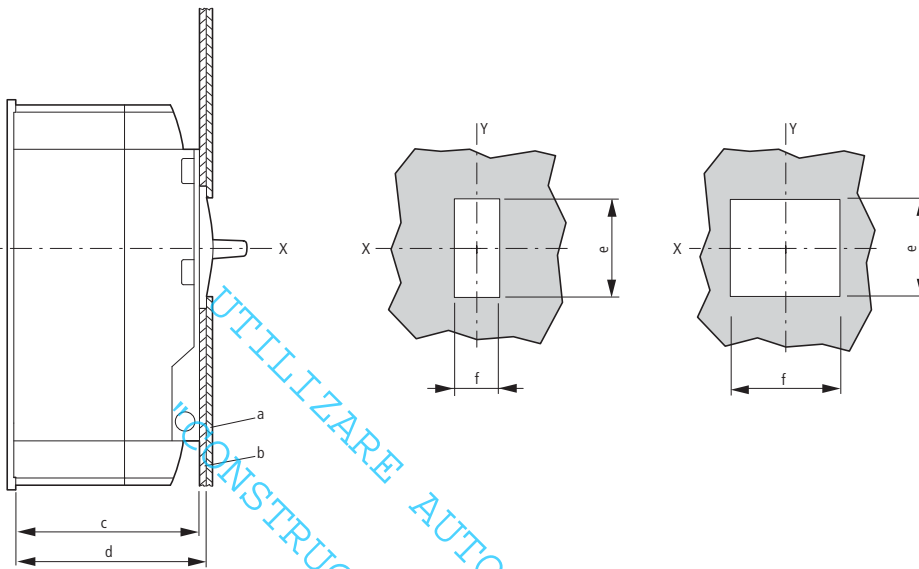


Cable lug	For use with	Rated cross section mm ²	Terminal bolt ø	Dimensions in mm								
				a	b	c	d	e	f	g	h	i
KS95-NZM7	LZM2	95	M8	53 ⁺²	23 ^{±0.5}	18 ^{±0.2}	10 ^{±1}	19	8,5	25	13,5	4,4
KS120-NZM7	LZM2	120	M8	56 ⁺²	23 ^{±0.5}	19.5 ^{±0.2}	10 ^{±1}	19	8,5	26	15	4,4
KS150-NZM7	LZM2	150	M8	61 ⁺²	23 ^{±0.5}	21 ^{±0.2}	10 ^{±1}	19	8,5	30	16,5	4,4
NZM2-XKS185	LZM2	185	M8	65 ^{±1.5}	22 ^{±1}	24 ^{±0.3}	9 ^{+1.5} _{-0.5}	19 ^{+2.5} _{-0.5}	8.5 ^{+0.05} _{-0.1}	30 ^{±2}	19 ^{±0.4}	7
NZM3-XKS185	LZM3, LZM4	185	M10	65	24,5	24	11,5	18	10,5	30	19	7.0 ^{±0.8}
NZM3-XKS240	LZM3, LZM4	240	M10	72	31	26	11,5	19	10,5	35	21	5.0 ^{±0.8}

Front cut-out

Cut-out a
toggle lever

Cut-out b
rotary handle,
remote operator

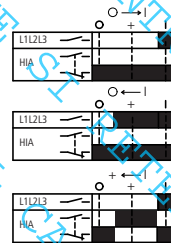
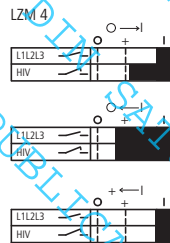
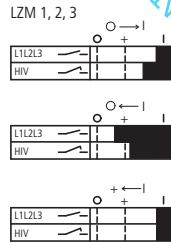
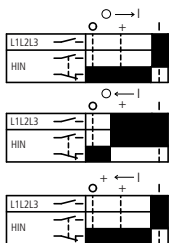


	Distance from mounting plate and door cutout		Cut-out a		Cut-out b	
	c	d	e	f	e	f
LZM1	68	73	40	23	46	91
LZM2	103	108	79	36	96	101
LZM3	120.5	125.5	79	36	96	136
LZM4	138	146	101	105	118	204

Standard auxiliary contact (HIN)

Early-make auxiliary contact (HIV)

Trip-indicating auxiliary contact (HIA)



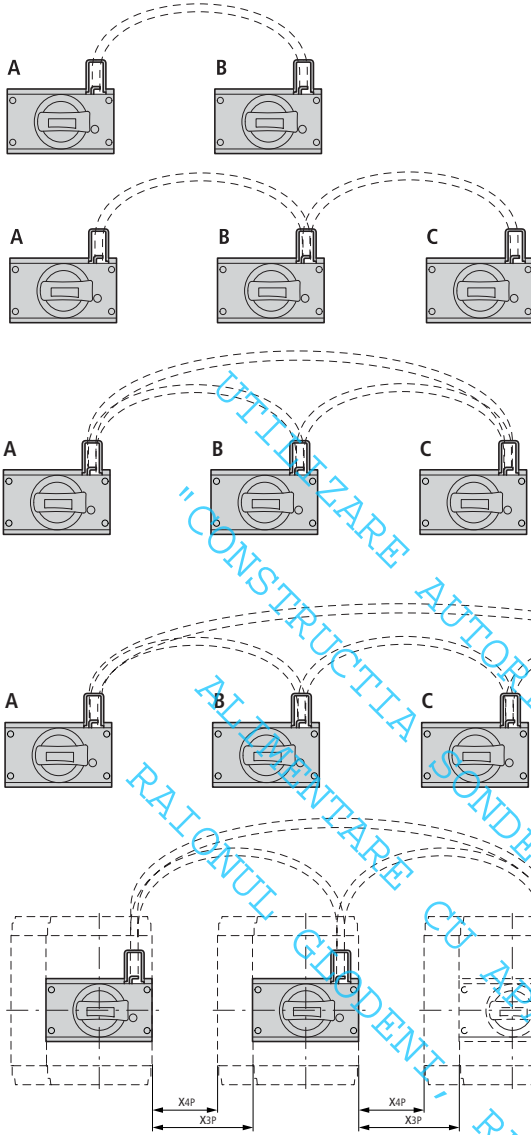
- 0 → I Switching on
- 0 ← I Switching off
- + ← I Trip

- Contact closed
- Contact open

Notes

If early-make contacts are required in combination with shunt or undervoltage releases, please select the combination type in the "Release" section.

Interlocking variants and combination options



A	B
OFF	OFF
ON/TRIP	ON
ON	ON/TRIP

A	B	C
OFF	OFF	OFF
ON	ON/TRIP	ON
ON/TRIP	ON	ON/TRIP

A	B	C
OFF	OFF	OFF
ON/TRIP	ON	ON
ON	ON/TRIP	ON
ON	ON	ON/TRIP

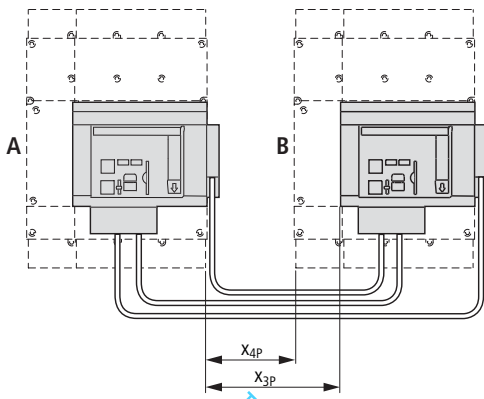
A	B	C	D
OFF	OFF	OFF	OFF
ON/TRIP	ON	ON/TRIP	ON
ON	ON/TRIP	ON	ON/TRIP

= Switch clearance 3 pole
 = Switch clearance 4 pole

NZM-XBZ225		right switch							
max. switch clearance		LZM1		LZM2		LZM3		LZM4	
		X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}
left switch		mm	mm	mm	mm	mm	mm	mm	mm
LZM1	3/4 pole	135	105	120	85	135	90	125	80
LZM2	3/4 pole	135	105	120	85	135	90	125	80
LZM3	3/4 pole	90	75	75	35	85	40	80	45
LZM4	3/4 pole	50	35	40	15	25	-	15	-

NZM-XBZ600		right switch							
max. switch clearance		LZM1		LZM2		LZM3		LZM4	
		X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}
left switch		mm	mm	mm	mm	mm	mm	mm	mm
LZM1	3/4 pole	510	480	495	460	510	465	475	405
LZM2	3/4 pole	510	480	495	460	510	465	475	405
LZM3	3/4 pole	460	430	450	410	460	415	460	390
LZM4	3/4 pole	400	370	380	340	400	375	390	320

NZM-XBZ1000		right switch							
max. switch clearance		LZM1		LZM2		LZM3		LZM4	
		X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}	X _{3P}	X _{4P}
left switch		mm	mm	mm	mm	mm	mm	mm	mm
LZM1	3/4 pole	910	880	895	860	910	865	865	795
LZM2	3/4 pole	910	880	895	860	910	865	865	795
LZM3	3/4 pole	820	790	850	810	860	815	860	790
LZM4	3/4 pole	750	720	730	700	800	775	790	720

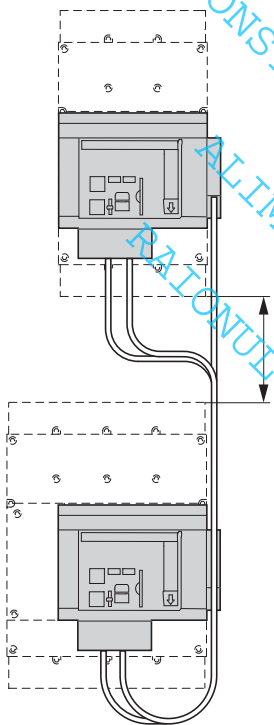


**XMVR mechanical interlock
(Mounting adjacent)**

NZM...-XMVR		right switch					
max. switch clearance		LZM2	LZM3		LZM4		
		X _{3p}	X _{4p}	X _{3p}	X _{4p}	X _{3p}	X _{4p}
left switch		mm	mm	mm	mm	mm	mm
LZM2	3/4 pole	130	95	95	50	–	–
LZM3	3/4 pole	–	–	135	90	155	85
LZM4	3/4 pole	–	–	–	–	120	50

X_{3P} = max. switch clearance 3 pole

X_{4P} = max. switch clearance 4 pole



**XMVRL mechanical interlock
Mounting in adjacent enclosures**

NZM...-XMVRL		right switch					
max. switch clearance		LZM2	LZM3		LZM4		
		X _{3p}	X _{4p}	X _{3p}	X _{4p}	X _{3p}	X _{4p}
left switch		mm	mm	mm	mm	mm	mm
LZM2	3/4 pole	350	315	420	385	–	–
LZM3	3/4 pole	–	–	400	365	460	390
LZM4	3/4 pole	–	–	–	–	420	350

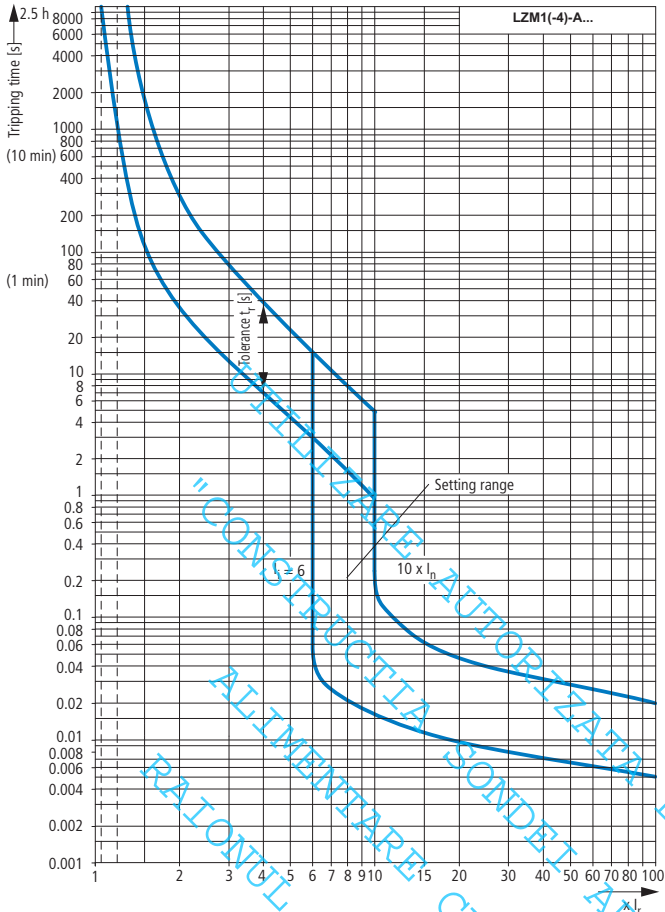
**XMVRL mechanical interlock
(Mounting one above the other)**

NZM...-XMVRL		Switch top		
max. switch clearance		LZM2	LZM3	LZM4
		3/4 pole	3/4 pole	3/4 pole
Switch bottom		mm	mm	mm
LZM2	3/4 pole	220	225	–
LZM3	3/4 pole	–	220	230
LZM4	3/4 pole	–	–	230

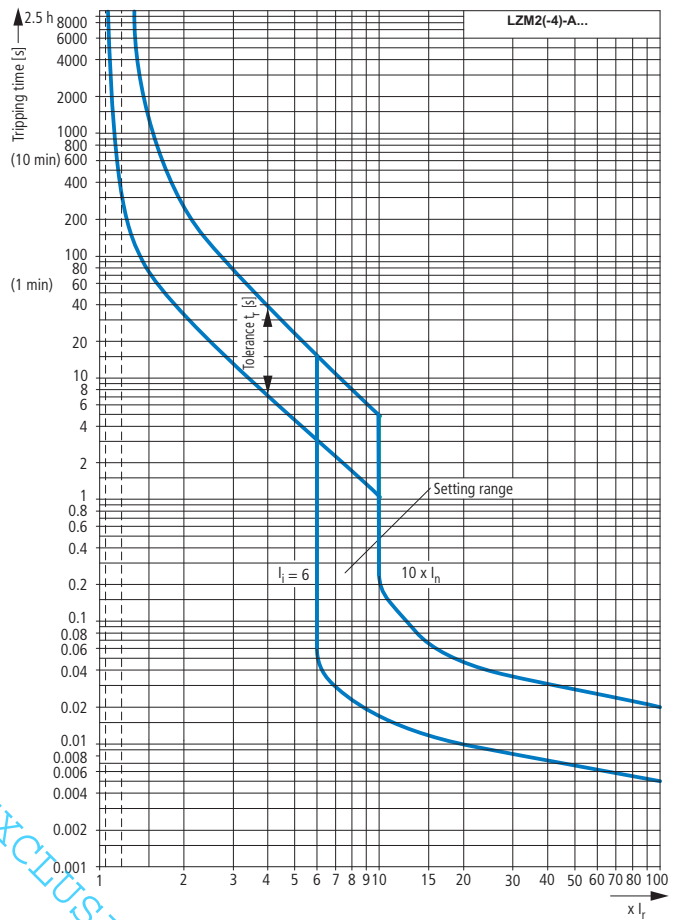
Y = max. switch clearance

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"CONSTRUCTIA SONDEI ARTEZIENE SI RETELELOR DE
ALIMENTARE CU APA DIN SATUL CAJBA,
RAIONUL GLODENI, REPUBLICA MOLDOVA"

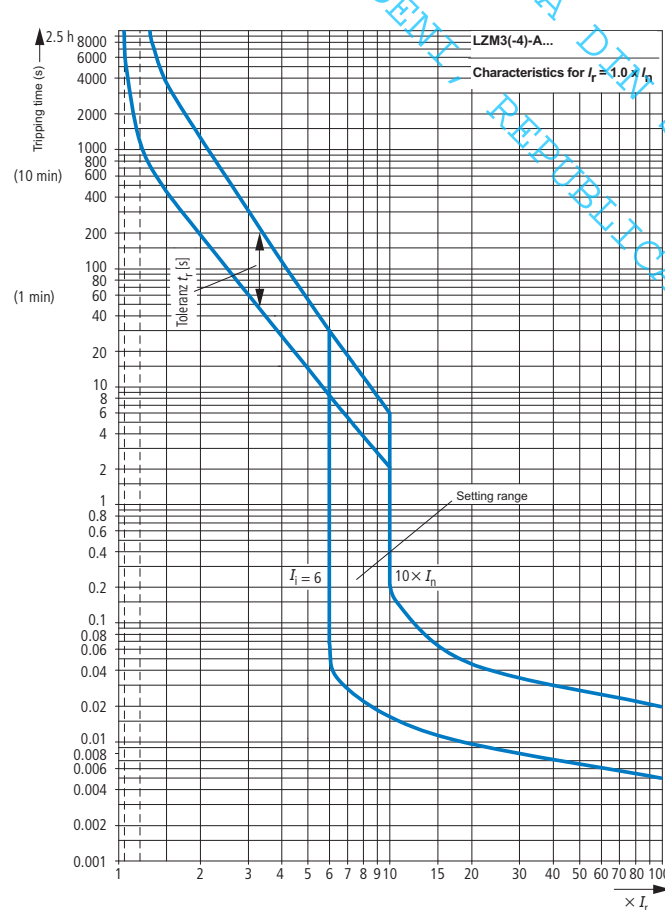
System and line protection with LZM1



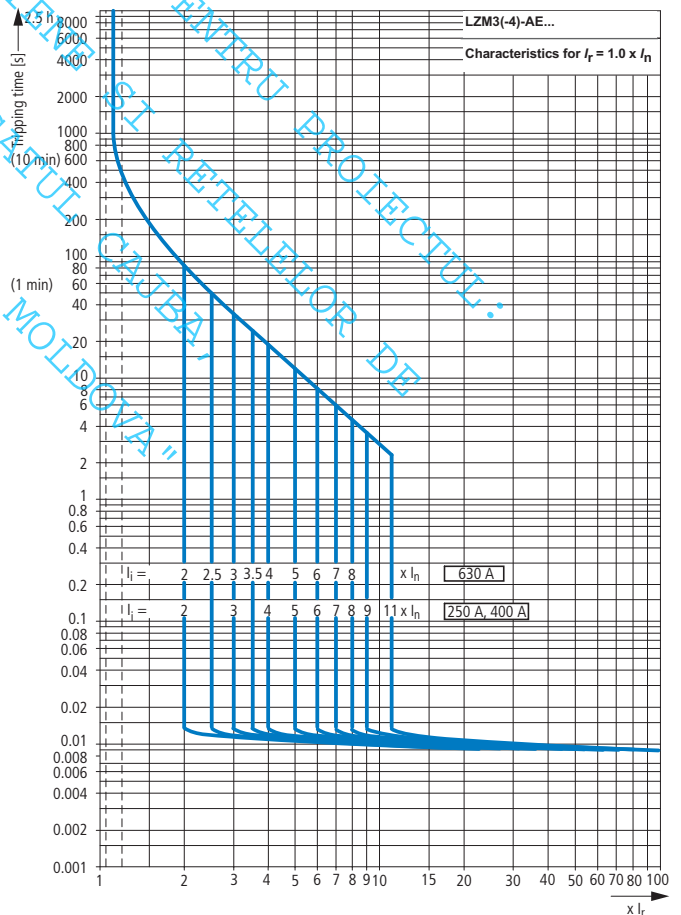
System and line protection with LZM2



System and line protection with LZM3...-A...

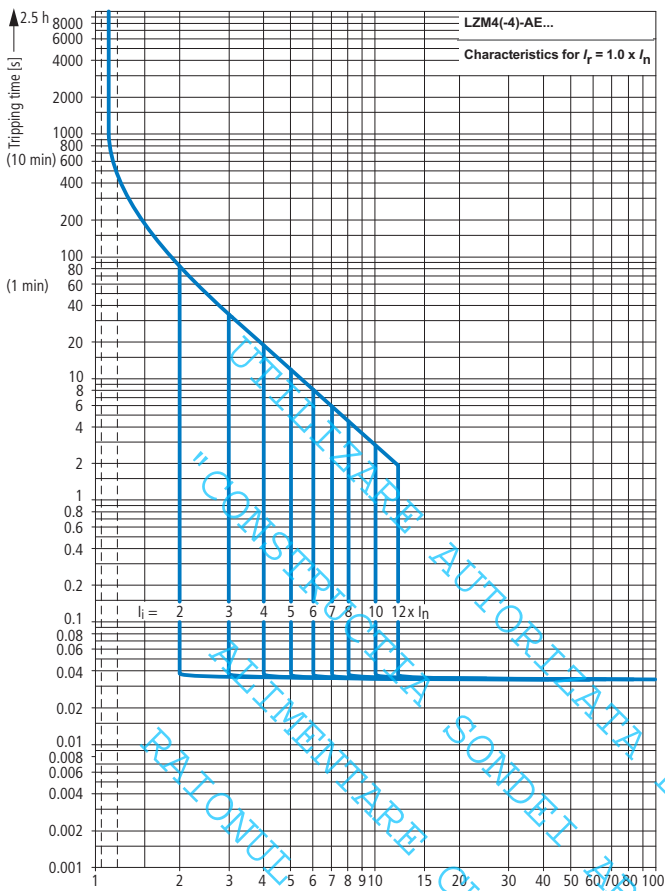


System and line protection with LZM3...-AE...



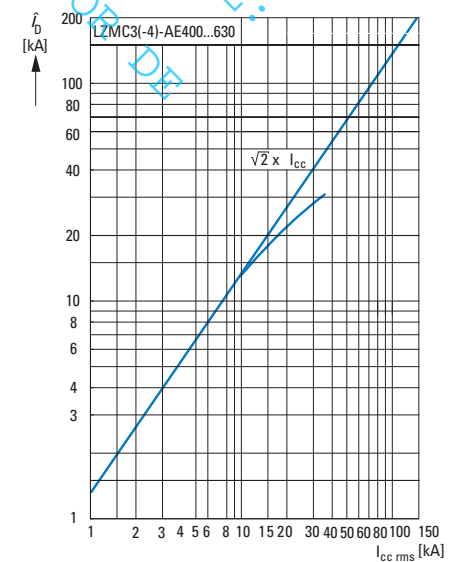
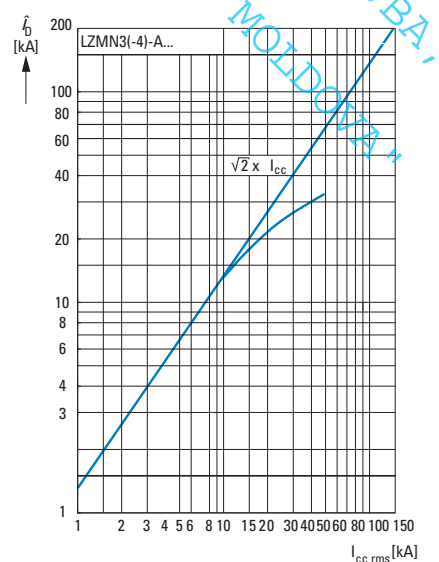
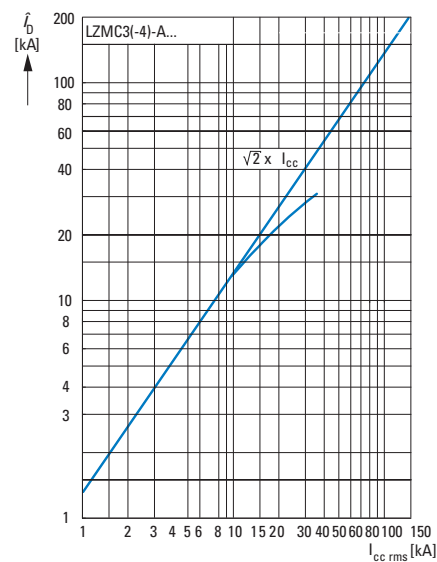
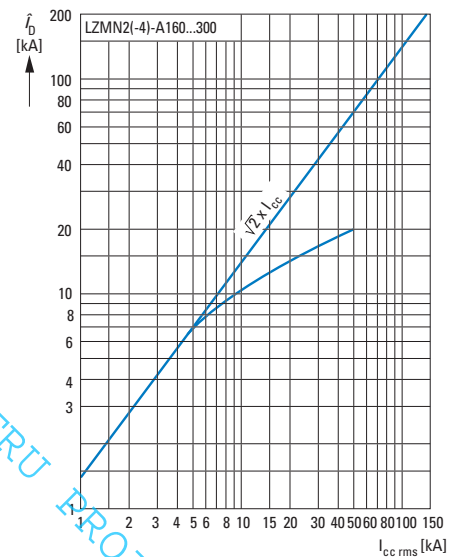
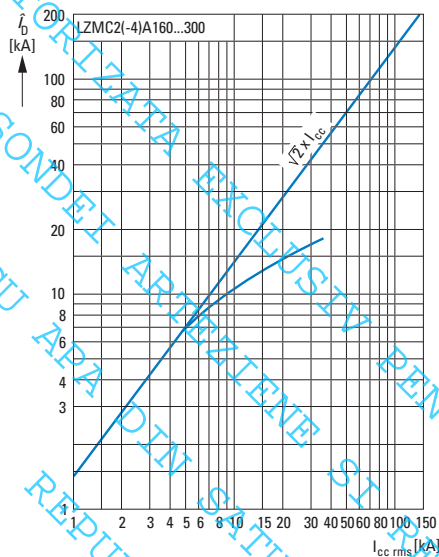
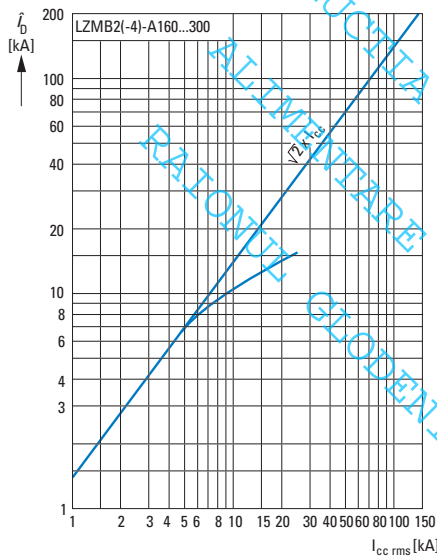
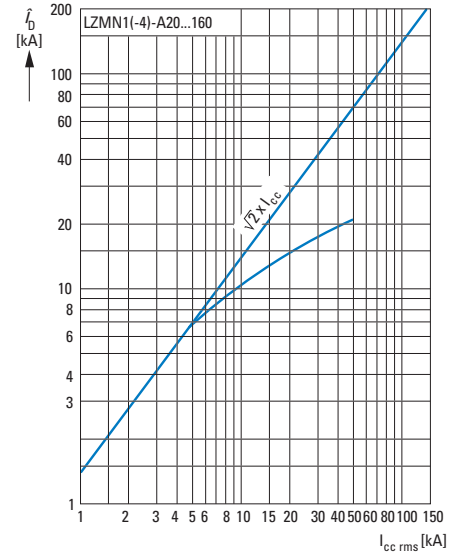
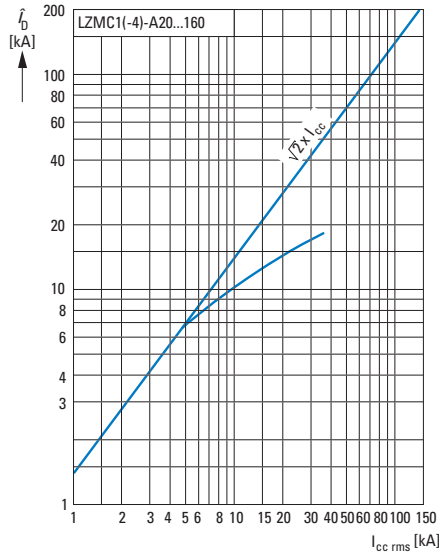
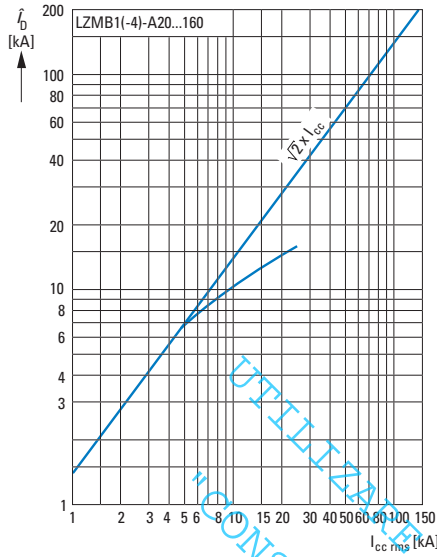
xEnergy

System and line protection with LZM4



"CONSPECTAREA AUTORIZATA
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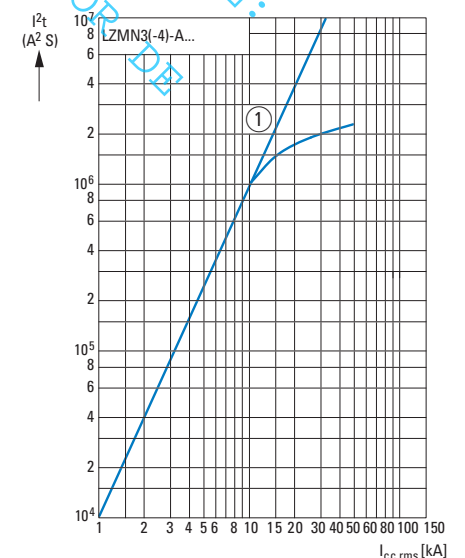
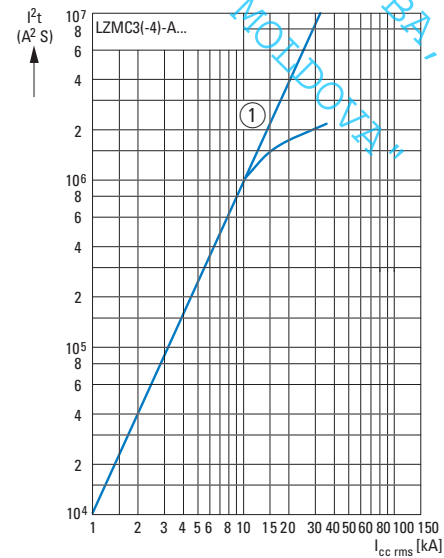
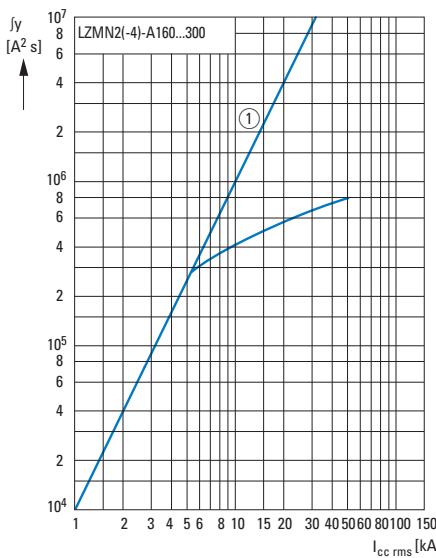
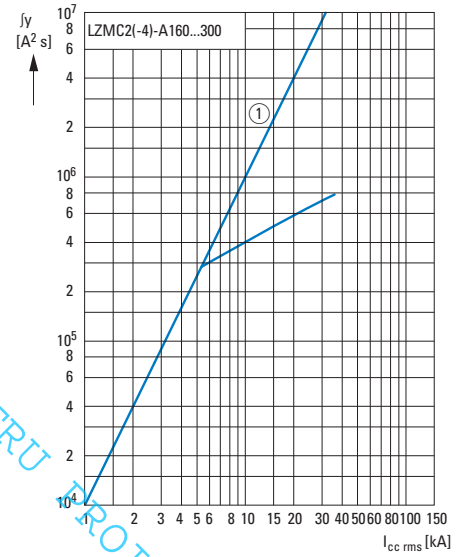
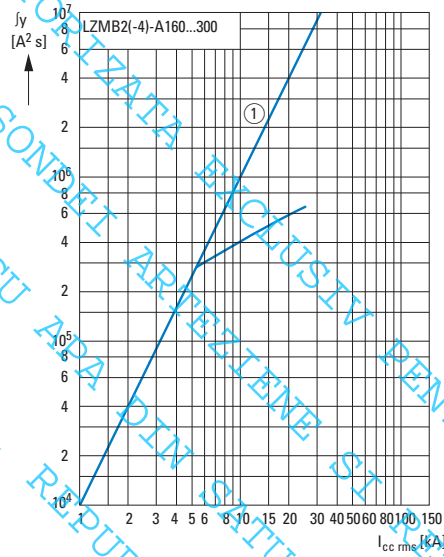
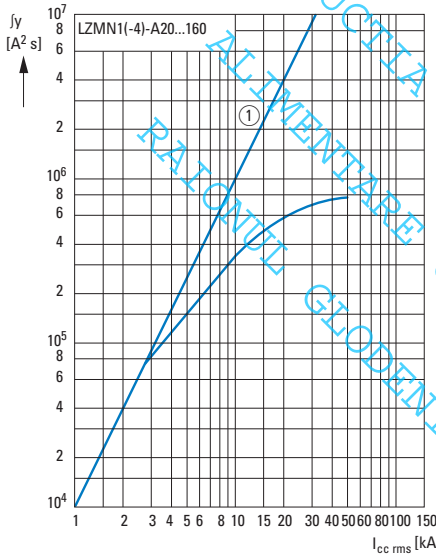
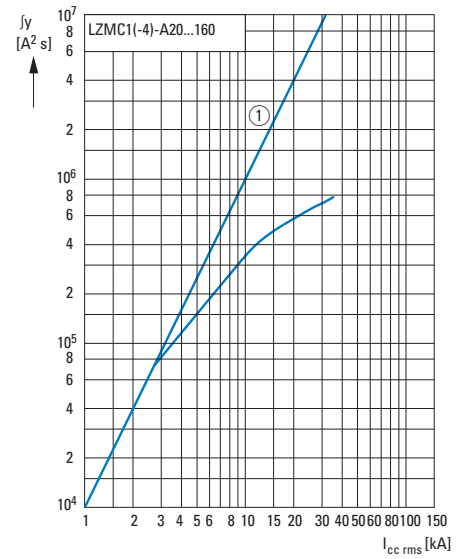
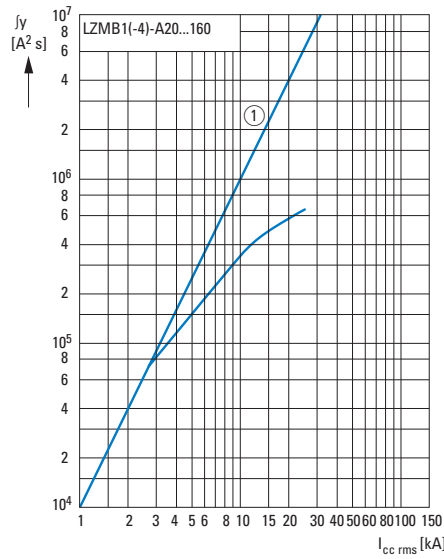
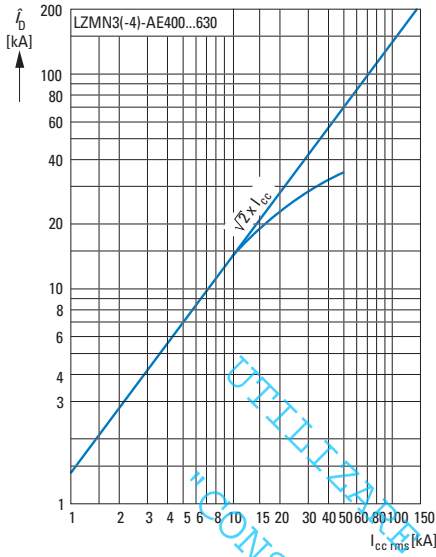
Let-through current \hat{i}_D



UTILIZAREA AUTORIZATA EXCLUSIV PENTRU PROIECTUL: "CONSTRUCȚIA ALIMENTAREI RAZBOITAREI CU APA DIN SAITUL CAJBA, REPUBLICA MOLDOVA"

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Let-through energy I^2t



				Rated uninterrupted current max. 160 A		
				LZMB1	LZMC1	LZMN1
General						
Standards				IEC/EN 60947		
Protection against direct contact				Finger and back of hand proof to VDE 0106 Part 100		
Climatic proofing				Damp heat, constant, according to IEC 60068-2-78 Damp heat, cyclical to IEC 60068-2-30		
Ambient temperature						
Storage				°C -25...+70		
Operation				°C -25...+70		
Mechanical shock resistance (IEC/EN 60068-2-27)				20 (half-sinusoidal shock 20 ms)		
Safe isolation to VDE 0106 Part 101 and Part 101/A1						
Between auxiliary contacts and main contacts				V AC 500		
between the auxiliary contacts				V AC 300		
Mounting position				Vertical and 90° in all directions		
Direction of incoming supply				As required		
Degree of protection						
Device				In the operating controls area: IP20 (basic degree of protection)		
Enclosures				With insulating surround: IP40, with door coupling rotary handle: IP66		
Terminals				Tunnel terminal: IP10 Phase isolator and strip terminal: IP00		
Circuit-breakers						
Rated impulse withstand voltage U_{imp}						
Main contacts				6000		
Auxiliary contacts				6000		
Rated operational voltage U_e				V AC 440		
Overvoltage category/pollution degree				III/3		
Rated insulation voltage U_i				V 690		
Switching capacity						
Rated short-circuit making capacity						
240 V				I_{cm} kA 63		
400/415 V				I_{cm} kA 53		
440 V				I_{cm} kA 53		
Rated short-circuit breaking capacity I_{cn}						
I_{cu} to IEC/EN 60947 operating sequence O-t-CO				240 V 50/60 Hz I_{cu} kA 30		
				400/415 V 50/60 Hz I_{cu} kA 25		
				440 V 50/60 Hz I_{cu} kA 12,5		
I_{cs} to IEC/EN 60947 operating sequence O-t-CO-t-CO				240 V 50/60 Hz I_{cs} kA 30		
				400/415 V 50/60 Hz I_{cs} kA 25		
				440 V 50/60 Hz I_{cs} kA 9		
Maximum low-voltage h.b.c. fuse ¹⁾				A gG/gL LZM.1-...20...100: 200 LZM.1-...125, 160: 315		
Utilization category to IEC/EN 60947-2				A		
Rated short-time withstand current						
t = 0,3 s				I_{cw} kA -		
t = 1 s				I_{cw} kA -		
Rated making and breaking capacity						
Rated operational current				AC-1 400/415 V 50/60 Hz I_e A 160		
Lifespan, mechanical				Operations 10000		
Maximum operating frequency				Ops/h 120		
Lifespan, electrical						
				AC-1 400/415 V 50/60 Hz Operations 5000		
Current heat loss at I_U ²⁾				W 36.1		
Total opening delay at short-circuit				ms < 10		

Notes

¹⁾ Maximum back-up fuse, if the expected short-circuit currents at the installation location exceed the switching capacity of the circuit-breaker

²⁾ For current heat loss the specification refers to the maximum nominal current of the frame size

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LZM...1, LZM...2, LZM...3, LZM...4

Rated uninterrupted current max. 300 A			Rated uninterrupted current max. 630 A		Rated uninterrupted current max. 1000 A
LZMB2	LZMC2	LZMN2	LZMC3	LZMN3	LZMN4
IEC/EN 60947,					
Finger and back of hand proof to VDE 0106 Part 100					
Damp heat, constant, according to IEC 60068-2-78					
Damp heat, cyclical to IEC 60068-2-30					
-25...+70					
-25...+70					
20 (half-sinusoidal shock 20 ms)					
500					
300					
Vertical and 90° in all directions					
As required					
In the operating controls area: IP20 (basic degree of protection)					
With insulating surround: IP40, with door coupling rotary handle: IP66					
Tunnel terminal: IP10					
Phase isolator and strip terminal: IP00					
8000	8000	8000	8000	8000	8000
6000	6000	6000	6000	6000	6000
440	440	440	440	440	440
III/3	III/3	III/3	III/3	III/3	III/3
690	690	690	690	1000	1000
63	121	187	121	187	105
53	76	105	76	105	105
53	63	74	63	74	74
30	55	85	55	85	50
25	36	50	36	50	50
12.5	18	25	18	25	25
30	55	85	55	85	37
25	36	50	36	50	37
9	13	18	13	18	18
355	355	355	LZMN3-...250, 400; 400 LZMN3-...500, 630; 630		
A	A	A	A	A	B
-	-	1.9	3.3	3.3	19.2
-	-	1.9	3.3	3.3	19.2
300	300	300	630	630	1000
10000	10000	10000	7500	7500	5000
120	120	120	60	60	60
5000	5000	7500	2500	2500	1500
58.3	58.3	58.3	119	119	111
< 10	< 10	< 10	< 10	< 10	< 25

			LN1(-4) max. 160 A	LN2(-4) max. 250 A	LN3(-4) max. 630 A	LN4(-4) max. 1000 A
Switch-disconnectors						
Rated impulse withstand voltage						
Main contacts	U_{imp}	V	6000	8000	8000	8000
Auxiliary contacts	U_{imp}	V	6000	6000	6000	6000
Rated operational voltage						
	U_e	V AC	690	690	690	690
Rated uninterrupted current max.						
IEC/EN 60947-2 annex L	I_u	A	160	250	630	1000
Overvoltage category/pollution degree						
			III/3	III/3	III/3	III/3
Rated Insulation voltage						
	U_i	V AC	690	690	1000	1000
For use in IT electrical power networks						
		V	690	690	690	525
Switching capacity						
Rated short-circuit making capacity						
	I_{cm}	kA	2.8	5.5	25	53
Rated short-time withstand current						
t = 0.3 s	I_{cw}	kA	2	3.5	12	25
t = 1 s	I_{cw}	kA	2	3.5	12	25
Rated conditional short-circuit current						
With back-up fuse						
	A gG/gL		PN1(N1)63...125: 125 PN1(N1)-160: 160	PN2(N2)-160...250: 250	PN3(N3)-400...630: 630	N4-630...1000: 2 x 500
400 ... 415 V	kA		100	100	100	100
With downstream fuse						
	A gG/gL		LN1-63...125: 125 LN1-160: 160	LN2-160...250: 250	LN3-400...630: 630	LN4-630...1000: 2 x 500
400 ... 415 V	kA		100	100	100	100
Rated making and breaking capacity						
Rated operational current, AC-23B						
415 V	I_e	A	160	250	630	1000
Lifespan, mechanical						
	Operations		10000	10000	7500	5000
Maximum operating frequency						
	Ops./h		120	120	60	60
Lifespan, electrical to IEC/EN 60947-4-1 section B						
AC-1						
	400/415 V	Operations	5000	5000	2500	1500
AC-23B						
	400/415 V	Operations	200	200	200	100
Current heat loss at I_u ¹⁾						
	W		29.2	48	107	111

Notes

¹⁾ The current heat loss ratings refer to the maximum current rating of the frame size.

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Device Type	Release Type	Response values of the overload release at temperatures deviating from the reference temperatures						
		Temperature compensation coefficient						
		20 °C	30 °C	40 °C	50 °C	60 °C	65 °C	70 °C
Thermomagnetic release (TM)								
System protection		Protection of systems (reference temperature 40 °C)						
LZM...1(-4)-A15...80	TM	1.14	1.07	1	0.93	0.86	0.83	0.79
LZM...1(-4)-A90...125	TM	1.14	1.07	1	0.93	0.86	0.83	0.79
LZM...1(-4)-A160	TM	1.08	1.04	1	0.96	0.92	0.90	0.88
LZM...2(-4)-A15...200	TM	1.04	1.02	1	0.98	0.96	0.95	0.94
LZM...2(-4)-A250	TM	1.04	1.02	1	0.98	0.96	0.95	0.94
LZM...3(-4)-A250...500	TM	1.12	1.06	1	0.94	0.88	0.85	0.82

Notes With temperatures which deviate from the reference temperature, a slight change of the overload protection properties occurs. In order to determine the release time using the tripping characteristics the temperature compensation coefficient in accordance with the table must be considered.
 Example: An LZM1-A100 is calibrated for a reference temperature of 40 °C.
 What happens when it is operated at an ambient temperature of 60 °C?
 At 60 °C, the temperature compensation coefficient of 0.86 results in a reduced operating current of $I_r = 100 \text{ A} \times 0.86 = 86 \text{ A}$.
 In other words at an ambient temperature of 60 °C the LZM1-A100 trips as if it were set to 86 A.

Device Type	Release Type	Reduction of the rated operational current (derating) under particular ambient conditions (according to IEC 947)						
		Derating coefficient						
		20 °C	30 °C	40 °C	50 °C	60 °C	65 °C	70 °C
Thermomagnetic release (TM)								
System protection		Protection of systems (reference temperature 40 °C)						
LZM...1(-4)-A15...80	TM	1	1	1	1	1	1	1
LZM...1(-4)-A90...125	TM	1	1	1	1	0.86	0.83	0.80
LZM...1(-4)-A160	TM	1	1	1	0.95	0.90	0.85	0.80
LZM...2(-4)-A15...200	TM	1	1	1	1	1	1	1
LZM...2(-4)-A250	TM	1	1	1	1	0.90	0.85	0.80
LZM...3(-4)-A250...500	TM	1	1	1	0.94	0.88	0.85	0.82
Electronic release (E)								
System protection								
LZM...3(-4)-AE630	E	1	1	1	1	0.90	0.85	0.80
LZM...4(-4)-AE800...1000	E	1	1	1	1	1	1	1

Notes The derating coefficient must be considered in accordance with the following table in order to determine the maximum permissible current loading at different ambient temperatures.
 Example: An LZM2-A250 should be operated at an ambient temperature of 65 °C.
 How high is the permissible rated operational current I_e ?
 At 65 °C the derating coefficient is 0.85, this means $I_e = 250 \text{ A} \times 0.85 = 212.5 \text{ A}$.
 The LZM2-A250 may be operated at an ambient temperature of 65 °C with a maximum $I_e = 212.5 \text{ A}$.

Weight	kg
Circuit-breaker	
LZM...1-...	1.046
LZM...1-4-...	1.325
LZM...2-...	2.345
LZM...2-4-...	3.5
LZM...3-...	6.34
LZM...3-4-...	8.4
LZM...4-...	21
LZM...4-4-...	27

LZM up to 500 A with thermomagnetic release (3- and 4-pole)

I_n [A]	LZM1- A...		LZM2- A...		LZM3- A	
	P [W]	R [μOhm]	R [W]	P [μOhm]	R [W]	P [μOhm]
20	9.8	8180	5.1	4250	–	–
25	8.8	4680	8	4250	–	–
26	–	–	–	–	–	–
30	–	–	–	–	–	–
32	9.3	3030	9.6	3140	–	–
33	–	–	–	–	–	–
35	–	–	–	–	–	–
40	10.7	2220	14	2800	–	–
45	–	–	–	–	–	–
50	13.2	1760	17	2270	–	–
60	–	–	–	–	–	–
63	14.2	1190	20.2	1700	–	–
70	–	–	–	–	–	–
80	16.3	850	20.5	1070	–	–
90	–	–	–	–	–	–
100	21.9	730	25.7	855	–	–
110	–	–	–	–	–	–
125	26.7	570	27.8	589	–	–
150	–	–	–	–	–	–
160	36.1	460	38.4	427	–	–
175	–	–	–	–	–	–
200	–	–	48	332	–	–
225	–	–	–	–	–	–
250	–	–	58.1	310	68	384
300	–	–	83.7	310	79	256
400	–	–	–	–	72	151
500	–	–	–	–	93	124

Notes

The values stated in the table apply for 3- and 4-pole fixed mounted devices with an equal load distribution.

On 4-pole devices the current in the N-conductor is equal to zero.

The total resistive load is the measured value for a 3-pole or a 4-pole switch.

The total heat dissipation is the value measured at I_n , 50/60Hz for a 3-pole or 4-pole switch.

The heat dissipation can be calculated with the formula: $P = 3 \times R \times I^2$

LZM up to 1000 A with electronic release (3- and 4-pole)

LZM3		LZM4	
R [μ Ohm]		R [μ Ohm]	
100		37	

Notes

The values stated in the table apply for 3- and 4-pole devices with an equal load distribution.

On 4-pole devices the current in the N-conductor is equal to zero.

The total resistive load is the measured value for a 3-pole or a 4-pole switch (independent of I_n and the type of release).

The heat dissipation can be calculated with the formula: $P = 3 \times R \times I^2$

				LZM1 160 A	$I_n^{(1)}$ A	LZM2 300 A	$I_n^{(1)}$
Terminal capacities							
Standard equipment				Box terminal		Screw terminal	
Accessories				Screw connection Tunnel terminal Connection on rear		Box terminal Tunnel terminal Connection on rear	
Rated power of coil							
Box terminal	Solid		mm ²	1 x (10 – 16) 2 x (6 – 16)	160	1 x (4 – 16) 2 x (4 – 16)	300
			mm ²	1 x (25 – 70) 2 x 25	160	1 x (25 – 185) 2 x (25 – 70)	300
Tunnel terminal	Solid		mm ²	1 x 16	160	1 x 16	300
		Single hole	mm ²	1 x (25 – 95)	160	1 x (25 – 185)	300
	Double hole fitting		mm ²	–	–	–	–
		4-hole	mm ²	–	–	–	–
Bolt terminal and rear-side connection							
Direct on the switch	Solid		mm ²	1 x (10 – 16) 2 x (6 – 16)	160	1 x (4 – 16) 2 x (4 – 16)	300
			mm ²	1 x (25 – 70) ³⁾ 2 x 25	160	1 x (25 – 185) 2 x (25 – 70)	300
Module plate	Single hole	min.	mm ²	–	–	–	–
		max.	mm ²	–	–	–	–
Module plate	Double hole	min.	mm ²	–	–	–	–
		max.	mm ²	–	–	–	–
Connection width extension			mm ²	–	–	–	–
Al conductors, Al cable							
Tunnel terminal	Solid		mm ²	1 x 16	160	1 x 16	250
			mm ²	1 x (25 – 95)	160	1 x (25 – 185) ²⁾	250
	Stranded	Single hole	mm ²	–	–	–	–
		Double hole fitting	mm ²	–	–	–	–
	4-hole	mm ²	–	–	–	–	
Bolt terminal and rear-side connection							
Direct on the switch	Solid		mm ²	1 x (10 – 16) 2 x (10 – 16)	160	1 x (10 – 16) 2 x (10 – 16)	250
			mm ²	1 x (25 – 35) 2 x (25 – 35)	160	1 x (25 – 50) 2 x (25 – 50)	250
Module plate	Single hole	min.	mm ²	–	–	–	–
		max.	mm ²	–	–	–	–
Module plate			Double hole	mm ²	–	–	–
Connection width extension				–	–	–	–
Cu strip (number of segments x width x segment thickness)							
Box terminal		min.	mm	2 x 9 x 0.8	160	2 x 9 x 0.8	300
		max.	mm	9 x 9 x 0.8	160	10 x 16 x 0.8	300
Flat conductor terminal		min.	mm	–	–	–	–
		max.	mm	–	–	–	–
Module plate		Single hole	mm	–	–	–	–
Bolt terminal and rear-side connection							
Flat copper strip, with holes		min.	mm	–	–	2 x 16 x 0.8	300
		max.	mm	–	–	10 x 16 x 0.8	300
Connection width extension			mm ²	–	–	–	–
Copper busbar (width x thickness)							
Bolt terminal and rear-side connection							
Screw connection				M6		M8	
Direct on the switch		min.	mm	12 x 5	160	16 x 5	300
		max.	mm	16 x 5	160	20 x 5	300
Module plate	Single hole	min.	mm	–	–	–	–
		max.	mm	–	–	–	–
Module plate		Double hole	mm	–	–	–	–
Connection width extension			min.	mm	–	–	–
			max.	mm	–	–	–

Notes

¹⁾ The rated currents I_n have been determined conform to IEC/EN 60947 (switchgear standard) and generally relate to the max. defined cross-sections and are intended for the purpose of orientation. The engineering standards which apply in each case must be observed.

²⁾ depending on the cable manufacturer up to 240 mm² can be connected.

³⁾ depending on the cable manufacturer up to 95 mm² can be connected.

				LZM3 630 A	$I_n^{(1)}$ A	LZM4 1000 A	$I_n^{(1)}$
Terminal capacities							
Standard equipment				Screw terminal		Screw terminal	
Accessories				Box terminal Tunnel terminal Connection on rear		Tunnel terminal Connection on rear Strip terminal	
Rated power of coil							
Box terminal	Solid		mm ²	2 x 16	500	–	–
			mm ²	1 x (1 x (35 – 240) 2 x (25 – 120)	500	–	–
Tunnel terminal	Solid		mm ²				
			mm ²	1 x (25 – 185)	350	–	–
	Stranded	Single hole	mm ²	1 x (50 – 240)	630	–	–
			mm ²	2 x (50 – 240)	2 x 185	–	–
		4-hole	mm ²	–	–	4 x (50 – 240)	1000
Bolt terminal and rear-side connection							
Direct on the switch	Solid		mm ²	1 x 16 2 x 16	630 2 x 185		
			mm ²	1 x (25 – 240) 2 x (25 – 240)	630 2 x 185	1 x (120 ... 185) 4 x (50 ... 185)	1000
Module plate	Single hole	min.	mm ²	–	–	1 x (120 – 300)	1000
		max.	mm ²	–	–	2 x (95 – 300)	1000
Module plate	Double hole	min.	mm ²	–	–	2 x (95 – 185)	1000
		max.	mm ²	–	–	4 x (35 – 185)	1000
Connection width extension			mm ²	2 x 300	630 2 x 185	4 x 300 6 x (95 – 240)	1000 4 x 240
Al conductors, Al cable							
Tunnel terminal	Solid		mm ²	1 x 16	350	–	–
			mm ²	1 x (25 – 185) ²⁾ 2 x (50 – 240)	350 630	–	–
	Stranded	Single hole	mm ²	1 x (50 – 240)	630	–	–
			mm ²	2 x (50 – 240)	–	4 x (50 – 240)	1000
Bolt terminal and rear-side connection							
Direct on the switch	Solid		mm ²	1 x 16 2 x (10 – 16)	400	–	–
			mm ²	1 x (25 – 120) 2 x (25 – 120)	400	–	–
Module plate	Single hole	min.	mm ²	–	–	1 x (185 – 240)	pleaes inquire
		max.	mm ²	–	–	2 x (70 – 185)	pleaes inquire
Module plate	Double hole		mm ²	–	–	4 x 50	–
		Connection width extension				2 x 240 6 x (70 – 240)	
Cu strip (number of segments x width x segment thickness)							
Box terminal		min.	mm	6 x 16 x 0.8	630	–	–
		max.	mm	10 x 24 x 1.0 + 5 x 24 x 1.0 (2 x) 8 x 24 x 1.0	630	–	–
Flat conductor terminal		min.	mm	–	–	6 x 16 x 0.8	1000
		max.	mm	–	–	(2 x) 10 x 32 x 1.0	1000
Module plate	Single hole		mm	–	–	(2 x) 10 x 50 x 1.0	1000
							(2 x) 10 x 40 x 1.0
Bolt terminal and rear-side connection							
Flat copper strip, with holes		min.	mm	6 x 16 x 0.8	630	(2 x) 10 x 50 x 1.0	1000
		max.	mm	10 x 32 x 1.0 + 5 x 32 x 1.0	630	(2 x) 10 x 50 x 1.0	1000
Connection width extension			mm ²	(2 x) 10 x 50 x 1.0	630	(2 x) 10 x 80 x 1.0	1000 2 x (10 x 50 x 1.0)
Copper busbar (width x thickness)							
Bolt terminal and rear-side connection							
Screw connection				M10		M10	
Direct on the switch		min.	mm	20 x 5	630	25 x 5	1000
		max.	mm	30 x 10 +30 x 5	630	2 x (50 x 10) 2 x (80 x 10)	1000
Module plate	Single hole	min.	mm	–	–	25 x 5	1000
		max.	mm	–	–	2 x (50 x 10)	2 x (40 x 10)
Module plate	Double hole		mm	–	–	2 x (50 x 10)	1000
		Connection width extension			mm	–	630
		max.	mm	2 x (10 x 50)	10 x 40	2 x (80 x 10)	2 x (50 x 10)

Notes

¹⁾ The rated currents I_n have been determined conform to IEC/EN 60947 (switchgear standard) and generally relate to the max. defined cross-sections and are intended for the purpose of orientation. The engineering standards which apply in each case must be observed.

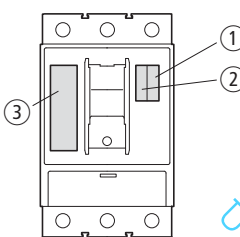
²⁾ depending on the cable manufacturer up to 240 mm² can be connected.

³⁾ depending on the cable manufacturer up to 95 mm² can be connected.

at AC = 50/60 Hz			M22-K...	NZM-CK...
Auxiliary contacts				
Rated operational voltage				
AC	Ue	V AC	500	230
DC	Ue	V DC	220	220
Conventional thermal current				
	I _{th} = I _e	A	4	4
Rated operational current				
AC-15	115 V	I _e	A	4
	230 V	I _e	A	4
	400 V	I _e	A	–
	500 V	I _e	A	–
DC-13	24 V	I _e	A	3
	42 V	I _e	A	1
	60 V	I _e	A	0.8
	110 V	I _e	A	0.5
	220 V	I _e	A	0.2
Short-circuit protection				
max. fuse		A gG/gL	10	10
Max. miniature circuit-breaker		A	PKZM0-10/FAZ-B6	FAZ-B6/B1
Terminal capacities				
Solid or flexible conductor with ferrule		mm ²	1 x (0.75 – 2.5) 2 x (0.75 – 2.5)	1 x (0.5 – 1.5) 2 x (0.5 – 0.75)
		AWG	1 x (18 – 14) 2 x (18 – 14)	1 x (18 – 14) 2 x (18 – 14)

UTILIZARE EXCLUSIV PENTRU PROIECTUL:
 "CONSTRUCTIA AUTORIZATA SONDEI ARTEZIENE SI RETELELOR DE
 ALIMENTARE CU APA DIN SATUL CAJBA,
 RAIONUL GLODENI, REPUBLICA MOLDOVA"

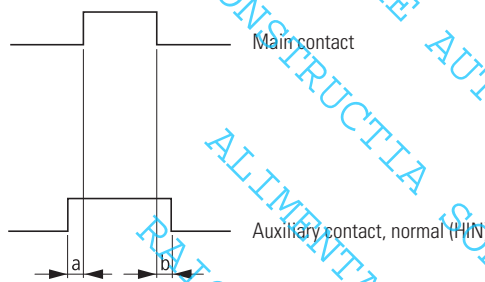
Maximum equipment and position of the internal accessories

		③	②	①	Contacts per slot with HIA and HIN
		-XHIV(2S) or -XA or -XU	HIA	HIN ¹⁾	
	LZM1, LN1	1	1	1	1 N/O
	LZM2, LN2	1	1	2	1 N/C
	LZM3, LN3	1	1	3	2 N/O
	LZM4, LN4	1	2	3	2 N/C

N/O = normally open contact
N/C = normally closed contact

¹⁾ On combination with remote operator NZM-XR..., the right slot for standard auxiliary contacts HIN can be equipped only with single contacts.

Time differences ON-OFF



	Time difference a (ms)		Motor operators		Time difference b (ms)		Motor operators	
	Manual operation HIN	K10	K10	K01	Manual operation HIN	K10	K01	K10
LZM1	0	2.5	—	—	0	2.5	—	—
LZM2	3.5	6.5	2.5	4.5	3	4.5	3	4
LZM3	4	8	2	4	3.5	8	3	6.5
LZM4	7	11	on request	on request	12	15	on request	on request

xEnergy

NZM...-XU, NZM...-XA...

			NZM1(2/3)-XU...	NZM4-XU...		
Undervoltage release						
Rated control voltage						
Alternating voltage at 50/60 Hz	U_s	V AC	24...440	24...440		
DC	U_s	V DC	24	24		
Operating range						
Drop-out voltage		$x U_s$	0.35 – 0.7	0.35 – 0.7		
Pick-up voltage		$x U_s$	0.85 – 1.1	0.85 – 1.1		
Power consumption						
AC						
Pick-up AC		VA	1.5	3.6		
Sealing AC		VA	1.5	3.6		
DC						
Pick-up DC		W	0.8	2.5		
Sealing DC		W	0.8	2.5		
Max. opening delay (response time until the main circuits open)		ms	19	23		
Minimum command time		ms	10 – 15	10 ... 15		
Terminal capacities						
Solid or flexible conductor with ferrule		mm ²	1 x (0.75 ... 2.5) 2 x (0.75 ... 2.5)	2 x (0.75 ... 2.5) 2 x (0.75 ... 2.5)		
		AWG	1 x (18 ... 14) 2 x (18 ... 14)	1 x (18 ... 14) 2 x (18 ... 14)		
Shunt release						
Rated control voltage						
AC	U_s	V AC	24...440	24...440		
DC	U_s	V DC	24	24		
Frequency range						
		Hz	0 – 400	0 – 400		
Operating range						
AC		$x U_s$	0.7...1.1	0.7...1.1		
DC		$x U_s$	0.7...1.1	0.7...1.1		
Power consumption						
Pick-up AC/DC		VA/W	2.5	2.5		
Sealing AC/DC		VA/W	2.5	2.5		
Max. opening delay (response time until the main circuits open)		ms	20	22		
Duty factor		ms	∞	∞		
Minimum command time		ms	10 ... 15	10 ... 15		
Terminal capacities						
Solid or flexible conductor with ferrule		mm ²	21 x (0.75 ... 2.5) 2 x (0.75 ... 2.5)	1 x (0.75 ... 2.5) 2 x (0.75 ... 2.5)		
		AWG	1 x (18 ... 14) 2 x (18 ... 14)	1 x (18 ... 14) 2 x (18 ... 14)		

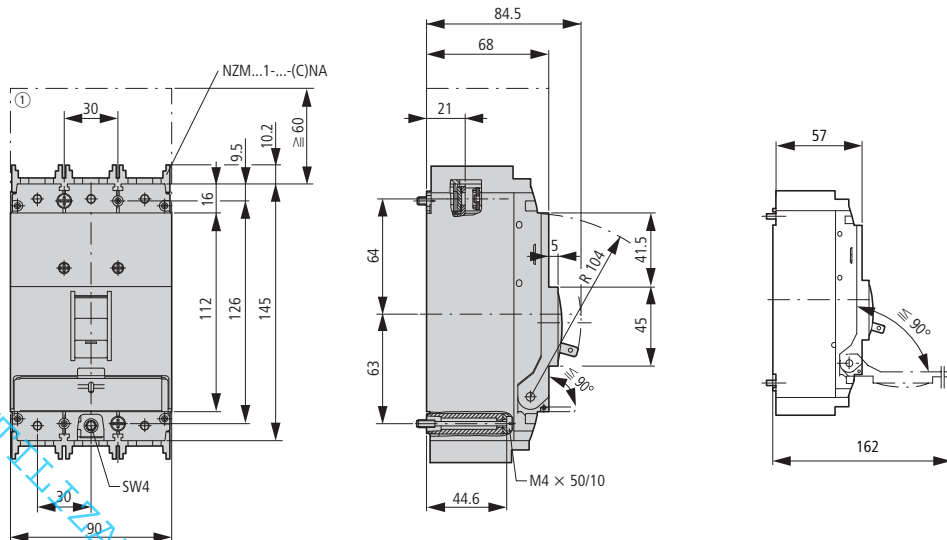
			NZM2-XR...	NZM3-XR...	NZM4-XR...
Remote operator					
Rated control voltage					
AC	U_s	V AC	208...440	208...440	208...440
DC	U_s	V DC	24	24	24
Operating range					
AC	U_s		0.85...1.1	0.85...1.1	0.85...1.1
DC	U_s		0.85...1.1	0.85...1.1	0.85...1.1
Motor rating					
AC	208 ... 240 V AC	VA	350	350	350
	380 ... 440 V AC	VA	350	350	350
DC	24 ... 30 V DC	W	250	250	250
Rated power of coil					
AC	208 ... 240 V AC	VA	270	270	270
	380 ... 440 V AC	VA	270	270	270
DC	24 ... 30 V DC	W	210	210	210
Total make time			ms	60	80
Total opening delay			ms	300	1000
Minimum signal duration					
	with switch on	ms	30	30	30
	with switch off	ms	150	250	500
Lifespan, mechanical			Operations	20000	15000
Maximum operating frequency			Ops./h	120	60
Terminal capacities					
	Solid or flexible conductor with ferrule	mm	0.75 ... 2.5	0.75 ... 2.5	0.75 ... 2.5
		AWG	18 ... 14	18 ... 14	18 ... 14

xEnergy

Circuit-breaker

3 pole

- LZMB1
- LZMC1
- LZMN1
- LN1

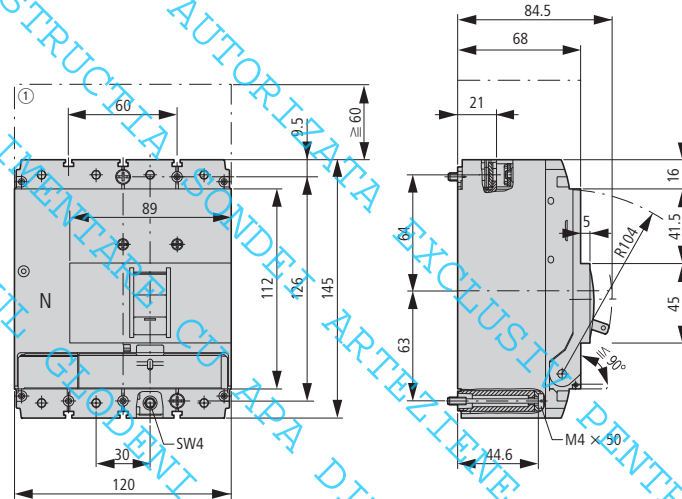


① Blow out area, minimum clearance to other parts > 60 mm

Circuit-breaker

4 pole

- LZMB1-4
- LZMC1-4
- LZMN1-4
- LN1-4



① Blow out area, minimum clearance to other parts > 60 mm

Covers

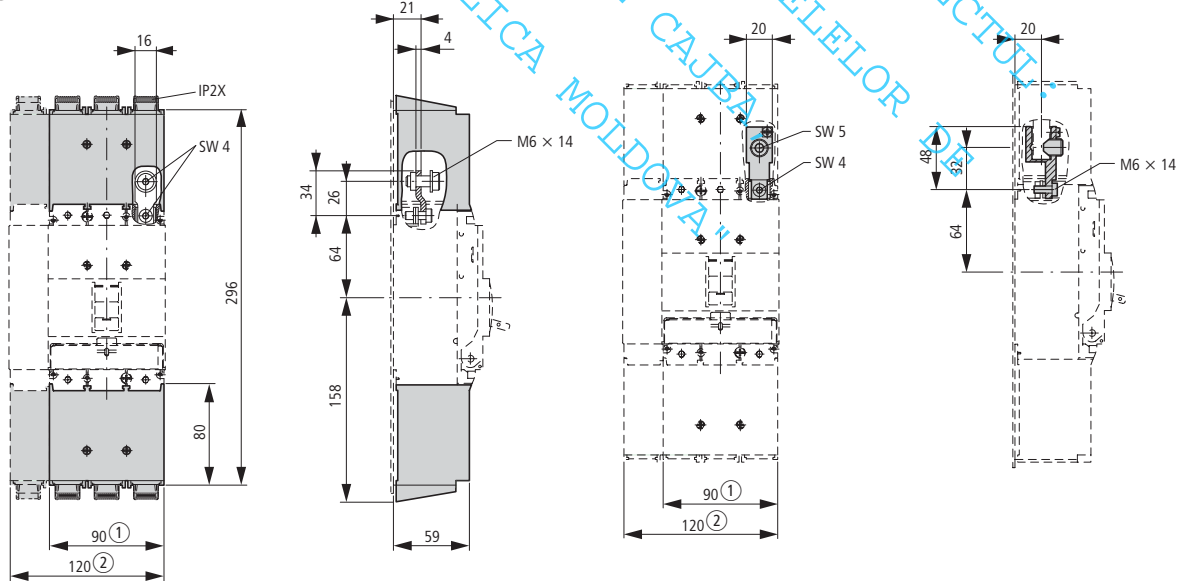
NZM1(-4)-XKSA

Screws connection

NZM1(-4)-XKS

Tunnel terminal

NZM1(-4)-XKA



① 3 pole
② 4 pole

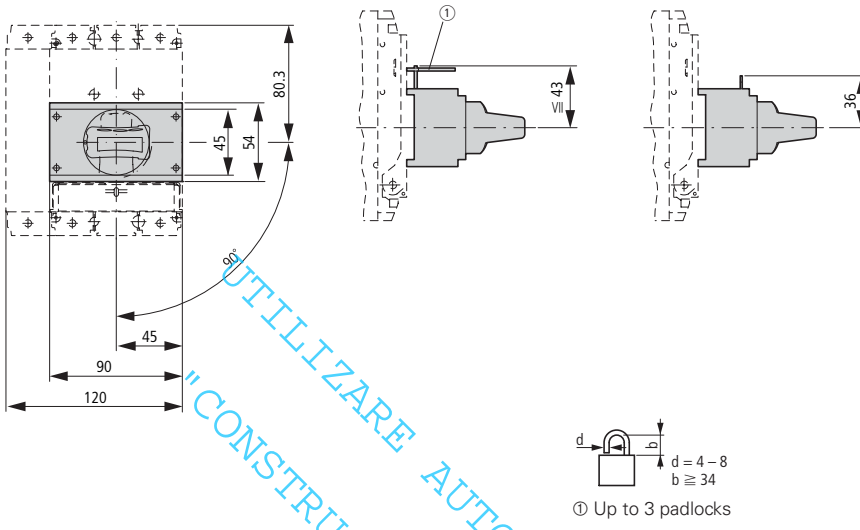
① 3 pole
② 4 pole

Rotary drive

Rotary handle on circuit-breaker

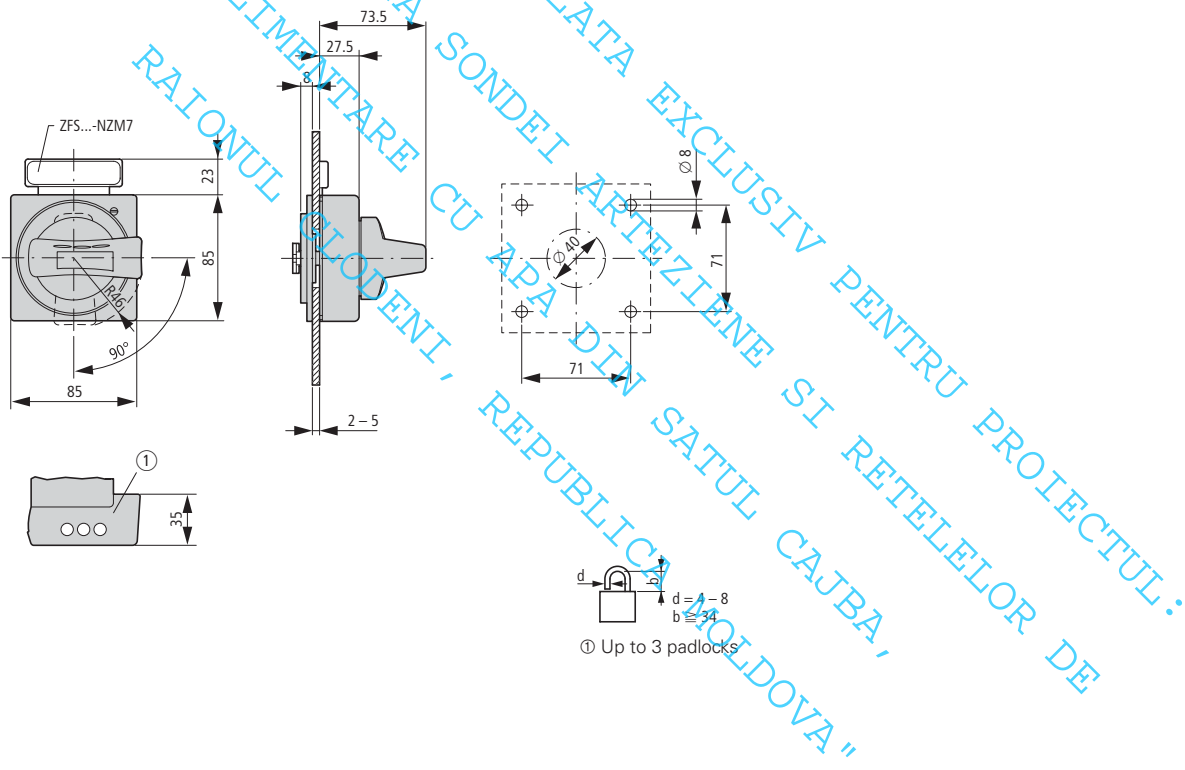
NZM1-XDV
NZM1-XDVR

NZM1-XDTV



Door coupling rotary handle

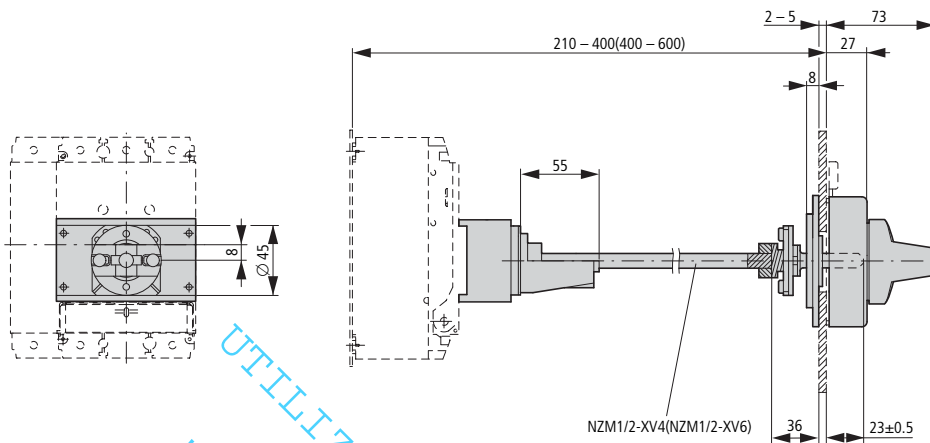
NZM1-XTVD(R)



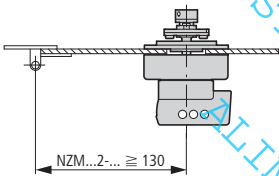
xEnergy

Door coupling rotary handle with extension shaft

NZM1-XTVD(V)(R)
NZM1/2-XV4(6)

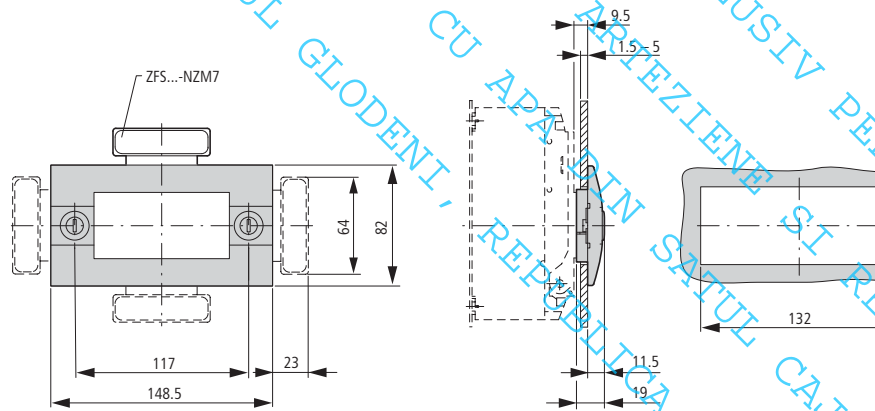


Minimum door coupling rotary handle clearance from door pivot point



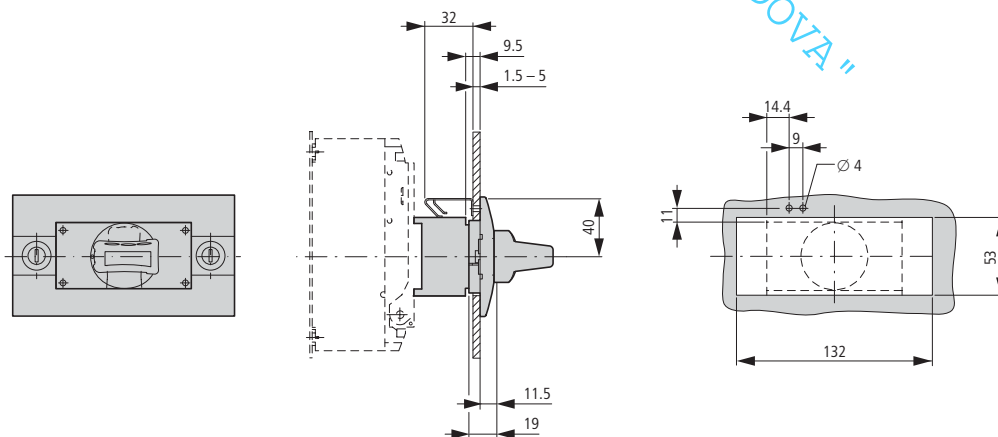
Insulating surrounds

NZM1-XBR

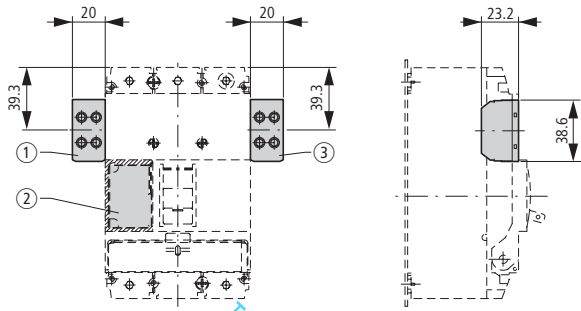


Rotary handle on switch with door interlock

NZM1-XDTV(R)

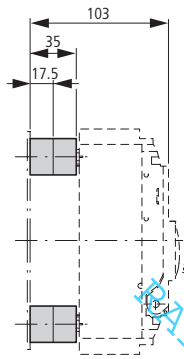


Undervoltage release
Shunt release
Early-make auxiliary contacts

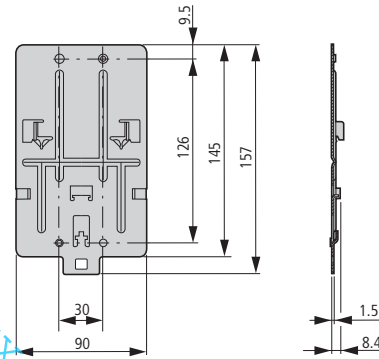


- ① NZM1-XA(HIV)
NZM1-XU(HIV)(20)
NZM1-XHIV
- ② NZM1-XA(HIV)(L)
NZM1-XU(V)(HIV)(L)(20)
NZM1-XHIV(L)
- ③ NZM1-XHIVR

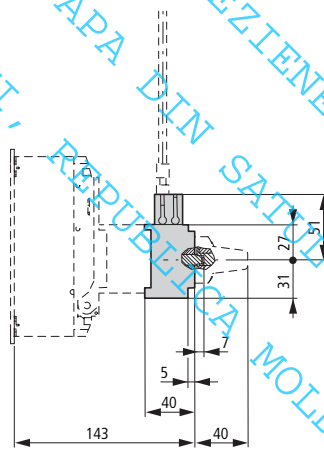
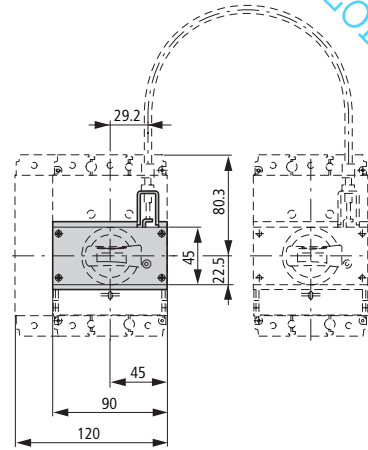
Spacers
NZM1/2-XAB



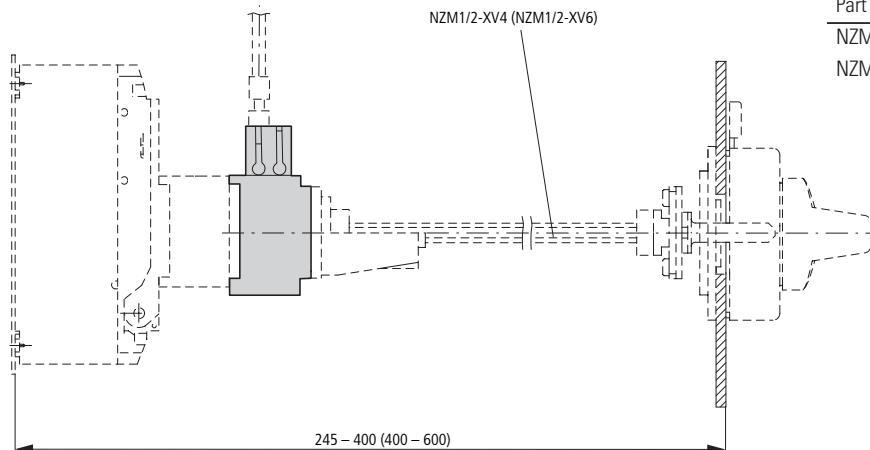
Clip plate
NZM1-XC35



Mechanical interlock
NZM1-XMV + NZM1-XDV(R)



NZM1-XMV + NZM1-XTVD(V)(R)



Part no.	x
NZM1/2-XV4	245 - 400
NZM1/2-XV6	400 - 600

Dimensions

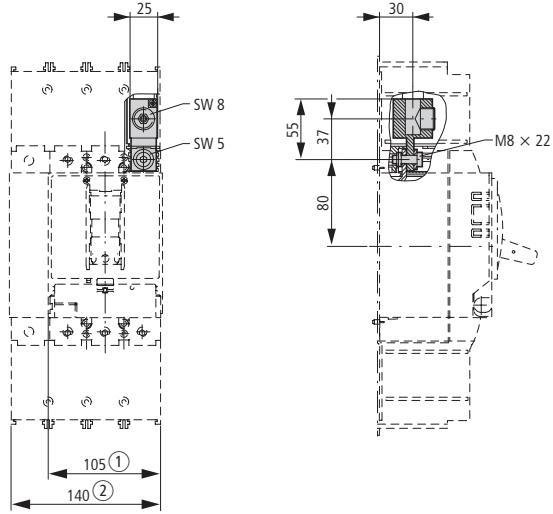
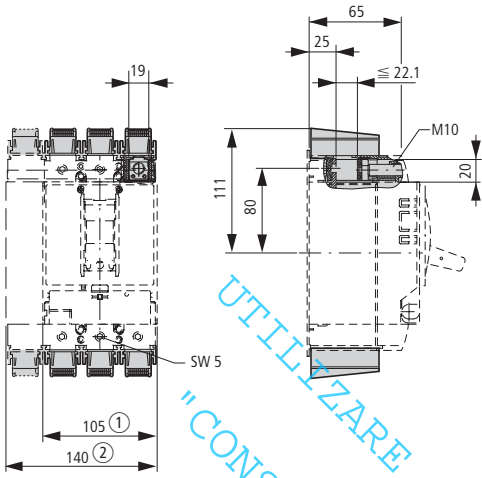
NZM2...-XK..., Rotary drive

Box terminal

(+)NZM2(-4)-...-XKC(O)(U)

Tunnel terminal

NZM2(-4)-XKA



- ① 3 pole
- ② 4 pole

Covers

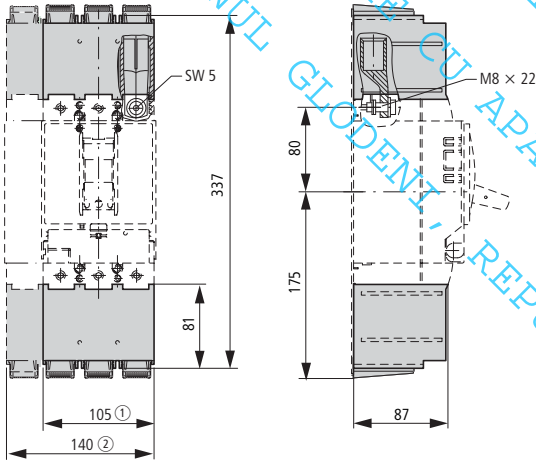
NZM2(-4)-XKSA

Cable lug

NZM2-XKS185

IP2X protection against contact with a finger for shroud

NZM2(-4)-XIPA

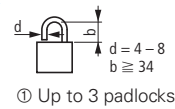
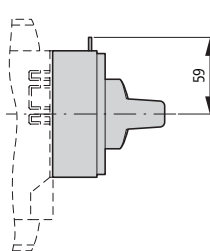
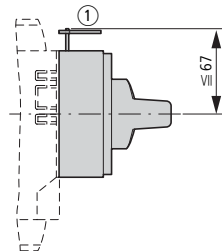
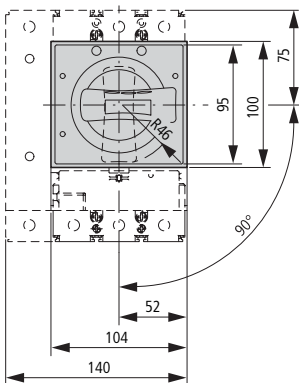


Rotary drive

Rotary handle on circuit-breaker

NZM2-XDV

NZM2-XDTV



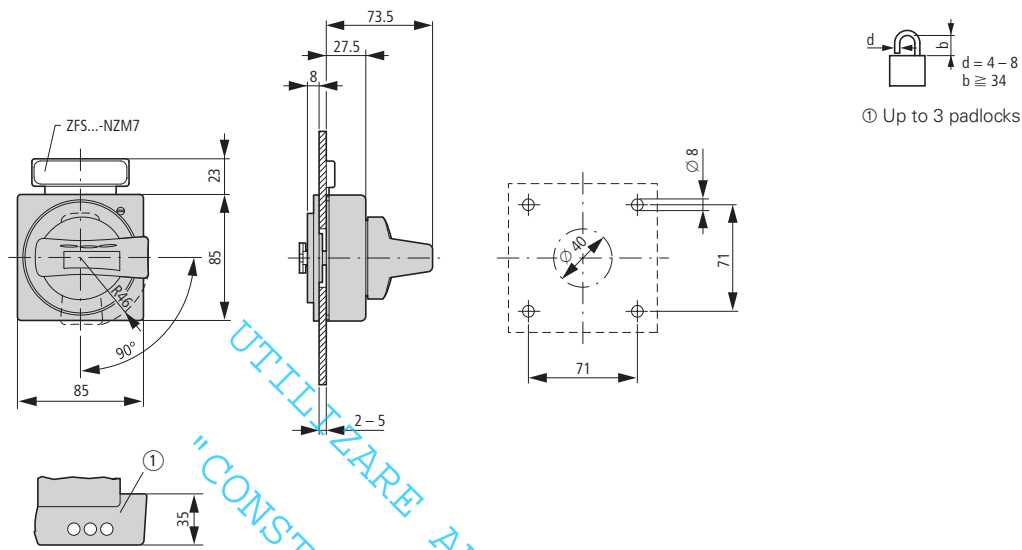
① Up to 3 padlocks

xEnergy

NZM2-XTV..., NZM1/2-XV4(6)

Door coupling rotary handle

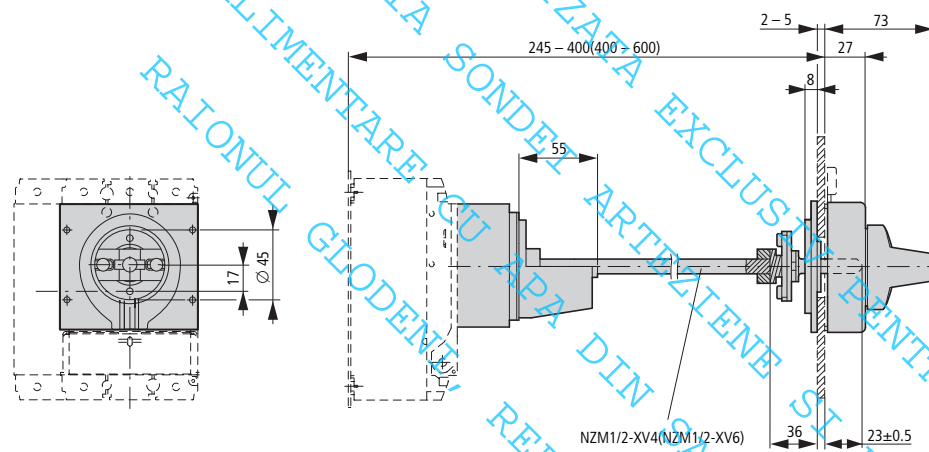
NZM2-XTVD(V)(R)...



Door coupling rotary handle with extension shaft

NZM2-XTVD(V)(R)

NZM1/2-XV4(6)



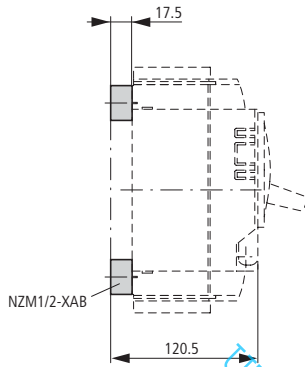
Dimensions

NZM...-XAB, NZM2-XBR, NZM2-XDTV...

xEnergy

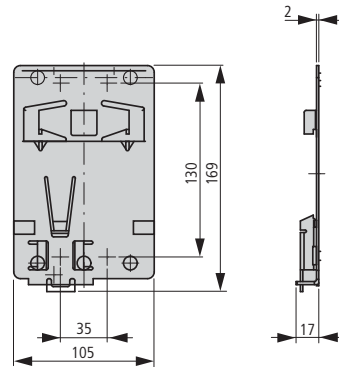
Spacers

NZM1/2-XAB



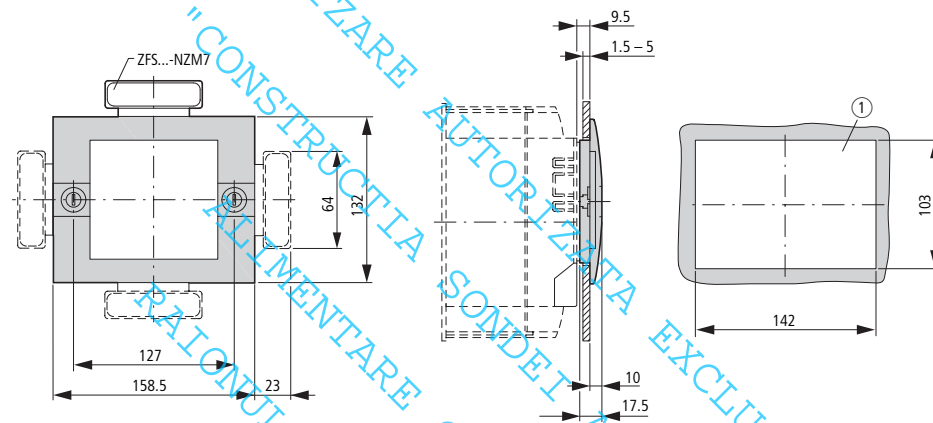
Clip plate

NZM2-XC75



Insulating surrounds

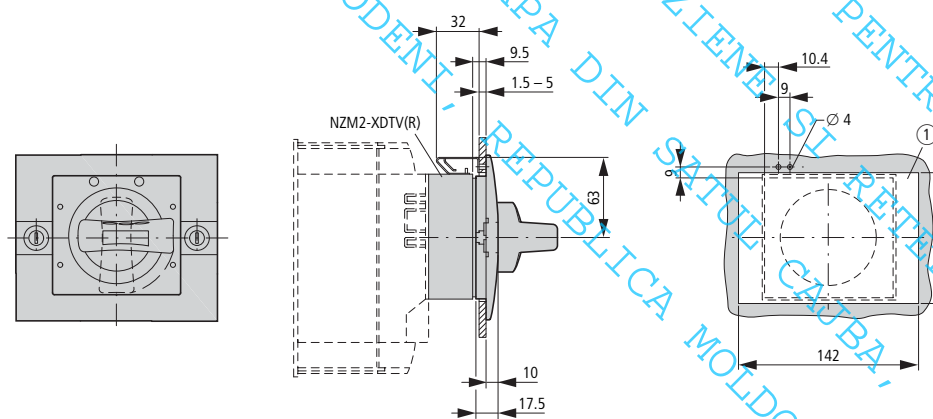
NZM2-XBR



① Mounting aperture

Rotary handle on switch with door interlock

NZM2-XDTV(R)



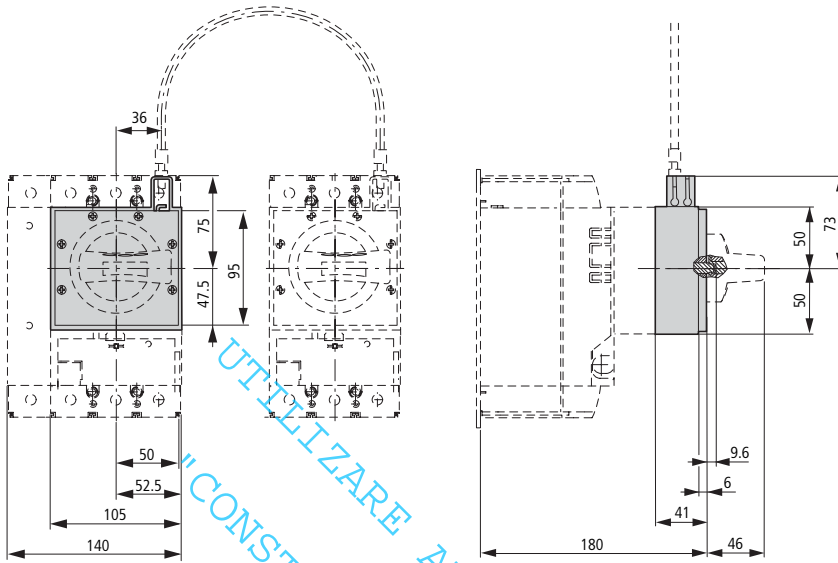
① Mounting aperture

NZM2-XMV, NZM2...-XKAV

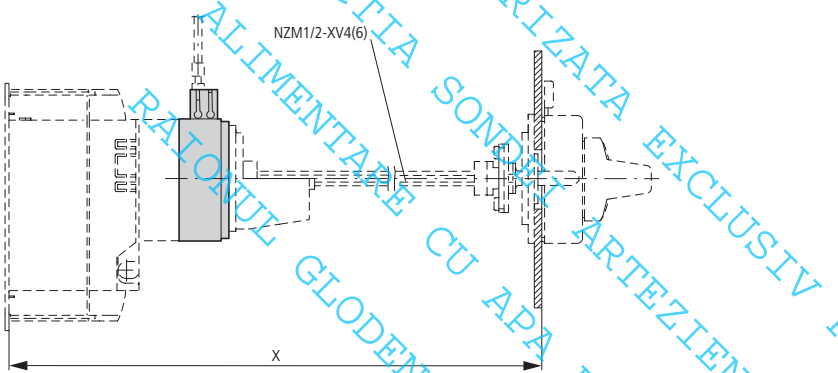
xEnergy

Mechanical interlock

NZM2-XMV + NZM2-XD

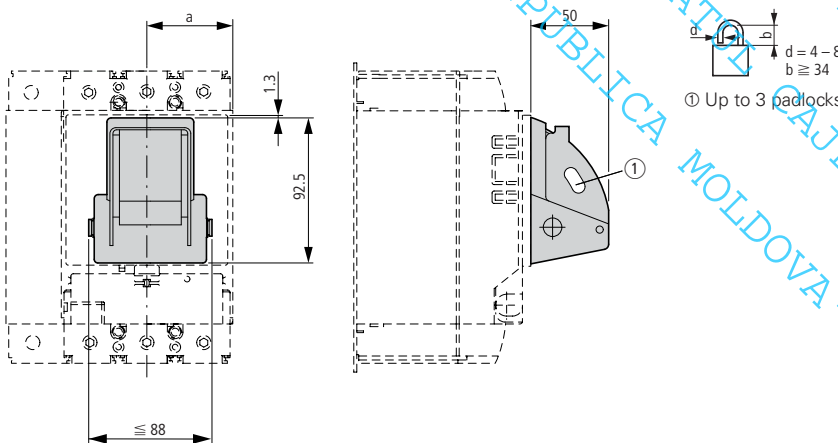


NZM2-XMV + NZM2-XTVD(V)(R)



Toggle lever locking device

NZM2/3-XKAV



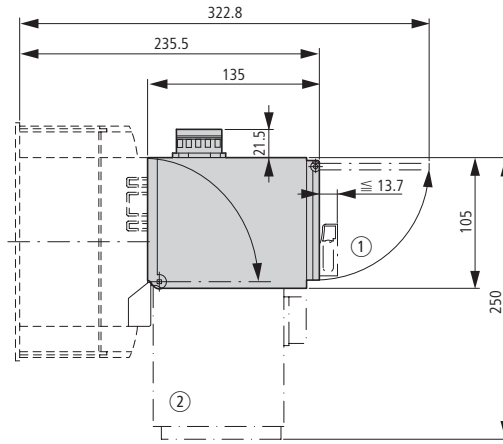
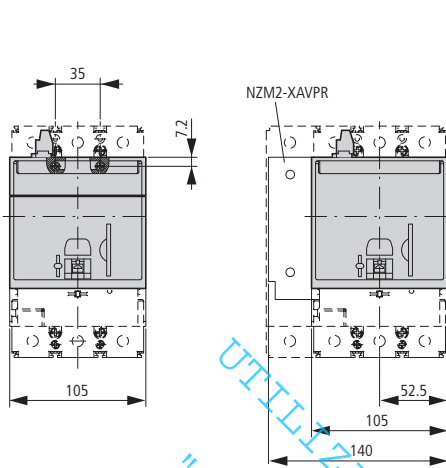
Part no.	a
LZM2	52.5
LZM3	70

Dimensions

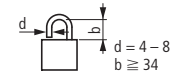
NZM2-XR..., -XAD...

Remote operator

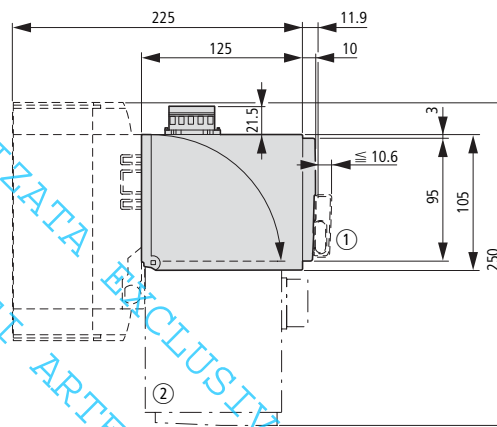
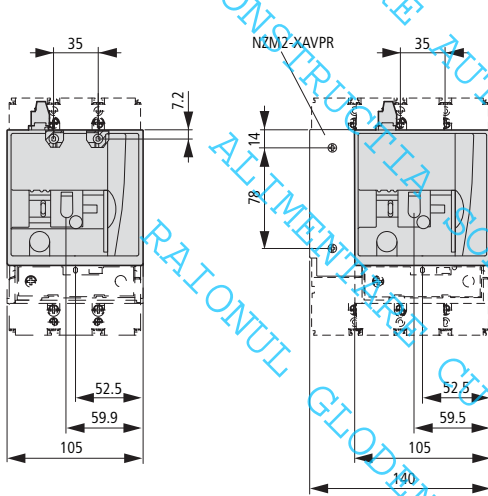
NZM2-XR...



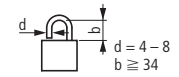
- ① Up to 3 padlocks
- ② Remote operator hinged



NZM2-XRD...

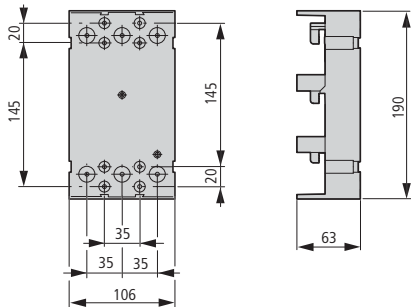


- ① Up to 3 padlocks
- ② Remote operator hinged



Component adapter

NZM2-XAD250



xEnergy

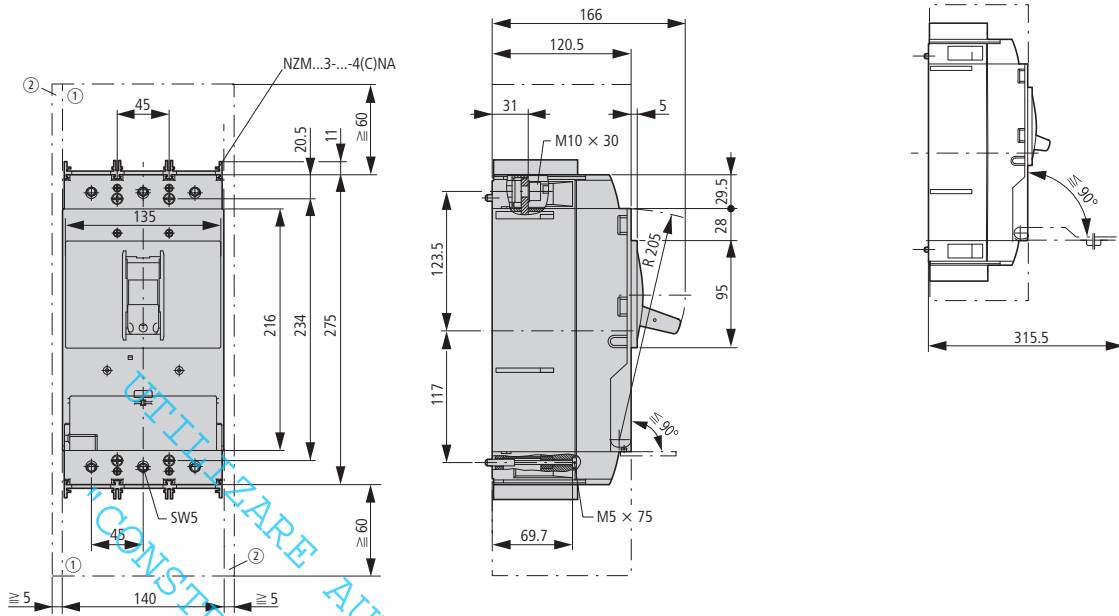
Circuit-breaker

3 pole

LZMC3

LZMN3

LN3



- ① Blow-out space, minimum distance to other parts ≥ 60 mm
- ② Minimum distance to adjacent parts ≥ 5 mm

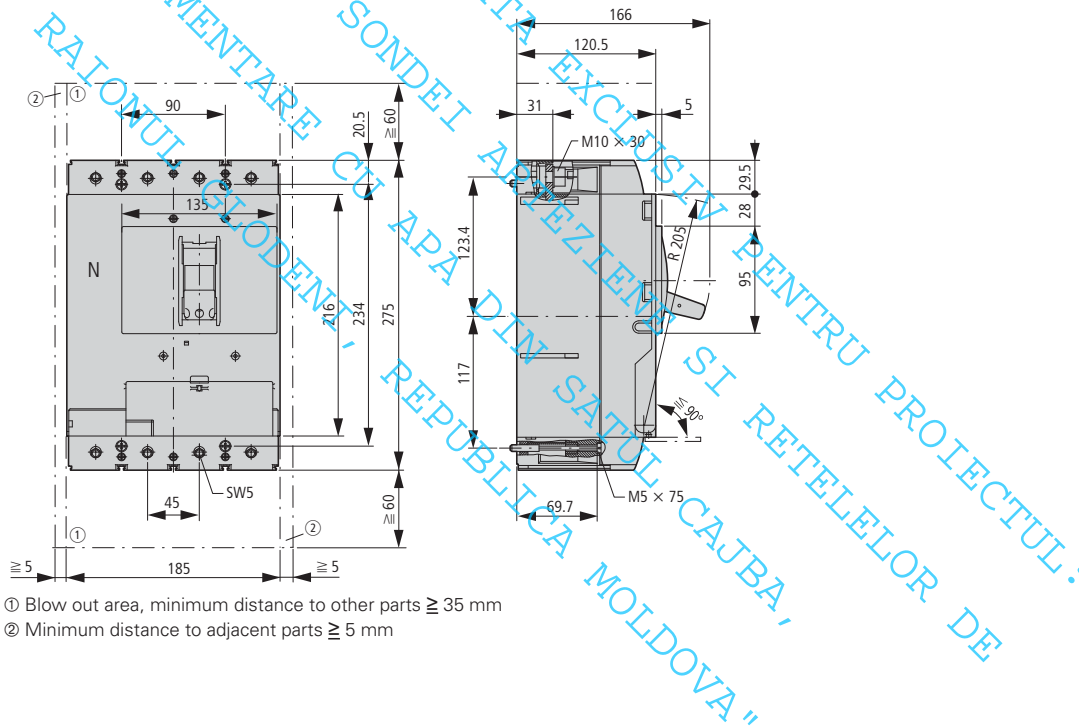
Circuit-breaker

4 pole

LZMC3-4

LZMN3-4

LN3-4



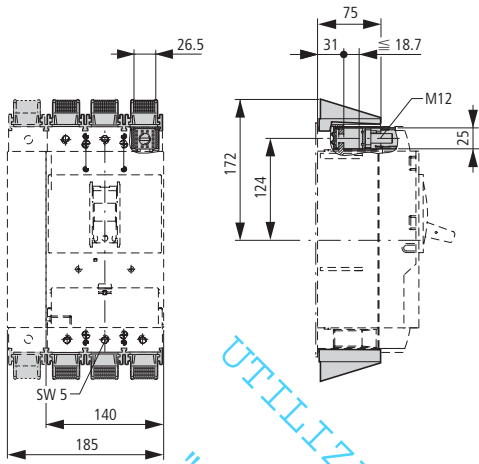
- ① Blow out area, minimum distance to other parts ≥ 35 mm
- ② Minimum distance to adjacent parts ≥ 5 mm

Dimensions

NZM2...-XK...

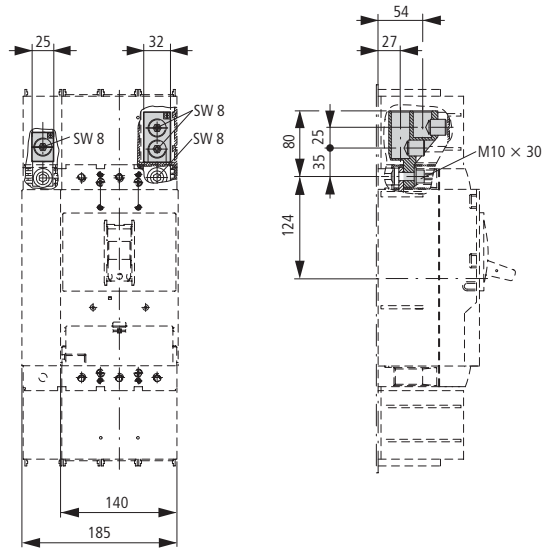
Box terminal

(+)NZM3(-4)-XKC(O)(U)



Tunnel terminal

NZM3(-4)-XKA1(2)



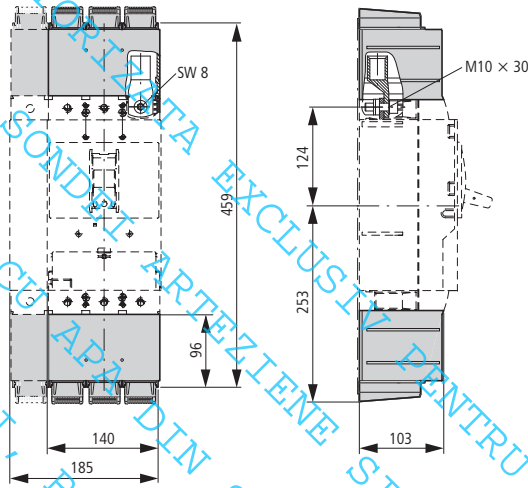
Covers

NZM3(-4)-XKSA

Cable lug

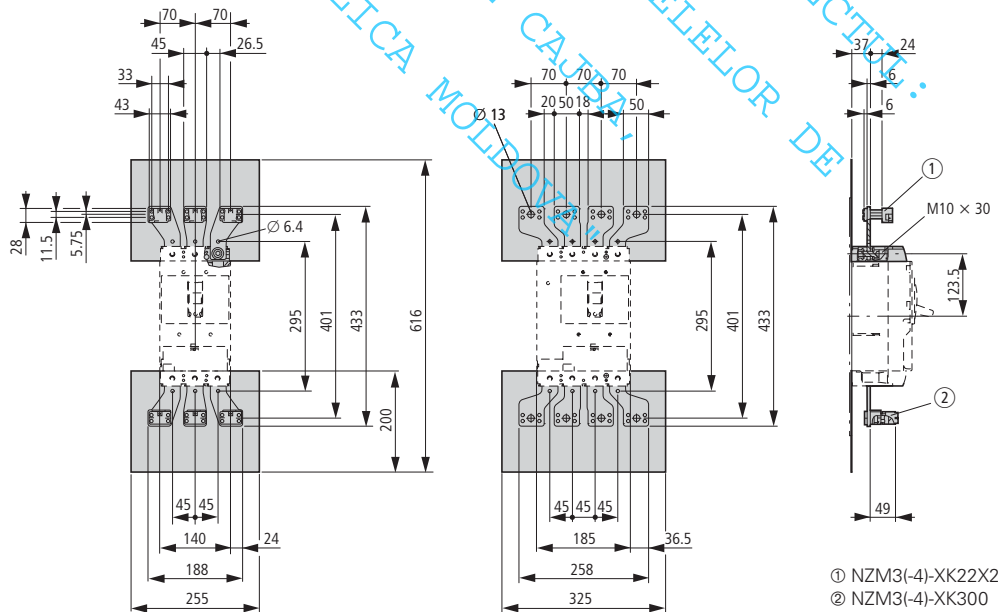
NZM3-XKS185

"UTILIZARE AUTORIZATA EXCLUSIV PENTRU PROIECTII DE ALIMENTARE SONDAJ ARTEZIENE SI REZELELOR DE RAIONUL GLODENI, REPUBLICA MOLDOVA"



Connection width extension

NZM3(-4)-XKV70

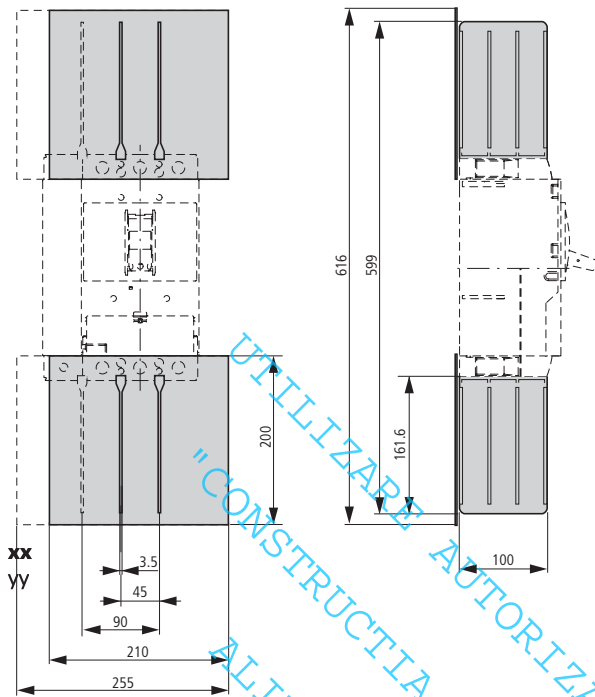


① NZM3(-4)-XK22X21
② NZM3(-4)-XK300

xEnergy

Phase isolators

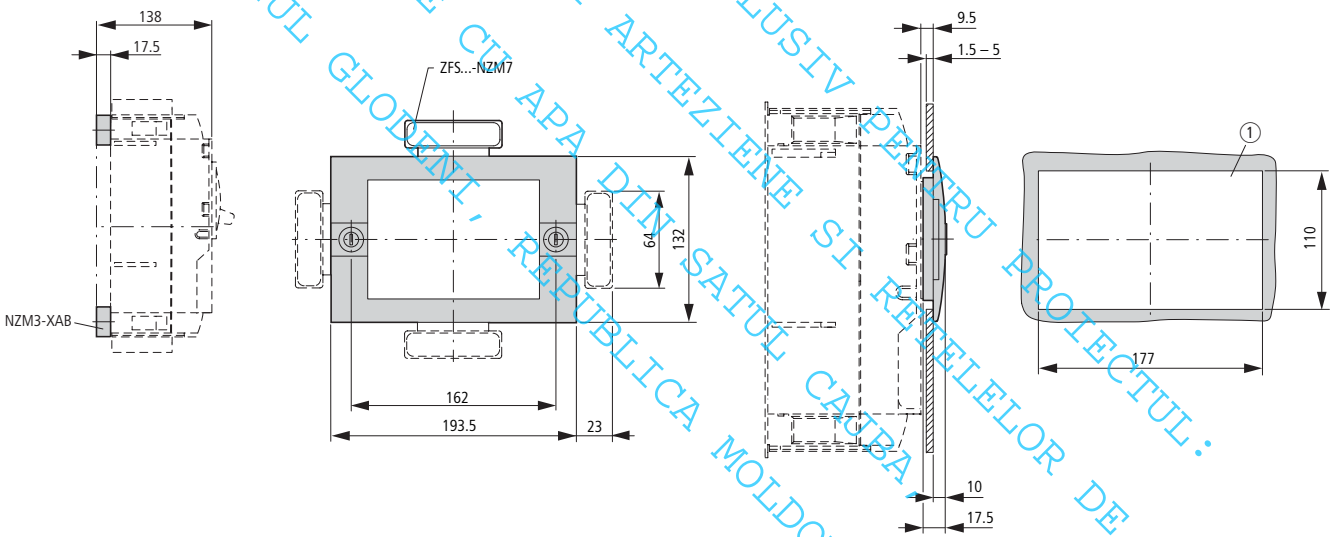
NZM3-4-XKP



Spacers
NZM3-XAB

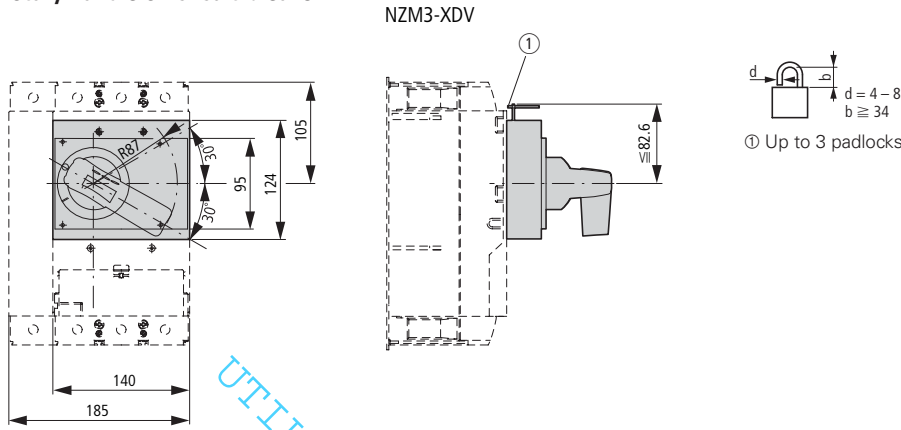
Insulating surrounds
NZM3-XBR

① Mounting aperture



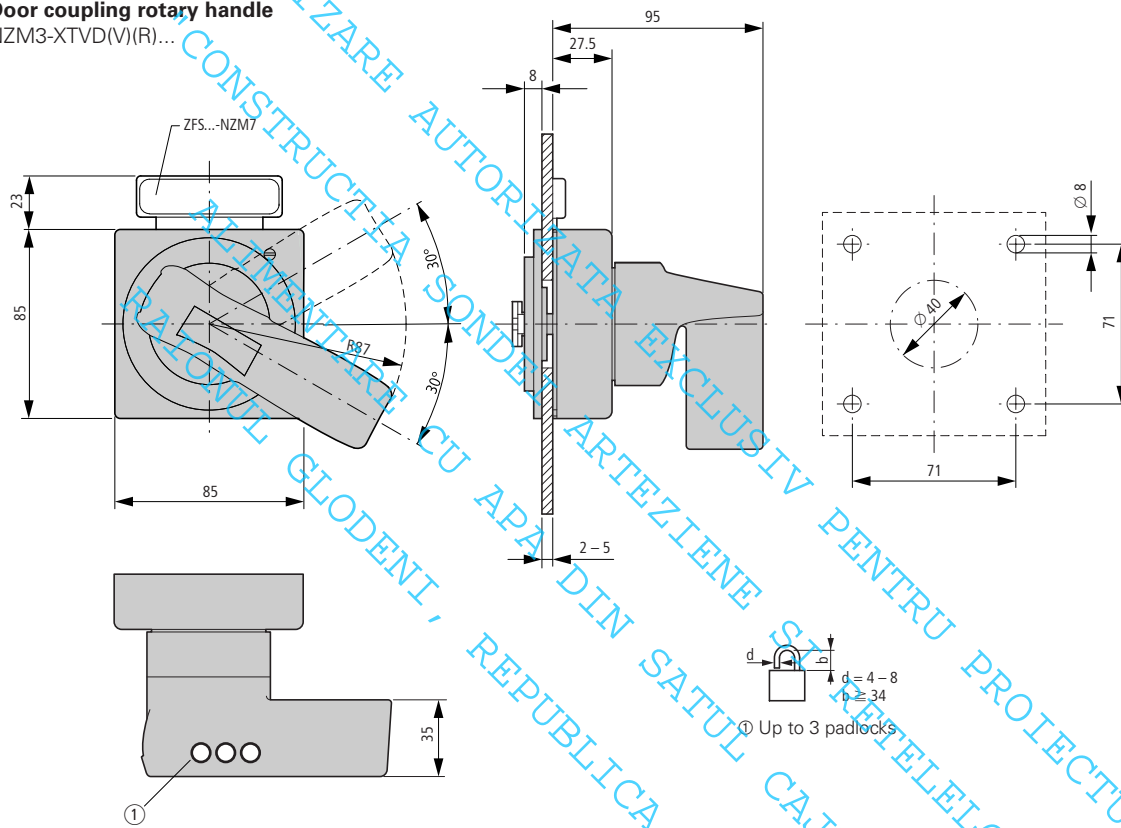
Rotary drive

Rotary handle on circuit-breaker



Door coupling rotary handle

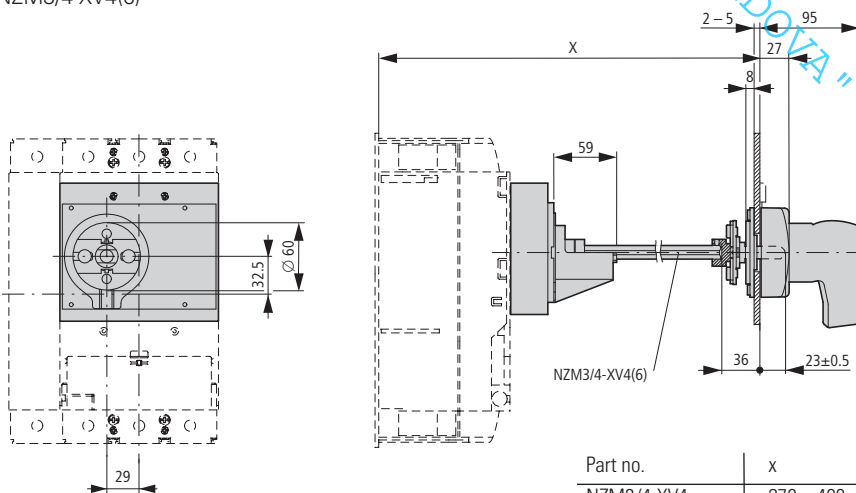
NZM3-XTVD(V)(R)...



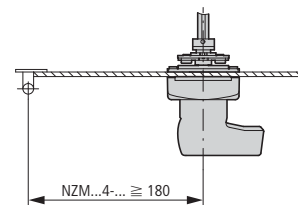
Door coupling rotary handle with extension shaft

NZM3-XTVD(V)(R)

NZM3/4-XV4(6)



Minimum door coupling rotary handle clearance from door pivot point



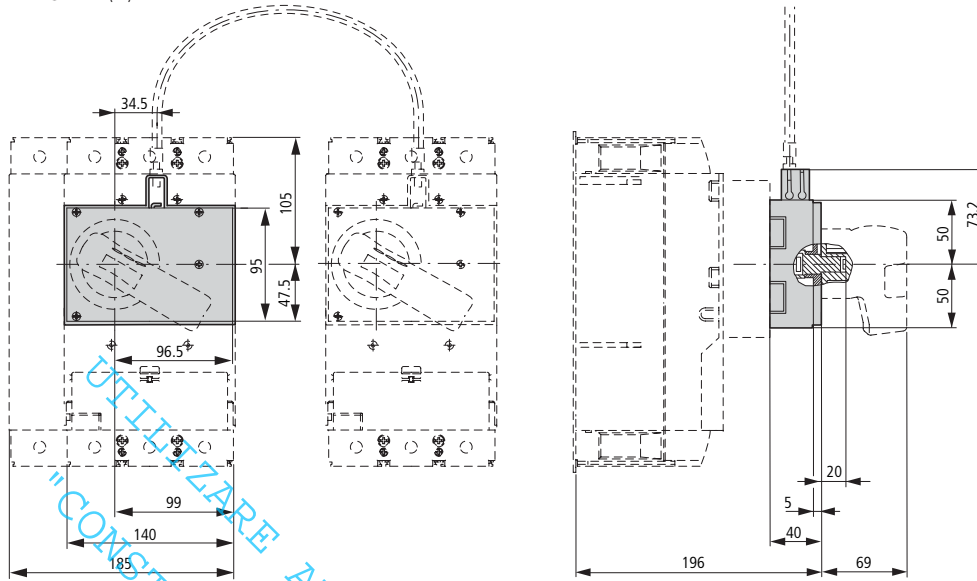
Part no.	x
NZM3/4-XV4	270 – 400
NZM3/4-XV6	400 – 600

xEnergy

NZM3-XMV, NZM3-XAD..., NZM3-XR...

Mechanical interlock

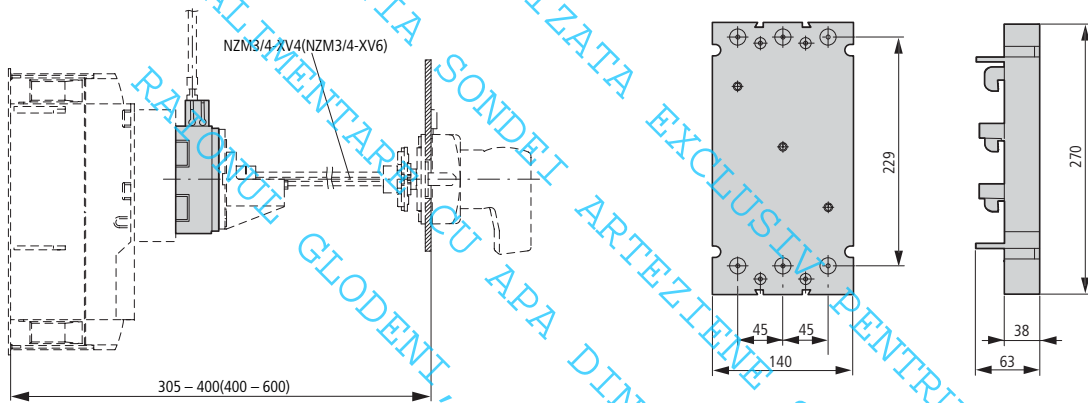
NZM3-XMV + NZM3-XDV(R)



NZM3-XMV + NZM3-XTVD(V)(R)

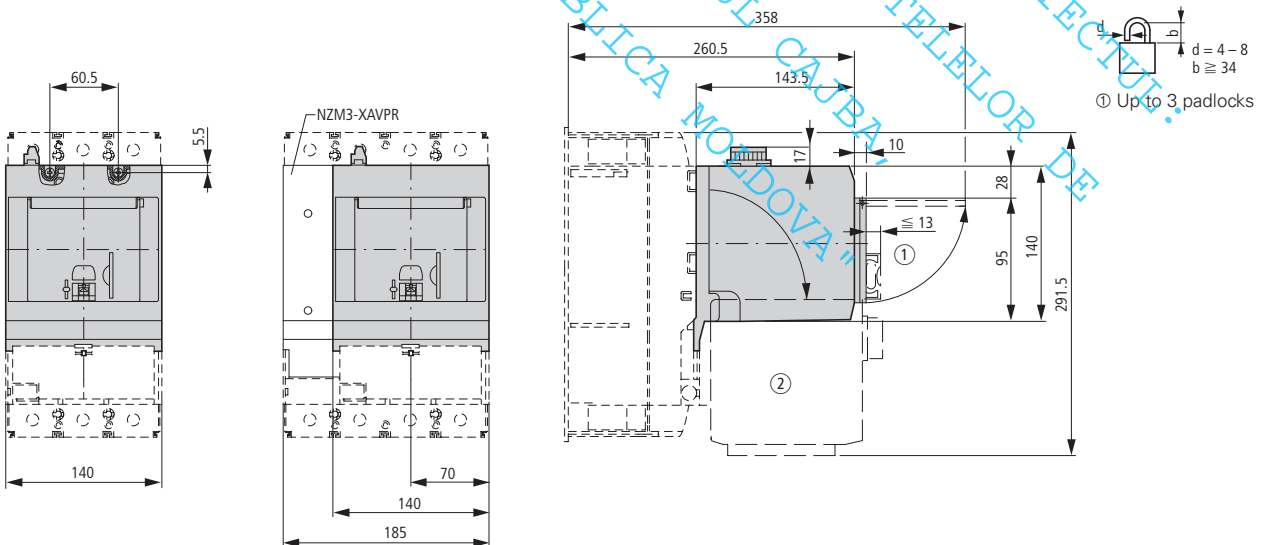
Component adapter

NZM3-XAD550



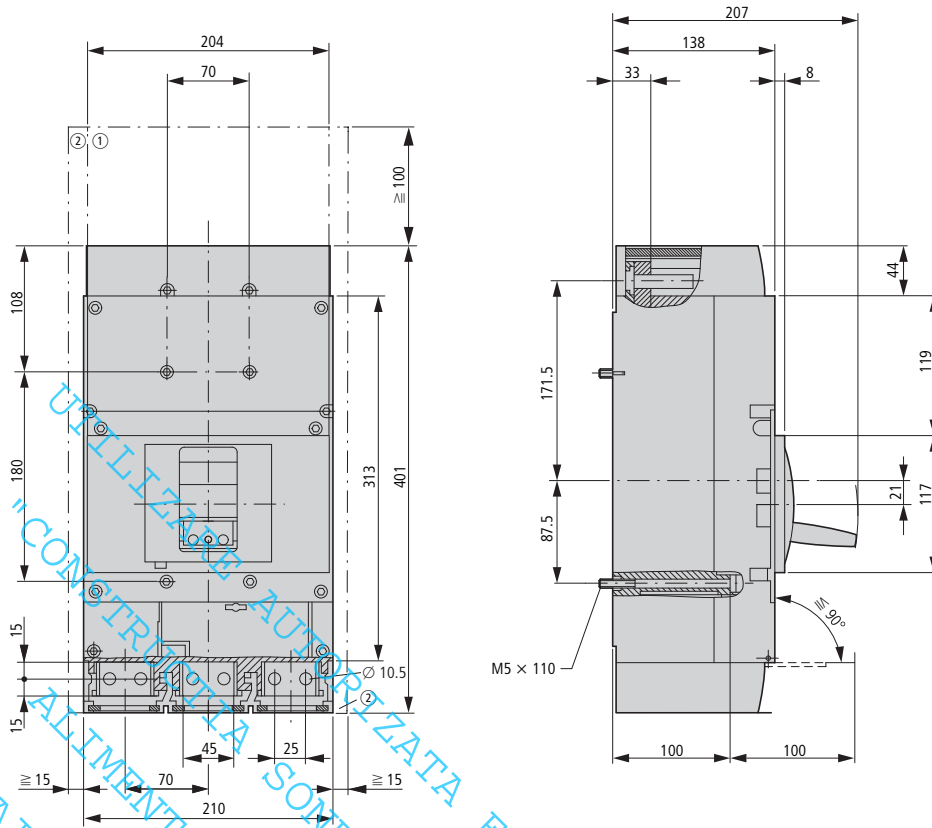
Remote operator

NZM3-XR...



Circuit-breaker

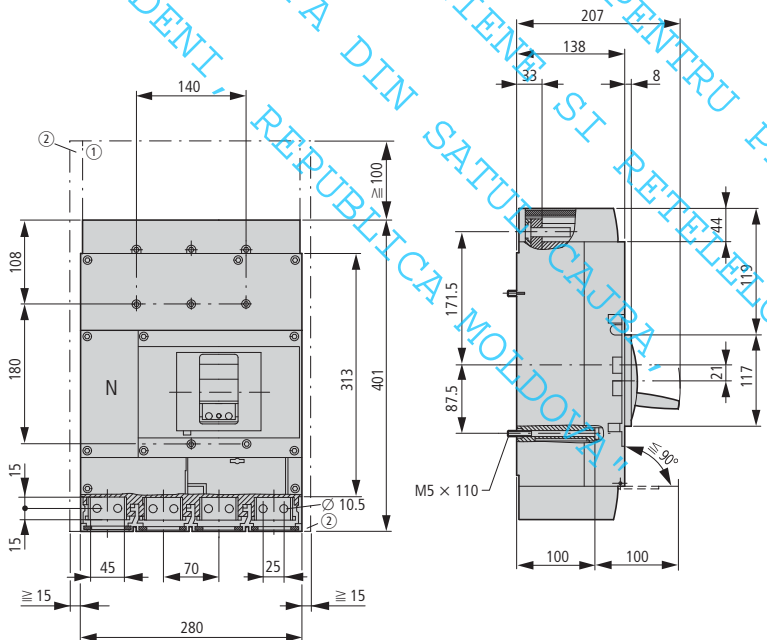
3 pole
LZMN4
LN4



- ① Blow out area, minimum distance to other parts ≥ 100 mm up to 690 V
- ② Minimum distance to adjacent parts ≥ 5 mm

Circuit-breaker

4 pole
LZMN4-4
LN4-4

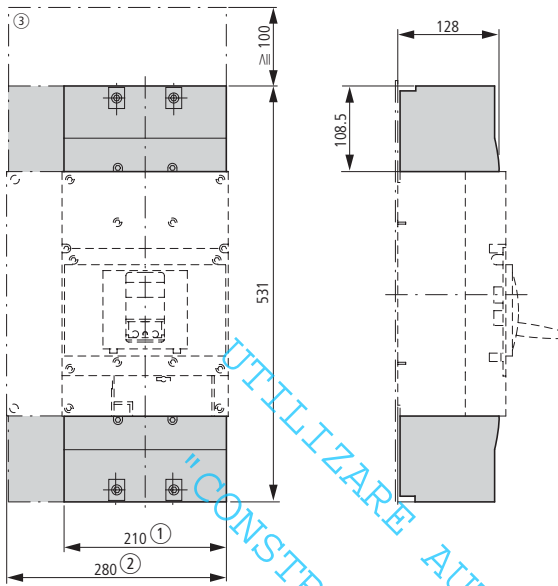


- ① Blow out area, minimum distance to other parts ≥ 100 mm up to 690 V
- ② Minimum distance to adjacent parts ≥ 5 mm

xEnergy

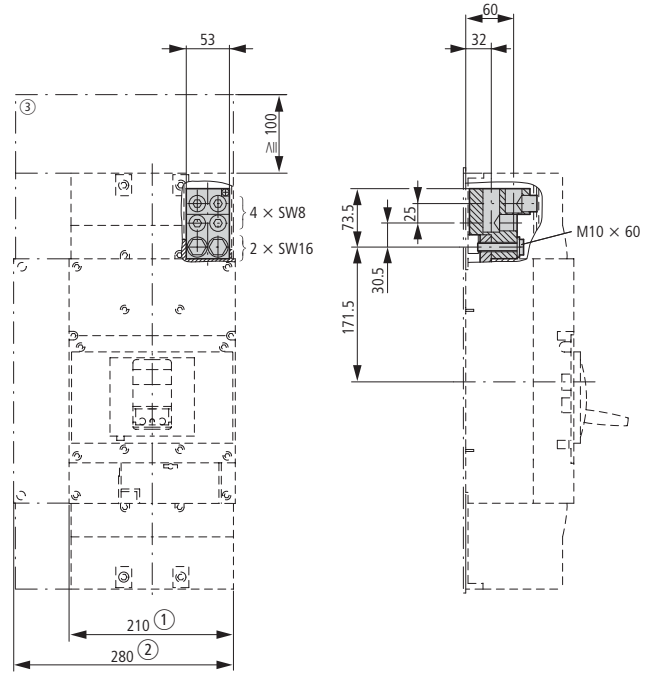
Covers

NZM4(-4)-XKSA



Tunnel terminal

NZM4-4-XKA



- ① 3 pole
- ② 4 pole
- ③ Clearance from conductive parts ≥ 100 mm up to 690 V

Screw connection

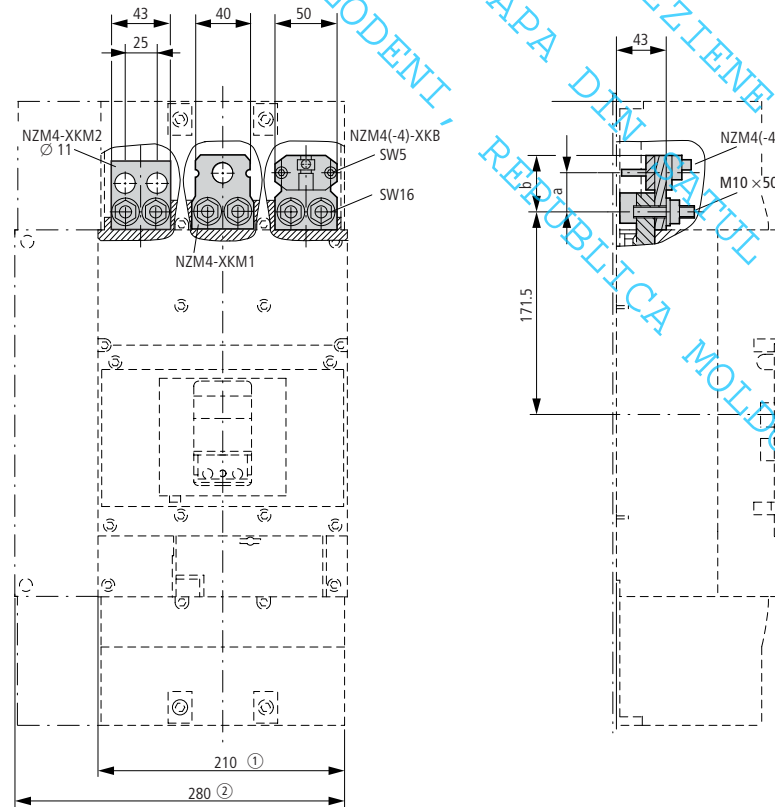
Module plate

Single hole
NZM4(-4)-XKM1
2-hole
NZM4(-4)-XKM2

Flat cable terminal

NZM4(-4)-XKB

Part no.	a	b
NZM4(-4)-XKM	136	47
NZM4(-4)-XKM	232	40
NZM4(-4)-XKB	-	47

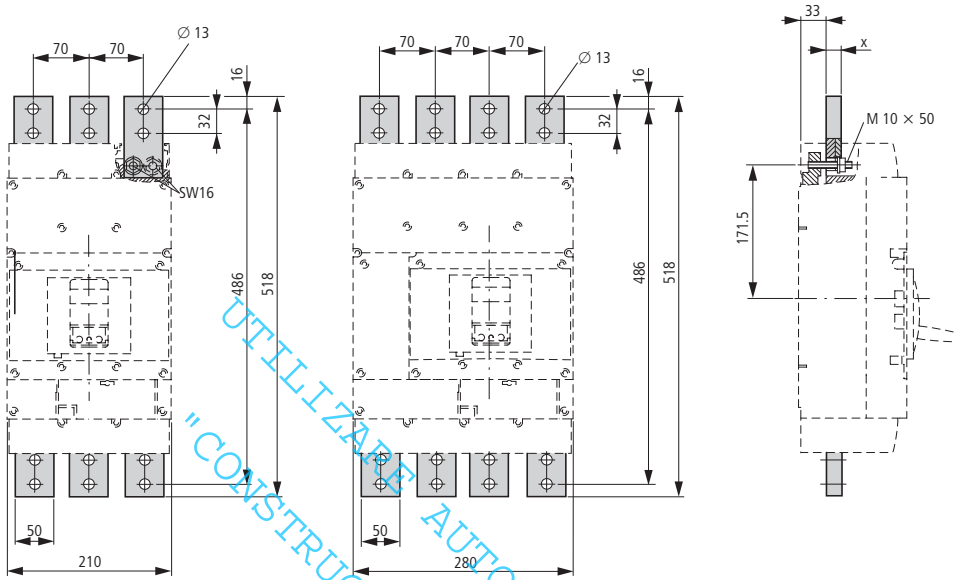


- ① 3 pole
- ② 4 pole
- ③ Clearance from conductive parts ≥ 100 mm up to 690 V

Module plate

2 holes, vertical

NZM4(-4)-XKM2S...

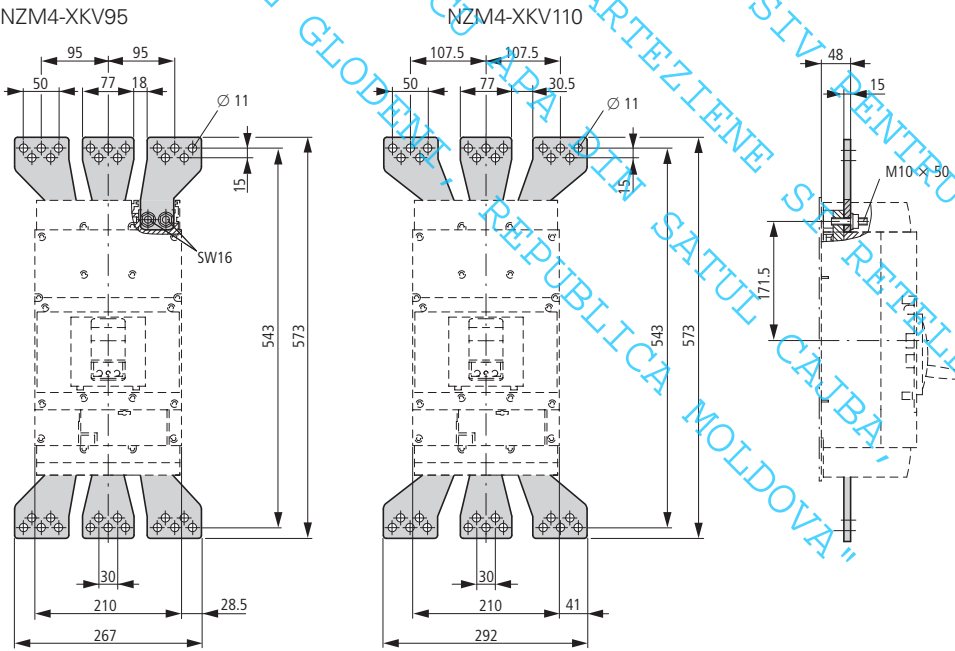


Part no.

NZM4(-4)-XKM2S-1250	12
NZM4(-4)-XKM2S-1600	20

Connection width extension

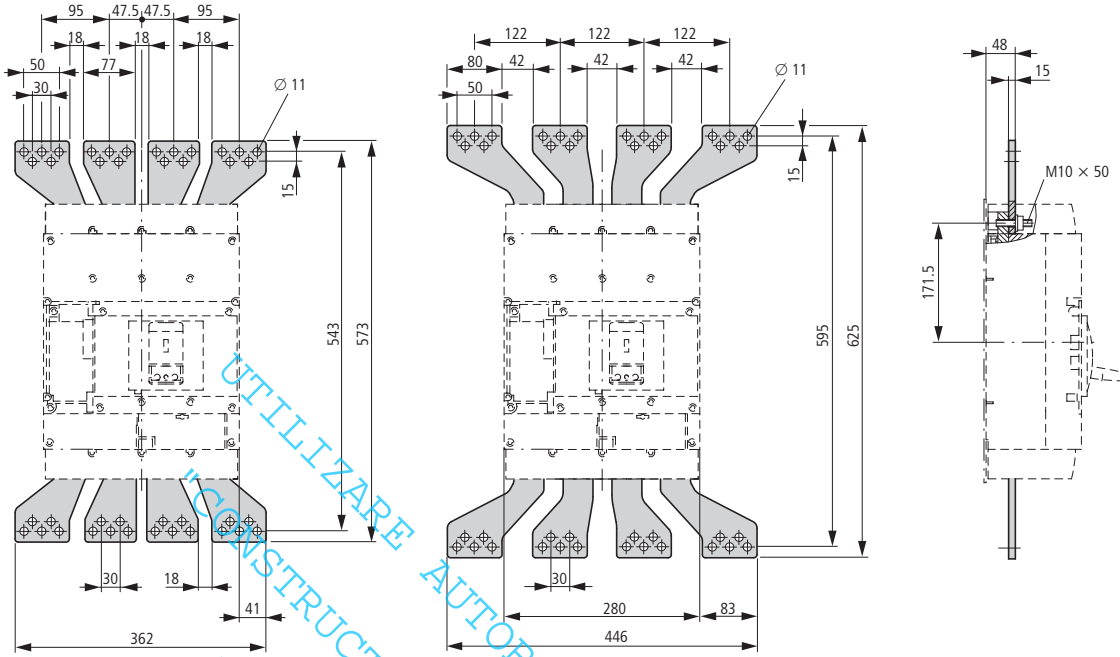
NZM4-XKV95



xEnergy

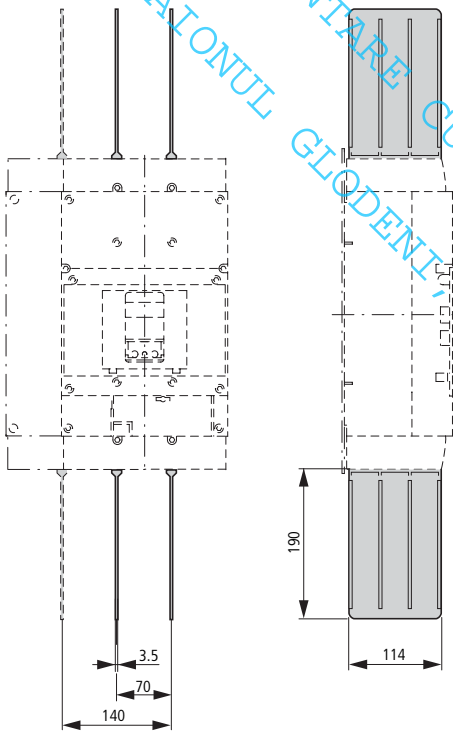
NZM4-4-XKV95

NZM4-4-XKV120



Phase isolators

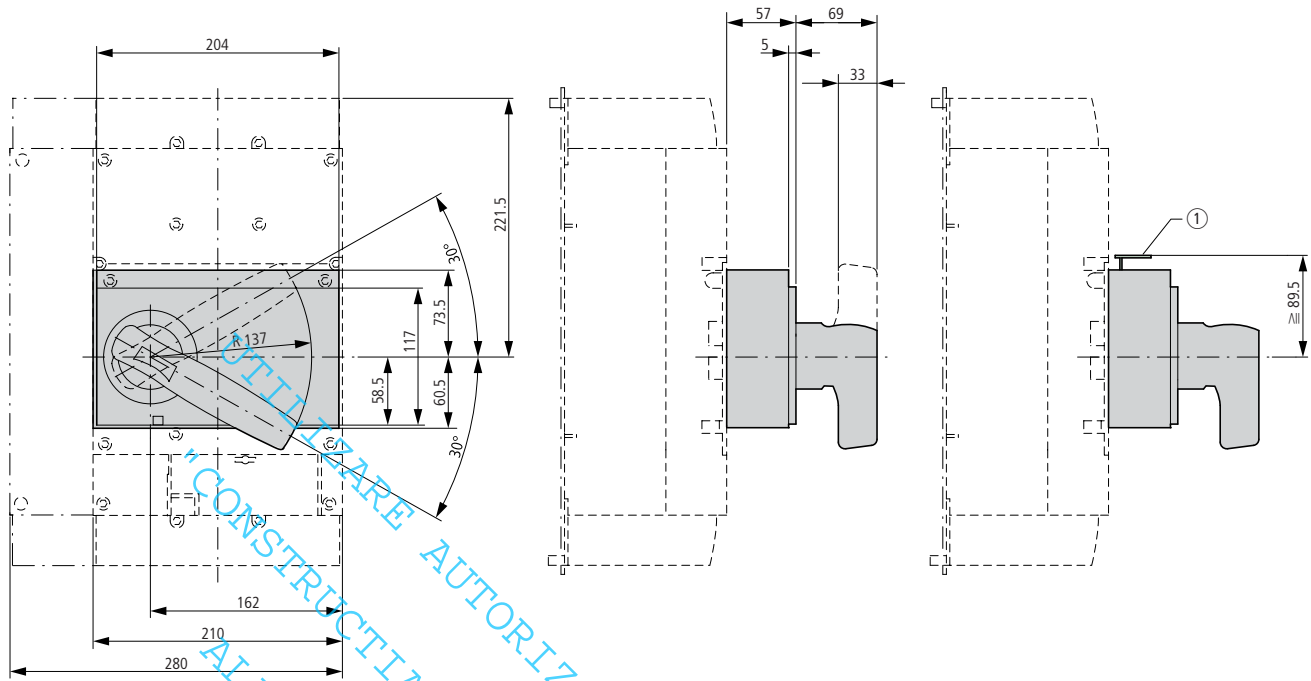
NZM4-4-XKP



UTILIZARE AUTORIZATA EXCLUSIV PENTRU PROIECTUL:
 ALIMENTARE SONDEI ARTEZIENE SI RETELELOR DE
 RAIONUL GLODENI, REPUBLICA MOLDOVA"

Rotary handle on circuit-breaker

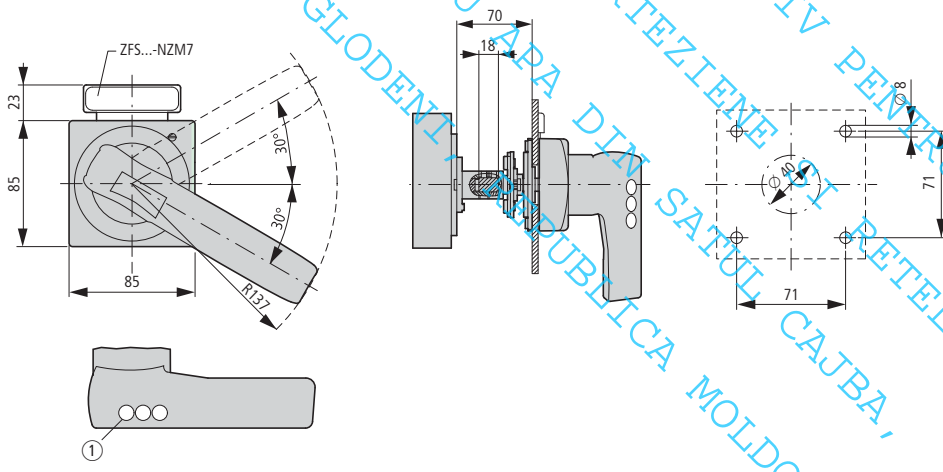
NZM4-XDV(R)



① Up to 3 padlocks

Door coupling rotary handle

NZM4-XTVD(V)(R)...



① Up to 3 padlocks

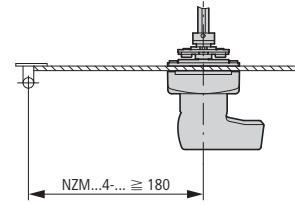
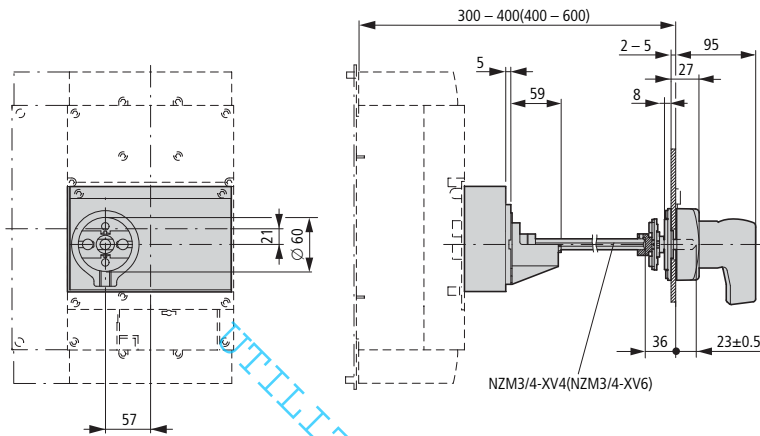
xEnergy

NZM4-XTVD..., NZM4...MV

Door coupling rotary handle with extension shaft

NZM4-XTVD(V)(R)
NZM3/4-XV4(6)

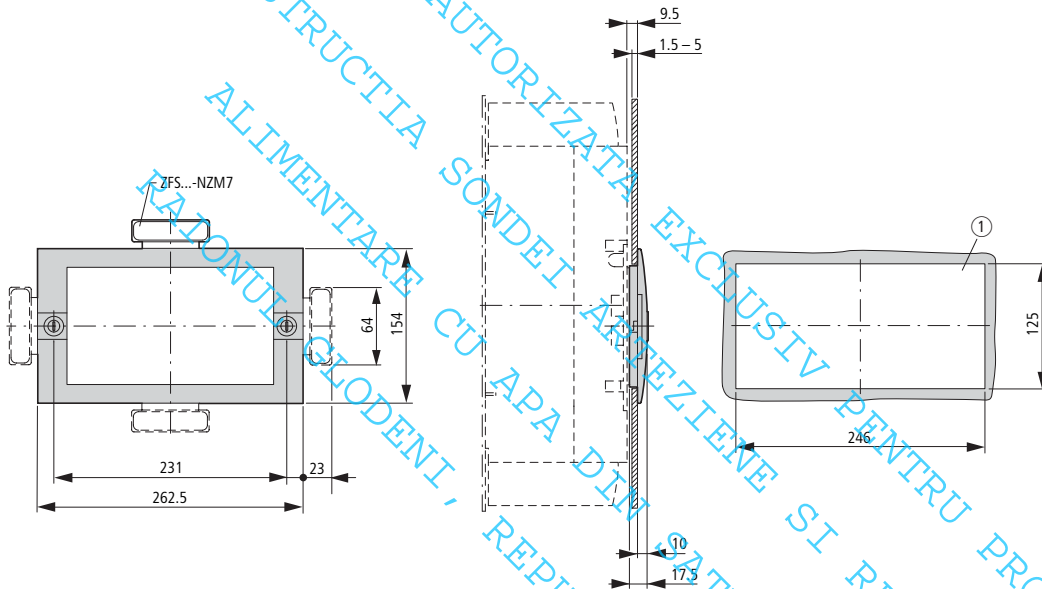
Minimum door coupling rotary handle clearance from door pivot point



Insulating surrounds

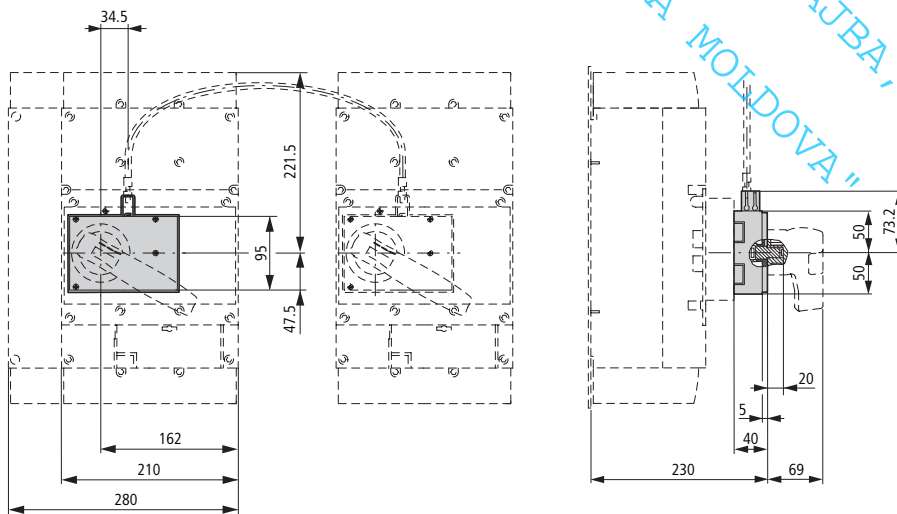
NZM4-XBR

① Mounting aperture



Mechanical interlock

NZM4-XMV + NZM4-XDV(R)

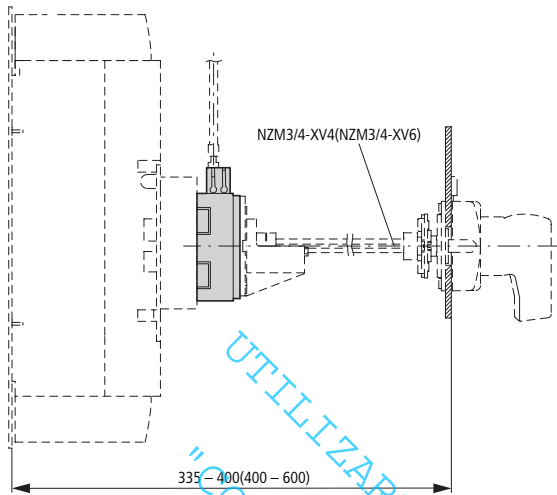


Dimensions

NZM4-XBR, NZM4-XR...

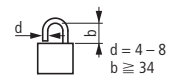
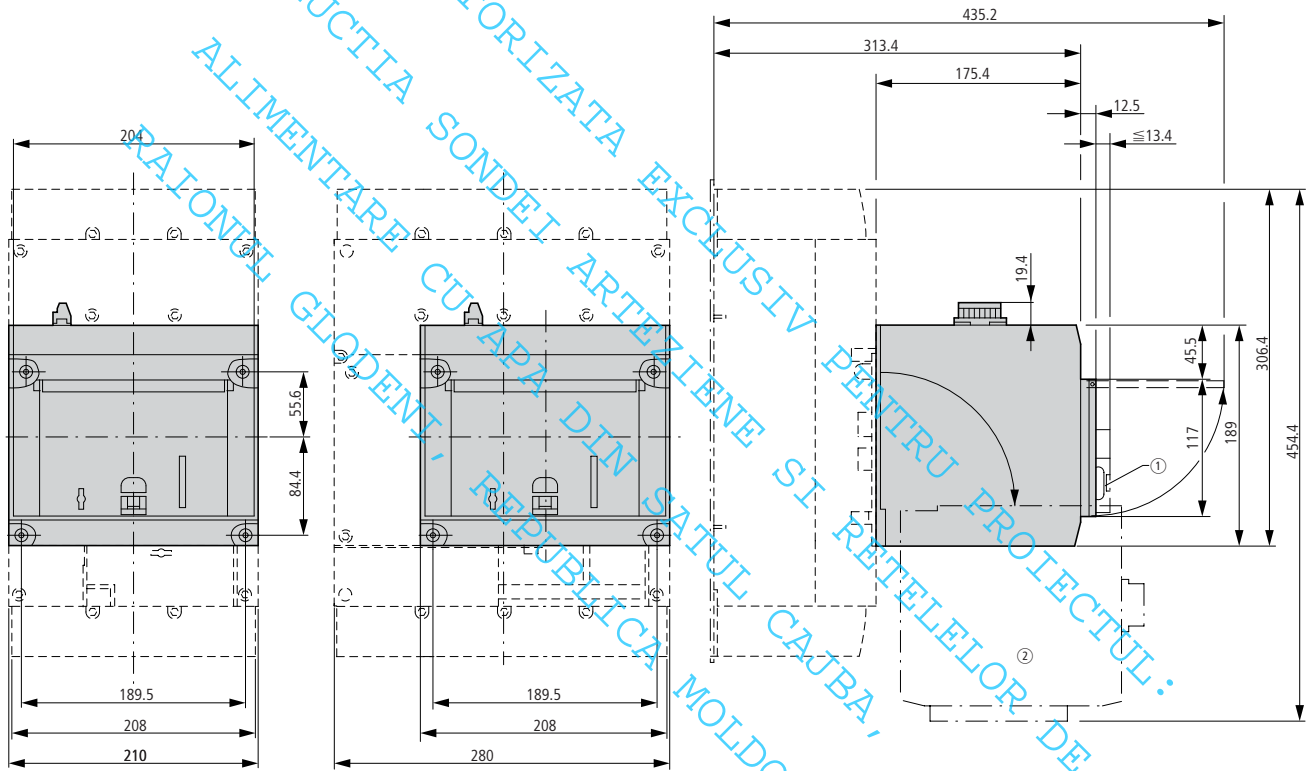
Mechanical interlock

NZM4-XMV + NZM4-XTVD(V)(R)



Remote operator

NZM4-XR...



① Up to 3 padlocks
Remote operator folded

Eaton is a power management company with 2014 sales of \$22.6 billion. Eaton provides energy-efficient solutions that help our customers effectively manage electrical, hydraulic and mechanical power more efficiently, safely and sustainably. Eaton has approximately 102,000 employees and sells products to customers in more than 175 countries.

Article number xxxxxx

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Switzerland

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Publication number CA012002EN

Graphics: SRA
Print:

Quality Management System Certificate



Certificate no. DK-0200-PED-H-002
Issued by FORCE Certification A/S – EC Notified Body number 0200

The Management System of

Siemens AG

DE-76181 Karlsruhe
Germany

Siemens SAS

1, Chemin de la Sandlach
F - 67506 Haguenau Cedex,
France

Siemens Sensors & Communications Ltd.

117, Guangxian Road, Qi Xian Ling, High Tech Park
116023 Dalian,
China

complies with the
requirements of

PED - Module H

in directive 2014/68/EU of the European Parliament and of the Council of 15 May
2014 on pressure equipment

The scope of the certification

Production of pressure equipment accessories

Karin Birgitte Hiis

Digitally signed by Karin Birgitte Hiis
Date: 2019.09.10 15:04:32 +02'00'

Certification Manager

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Enclosed 1.0 specifies the types of instruments included in the scope of the certificate.

Date of issue: 2019-09-10

Valid until: 2022-09-03

FIT no. 118-31162

Certificate ID no. 0200-PED-07192

This certificate replaces certificate no. DK-0200-PED-H-002 with Certificate ID no. 0200-PED-04815 issued 2018-08-30.

Validity of this certificate can be checked via www.forcecertification.com.

This certificate is/and enclosure are the property of FORCE Certification A/S.



Management System Certificate

Certificate no. DK-0200-PED-H-002
Issued by FORCE Certification A/S – EC Notified Body number 0200
Enclosure 1.0 (page 1 of 3)

Issued to

Siemens AG

DE-76181 Karlsruhe
Germany

Including the production sites

Siemens SAS

1, Chemin de la Sandlach
F - 67506 Haguenau Cedex,
France

Siemens Sensors & Communications Ltd.

117, Guangxian Road, Qi Xian Ling, High Tech Park
116023 Dalian,
China

The following types of pressure equipment are included:

Production site: Siemens AG, Karlsruhe, Germany

Product Group	Type	Drawing No.	Design Code	Fluid Groups	Category	Limitations/Restrictions	Note
SITRANS F X Vortex Flowmeters	FX 300	FZ VG17000000i	AD 2000	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I – III	Max. DN 2000	Manufactured at KROHNE Messtechnik, Duisburg, Germany
	FX 330	DRW VG16000000i	AD 2000	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I – III	Max. DN 2000	
SITRANS F M Electromagnetic Flowmeters	911/E	140.000.0.000 024P00	AD 2000	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I – III	Max. DN 2000	Manufactured at MECON GmbH Kerpen, Germany

Management System Certificate

Certificate no. DK-0200-PED-H-002
 Issued by FORCE Certification A/S – EC Notified Body number 0200
 Enclosure 1.0 (page 2 of 3)

Production site: Siemens SAS, Haguenau, France

Product Group	Type	Drawing no. / Document no.	Design Code	Fluid Groups	Category	Limitations/Restrictions	Note
SITRANS F M Electromagnetic Flowmeters	MAG1100 MAG1100 HT MAG1100 F	A5E00774784A	ASME	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	-	-
	MAG3100 MAG3100 HT MAG3100 P	083R0054	ASME	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	-	-
	MAG5100 W MAG8000 MAG8000 CT	$DN \leq 300$ 083R0371	ASME	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	-	-
	MAG5100 W MAG8000 MAG8000 CT	$DN > 300$ 083R0054 (Equal to MAG3100)	ASME	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	-	-
	911/E	140.000.0.000 024P00	AD 2000	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	Max. DN 2000	Manufactured at MECON GmbH Kerpen, Germany
SITRANS F US Ultrasonic inline Flowmeters	FUS/FUE380	A5E01137780A A5E33617486A	EN 13480	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	-	-
	SONO 3300 SONO 3100	A5E33629118A	EN 13480	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	-	-
SITRANS F C Coriolis/Mass Flowmeters	FCS 400 FC 430 FC 410	A5E03089729A	EN 13480	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	-	-
	Mass 2100 – FCS400 Adapter tube	A5E41220632A A5E38522124A	ASME	G1	I - II	32 < DN < 50	-

Management System Certificate

Certificate no. DK-0200-PED-H-002
Issued by FORCE Certification A/S – EC Notified Body number 0200
Enclosure 1.0 (page 3 of 3)

Production Site: Siemens Sensors & Communication Ltd. Dalian, China

Product Group	Type	Drawing no. / Document no.	Design Code	Fluid Groups	Category	Limitations/Restrictions	Note
SITRANS F M Electromagnetic Flowmeters	MAG3100 MAG3100 HT MAG3100 P	083R0054	ASME	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	-	-
	MAG5100 W (7ME658)	083R0054 (Equal to MAG3100)	ASME	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	-	-
	MAG5100 W (7ME652) MAG8000 (7ME681) MAG8000 CT (7ME682)	DN > 300 083R0054 (Equal to MAG3100)					
SITRANS F US Ultrasonic inline Flowmeters	FUS/FUE380	A5E33617486A	EN 13480	Liquid & Gas Group 1 & 2 (L1, L2, G1, G2)	I - III	DN >= 100	-

Karin Birgitte Hiis Digitally signed by Karin Birgitte Hiis
Date: 2019.09.10 15:06:49 +0200
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Date of issue: 2019-09-10
Expire Date: 2022-09-03
FIT no: 118-31162
Enclosure 1.0 of certificate ID no. 0200-PED-07192

Enclosure 1.0 replaces enclosure 1.0 of certificate no. DK-200-PED-H-002 with Certificate ID no. 0200-PED-04815
issued 2018-08-30

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EATON

Declaratie de Conformitate

Nr. 553-0084

Noi, **EATON ELECTRIC SRL**

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

ca reprezentant unic în România al producătorilor din grupul Eaton,
în baza declarațiilor de conformitate emise de acestia,

declarăm pe propria răspundere ca produsele (familia):

Eaton - Residual Current Device

PF7-...

(declarația de conformitate se aplică pentru toate tipurile enumerate în catalogul nostru actual de produse)

sunt realizate în conformitate cu buna practică inginerască în materie de siguranță în vigoare în Uniunea Europeană, nu pun în pericol viața, sănătatea, securitatea persoanelor și a animalelor domestice, nu produc un impact negativ asupra mediului, cu condiția instalării și întreținerii în mod corespunzător, utilizării în scopul pentru care au fost create, respectării instrucțiunilor producătorului, standardelor specifice și a "bunelor practici ingineresti", și sunt conforme cu:

prevederile directivelor Uniunii Europene:

Low Voltage Directive 2014/35/EU

EMC Directive 2014/30/EU

RoHS Directive 2011/65/EU

și cu standardele Europene armonizate :

EN61008-1/04 + A11/07 + A12/09 + A13/12, EN61008-2-1/94 + A11/98



Bucuresti, Romania

20.04.2016

Razvan Sorescu

Quality, Environment,
Health & Safety
responsible

Gabriel Tache
Country Manager

Data de aplicare a marcajului CE: 2002

Nr. document: 553-0084 / 20.04.2016

EU-Type Examination Certificate

Measuring Instrument Directive

Certificate number: DK-0200-MI001-001

Issued by FORCE Certification A/S, Denmark

EU-notified body number 0200

In accordance with the Danish Safety Technology Authority's statutory order no. 1382 of November 25, 2016 which implements the Directive 2014/32/EU of the European Parliament and Council of February 26, 2014 on measuring instruments (MID).

Issued to: **Siemens AG**
DE-76181
Karlsruhe
Germany

Type of instrument: Water meter

Type designation: MAG5100W DN50-1200 with MAG5000CT or MAG6000CT

Valid until: 2028-12-01

Number of pages: 7 including appendix

Date of issue: 2019-03-21

Version: 13

This version of DK-0200-MI001-001 is issued due to an editorial change and it replaces all previous versions.

Approved by

Processed by


Michael Møller Nielsen
Certification Manager


Lars Pøder
Examiner

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.
This EU-type examination certificate may not be reproduced except in full, without written permission by FORCE Certification A/S.

FORCE Certification references: TASK no.: 119-24890.01 and ID no.: 0200-MID-06095

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Appendix to

EU-Type Examination Certificate

Measuring Instrument Directive

Number: DK-0200-MI001-001

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

Version	Issue date	Changes
DK-0200-MI001-001	2007-03-30	Original certificate
DK-0200-MI001-001 rev 1	2009-04-29	Changes in pressure and flow ranges
DK-0200-MI001-001 rev 1 - 2012	2012-02-21	Change of installation requirement
DK-0200-MI001-001 rev 1 - 2014	2014-05-22	DN350 – DN600 added
DK-0200-MI001-001 rev 1 - 2015	2015-06-22	New HW- and SW versions added, DN700 - DN2000 added, 12 - 24 V variant added
DK-0200-MI001-001 ver 5	2017-03-31	Administrative extension of the validity period
DK-0200-MI001-001 ver 6	2017-07-01	Administrative extension of the validity period
DK-0200-MI001-001 ver 7	2017-09-04	Administrative extension of the validity period
DK-0200-MI001-001 ver 8	2018-01-01	Administrative extension of the validity period
DK-0200-MI001-001 ver 9	2018-04-01	Administrative extension of the validity period
DK-0200-MI001-001 ver 10	2018-05-01	Administrative extension of the validity period
DK-0200-MI001-001 ver 11	2018-06-01	Administrative extension of the validity period
DK-0200-MI001-001 ver 12	2018-12-01	Meter re-tested according to OIML R 49:2013 and now valid for a new 10-year period
DK-0200-MI001-001 ver 13	2019-03-21	Editorial change on page 5

Applied standards and documents:

OIML R 49:2013

The instrument/measuring system shall correspond with the following specifications:

Type designation:

MAG5100W DN50-1200 with MAG5000CT or MAG6000CT.

Description:

The construction consists of an electromagnetic flow sensor, MAG5100W, and a signal transmitter, MAG5000CT or MAG6000CT with or without communication modules.

The design principle is, as for any electromagnetic 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 pass through the magnetic field, a differential DC voltage is introduced between the measuring electrodes.

The MAG5000CT and MAG6000CT signal converter operates at 1.5625 – 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 μ V 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 optimize the velocity profile of the fluid. Between the lining and the steel tube is fitted coils, which generate the magnetic field.

Technical documentation:
Reference numbers:

- 119-24890.01
- 117-20869.14
- 117-20869.10
- 117-20869.09
- 117-20869.08
- 117-20869.07
- 117-20869.05
- 117-20869.04
- 115-22122.05
- 114-23907.0007

FORCE Certification A/S - File numbers:

- 80.970.6-004A/06
- 80.976-086/09
- 80.976-193/10
- 80.976-265/12

Technical data
Instrument tested according to: OIML R 49:2013

Hardware bundle: 7

Firmware version: MAG5000CT

Version	Checksum for metrological part
4.09 X05	4DDA8DBEF84A2BAB1A28EABF27CE3A08

MAG6000CT

Version	Checksum for metrological part
3.03	057A9FFF
4.09 X02	A39561F596DE3DCC2C554698584DC083

Verification tolerance: $\pm 5\% Q_1 \leq Q < Q_2$ and $\pm 2\% Q_2 \leq Q \leq Q_4$
Unit of measurement: Cubic meters

Media temperature: 0.1 – 30 °C

Pressure class: PN 16, PN 10 or PN 6

Power supply: 115 – 230 VAC, 12 – 24 VAC/VDC

Environmental class: E2, M1

Climatic class: -25...55 °C

Durability specification: 10 years

Approved sensor variants

SIZE	DN50 (2")	DN65 (2½")	DN80 (3")	DN100 (4")	DN125 (5")	DN150 (6")	DN200 (8")
"R" Q ₃ /Q ₁	400	400	400	400	400	400	400
Q ₁ [m ³ /h]	0.16	0.25	0.4	0.63	1	1.6	2.5
Q ₂ [m ³ /h]	0.25	0.4	0.63	1	1.6	2.5	4
Q ₃ [m ³ /h]	63	100	160	250	400	630	1000
Q ₄ [m ³ /h]	78.75	125	200	312.5	500	787.5	1250

SIZE	DN250 (10")	DN300 (12")	DN350 (14")	DN400 (16")	DN450 (18")	DN500 (20")	DN600 (24")
"R" Q ₃ /Q ₁	400	400	160	160	160	160	160
Q ₁ [m ³ /h]	4	4	15.63	25	39.38	39.38	62.5
Q ₂ [m ³ /h]	6.4	6.4	25	40	63	63	100
Q ₃ [m ³ /h]	1600	1600	2500	4000	6300	6300	10000
Q ₄ [m ³ /h]	2000	2000	3125	5000	7875	7875	12500

SIZE	DN700 (28")	DN750 (30")	DN800 (32")	DN900 (36")	DN1000 (40")	DN1200 (48")
"R" Q ₃ /Q ₁	160	160	160	160	160	160
Q ₁ [m ³ /h]	39.38	39.38	39.38	62.5	62.5	100
Q ₂ [m ³ /h]	63	63	63	100	100	160
Q ₃ [m ³ /h]	6300	6300	6300	10000	10000	16000
Q ₄ [m ³ /h]	7875	7875	7875	12500	12500	20000

Above-mentioned tables describe the maximum specification of flow range. Other dynamic ranges are allowed if "R" is 40, 50, 63, 80, 100, 125, 160, 200, 250, 315 or 400.

And

Q₁ ≥ values in table,

Q₂/Q₁ = 1.6,

Q₄/Q₃ = 1.25

Checking facilities:

The meter complies with the requirements for type P checking facilities in OIML R 49-2:2013 Annex A "Type examination and testing of checking facilities of electronic devices".

Verification

Errors: Maximum permissible errors according to Directive 2014/32/EU of the European Parliament and Council of February 26, 2014 on measuring instruments (MID), Annex III (MI-001).

Procedure: Flow rate requirements according to OIML R 49:2013

The water temperature range shall be 20 ± 10 °C


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

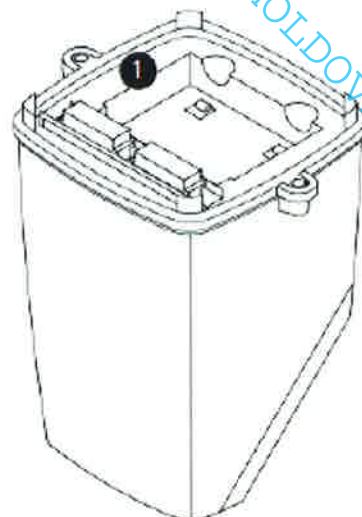
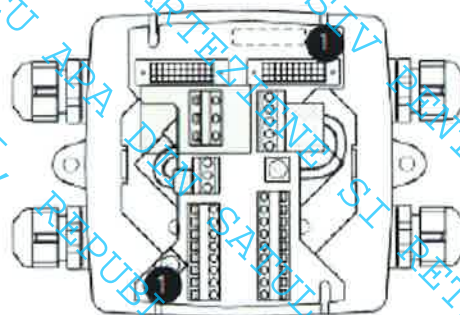
$$Q_1 \leq Q \leq 1.1Q_1 (\pm 5 \%)$$

$$Q_2 \leq Q \leq 1.1Q_2 (\pm 2 \%)$$

$$0.9Q_3 \leq Q \leq Q_3 (\pm 2 \%)$$

Internal sealing

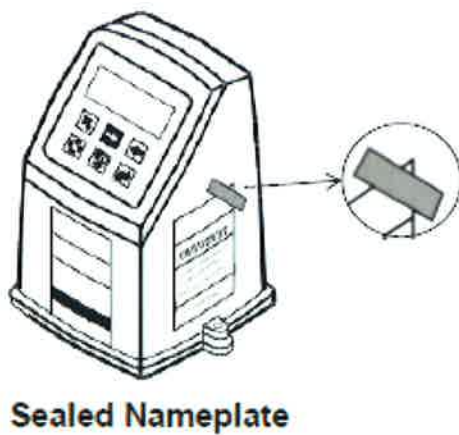
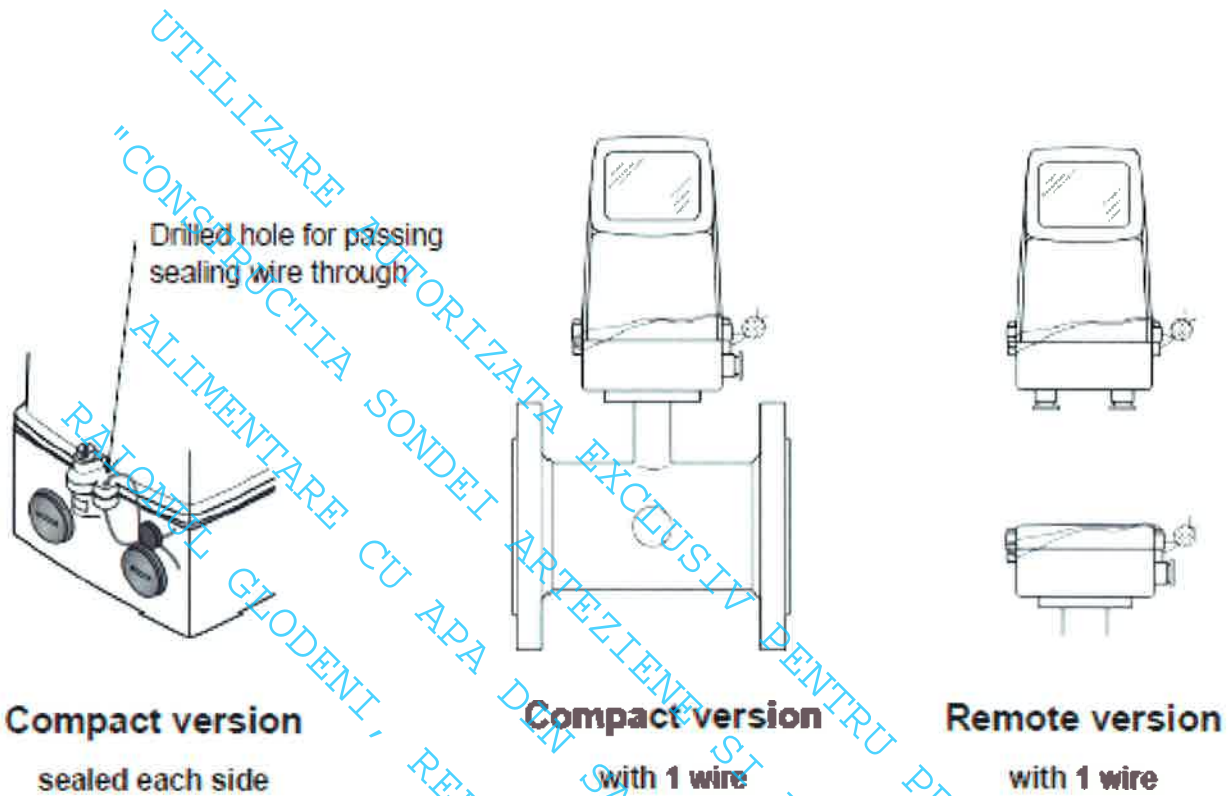
 Indicates the sealing locations.



Installation sealing

The installation sealing is made as shown below.

Transmitter Sealed on both sides either with one or 2 wires/seals
 (Use the drilled holes on the T-Box)



Installation

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

DN50-300: The sensor can be installed horizontally, vertically or at an angle.
DN350-1200: The sensor must be installed horizontally.

The signal transmitter can be fitted in all positions either compact on the sensor or remotely with a cable. Cable specification according to manufacturers (Siemens) specification. The cable length must not exceed 500 m.

Labeling and inscriptions

Manufacturer, type, year
Serial no.
EC-Type examination certificate number
T_{max} and P_{max}
Application temperature range
Power supply
Accuracy class
Software version
Unit of measurements: Cubic meter.
Direction of flow
Letter H for the sensor orientation (DN350-1200)

Label examples

SIEMENS	
SITRANS F M MAG 6000 CT/5100 W	
System Order No.:	7ME65206PB122MA1-Z P24
System Serial No.:	111202H168
Transmitter	
Converter Serial No.:	N1K3085008
Sensor Serial No.:	186702H108
SW/HW V.:	4.09 X02 / /
Checksum	A39581F5960E3DCC2C554698584DC083
T. amb.	-25°C to +55°C
Ver. tol.	+2% Q2>Q<Q4 +5% Q1>Q<Q2
Certification No.	DK-0200-MI001-001
CE M18 0200	
Siemens AG, DE-76181 Karlsruhe Made in France	

SIEMENS			
SITRANS F M MAG 6000 CT/5100 W			
System Order No.:	7ME65206PB122MA1-Z	MAWP (PS) at 0.1°C/32°F	10bar/145psi
	P24	MAWP (PS) at 30°C/86°F	10bar/145psi
System Serial No.:	111202H168	T. media min.:	0.1°C/32°F
Size DN: 600 (24 inch.)	Lining: EPDM	T. media max.:	30°C/86°F
Sensor material:	ASTM A 105	Process connection:	EN 1092-1, PN10
Meter orientation:	Horizontal (H)	Year of Manuf.:	2018
Environmental Class:	E2.M1.IP67/NEMA 4X	SW/HW V.:	4.09 X02 / /
Fluid group	PED/L1	Q3: 2500m ³ /h	Q3/Q1: 40
Supply	115-230V AC 50-60Hz		
Certification No.:	DK-0200-MI001-001	CE M18 0200	
Siemens AG, DE-76181 Karlsruhe			
Made in France			

DECLARATIE DE CONFORMITATE CE

Nr. 553-0159

Noi, **EATON ELECTRIC SRL**

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

ca reprezentant unic în România al producătorilor din grupul Eaton,
în baza declarațiilor de conformitate emise de acestia,

declaram pe propria răspundere ca produsele (familia):

Eaton - Combined MCB/RCD

PFL-...

(declarația de conformitate se aplică pentru toate tipurile enumerate în catalogul nostru actual de produse)

sunt realizate în conformitate cu buna practică inginerască în materie de siguranță în vigoare în Uniunea Europeană, nu pun în pericol viața, sănătatea, securitatea persoanelor și a animalelor domestice, nu produc un impact negativ asupra mediului, cu condiția instalării și întreținerii în mod corespunzător, utilizării în scopul pentru care au fost create, respectării instrucțiunilor producătorului, standardelor specifice și a "bunelor practici ingineresti", și sunt conforme cu:

prevederile directivelor Uniunii Europene:

Low Voltage Directive 2014/35/EU

EMC Directive 2014/30/EU

RoHS Directive 2011/65/EU

și cu standardele Europene armonizate :

EN61009-1/04 + A11/08 + A12/09 + A13/09 + A14/12, EN61009-2-1/94 + A11/98



Bucuresti, Romania

20.04.2016

Razvan Sorescu

Quality, Environment,
Health & Safety
responsible

Gabriel Tache
Country Manager

Data de aplicare a marcajului CE: 2002

Nr. document: 553-0159 / 20.04.2016

EU-Type Examination Certificate Measuring Instrument Directive

Certificate number: DK-0200-MI001-011

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

In accordance with Directive 2014/32/EU of the European Parliament and Council of February 26, 2014 on measuring instruments (MID).

Issued to: **Siemens AG**
DE-76181, Karlsruhe
Germany

Type of instrument: Cold water meter, electromagnetic flow meter

Type designation: MAG5100W DN50-300 and MAG3100 DN350-600 with MAG8000CT

Valid until: February 28, 2030

Number of pages: 8, including appendix

Date of issue: March 1, 2020

Version: 15

This version of DK-0200-MI001-011 is issued due to retest of the meter according to OIML R 49:2013 and it replaces all previous versions.

Approved by



Lars Poder
Certification Manager

Processed by



Nikki Christoffersen
Examiner

The report is only valid with digital signature from FORCE Certification. The original version of the report is archived in FORCE Certifications database and is sent in electronic duplicate to the customer. The stored version of the report at FORCE Certification prevails as documentation for its contents and validity.

The conformity markings may only be affixed to the above type approved equipment. The manufacturer's EU-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.

This EU-type examination certificate may not be reproduced except in full, without written permission by FORCE Certification A/S.

FORCE Certification references: TASK no.: 119-37413.01 and ID no.: 0200-MID-08119

Appendix to

EU-Type Examination Certificate

Measuring Instrument Directive

Number: DK-0200-MI001-011

Issued by FORCE Certification A/S, Denmark

EU-notified body number 0200

Revision	Date of issue	Changes
DK-0200-MI001-011	2009-10-13	Original certificate
DK-0200-MI001-011 rev 1 – 2010	2010-01-21	Text regarding bi-directional use of meter added
DK-0200-MI001-011 rev 2 – 2011	2011-03-18	New meter sizes DN200 and 400 added
DK-0200-MI001-011 rev 3 – 2011	2011-10-13	New SW version added
DK-0200-MI001-011 rev 4 – 2011	2011-12-16	New installation requirements added
DK-0200-MI001-011 rev 1 – 2012	2012-12-17	New transmitter MAG8000CT GSM added
DK-0200-MI001-011 rev 1 – 2014	2014-03-21	New meter sizes DN450, 500 and 600 added
DK-0200-MI001-011 rev 1 – 2015	2015-05-22	New 'R' and 'Q' values for DN300, 350 and 400 added
DK-0200-MI001-011 rev2 – 2015	2015-07-20	New SW and HW versions added
DK-0200-MI001-011 ver 9	2017-04-07	New SW version added
DK-0200-MI001-011 ver 10	2018-03-15	New postal address added
DK-0200-MI001-011 ver 11	2018-08-01	New SW version added
DK-0200-MI001-011 ver 12	2018-11-26	Minor editorial changes related to type designation
DK-0200-MI001-011 ver 13	2019-09-11	Administrative extension of the validity period
DK-0200-MI001-011 ver 14	2019-11-26	Administrative extension of the validity period
DK-0200-MI001-011 ver 15	2020-03-01	Meter re-tested according to OIML R 49:2013 and now valid for a new 10-year period

Applied standards and documents:

OIML R 49:2013

WELMEC Guide 7.2:2018

The instrument/measuring system shall correspond with the following specifications:

Type designation:

MAG5100W DN50-300 and MAG3100 DN350-600 with MAG8000CT

Description:

The construction consists of an electromagnetic flow sensor, MAG5100W or MAG3100, and a signal transmitter, MAG8000CT.

The design principle is, as for any electromagnetic 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 pass 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 is fitted with an electrically insulating lining, which is coned to optimize the velocity profile of the fluid. Coils generate the magnetic field.

The flow meter may be equipped with an optional wireless communication module.

Technical documentation:

Reference no.:

- 119-37413.01
- 119-22461
- 118-24331.05
- 118-24331.04
- 118-24331.03
- 118-24331.02
- 118-24331.01
- 117-25308.04
- 115-22122.03.01
- 114-23907.0003.0001
- 112-24266.0003

FORCE Certification A/S

File no.:

- 80.976-266/11
- 80.976-259/11
- 80.976-134/10
- 80.976-105/09

Technical data

Instrument tested according to	: OIML R 49:2013
Hardware version	: AD/015
Software version	: Version and checksum for metrological part

Version	Checksum for metrological part
3.09	9652AA52EA3CBEBF6EF93CB1AEFE6F11
3.10	0B34CA495A2C37ACF77BB49159619495
3.11	56F1DA791237270B49C54CD31754F91A

Verification tolerance	: $\pm 5\% Q_1 \leq Q < Q_2$ $\pm 2\% Q_2 \leq Q \leq Q_4$
Unit of measurement	: Cubic meters
Temperature	: T30 (0.1 – 30 °C)
Pressure	: PN = 16 bar or PN = 10 bar or PN = 6 bar
Power supply	: 3.6 V Lithium Battery, 12-24 VAC/VDC, 115-230 VAC
Compact/Remote	: Max. 30 m cable
Environment class	: E2, M1
Climatic class	: -25...55 °C, condensing, closed
Durability specification	: 10 years (battery 6 years)

The sensor has different dynamic ranges depending on the size and orientation (horizontal R315 and all orientations is R125).
For DN350 up to DN600 the dynamic range is R200.

SIZE	DN50 (2")	DN65 (2½")	DN80 (3")	DN100 (4")	DN125 (5")	DN150 (6")	DN200 (8")
"R" Q_3/Q_1	315/125	315/125	315/125	315/125	315/125	315/125	315/125
Q_1 [m ³ /h]	0.200 / 0.504	0.317 / 0.800	0.508 / 1.280	0.794 / 2.000	1.270 / 3.200	2.000 / 5.040	3.175 / 8.000
Q_2 [m ³ /h]	0.320 / 0.806	0.508 / 1.280	0.813 / 2.048	1.270 / 3.200	2.032 / 5.120	3.200 / 8.064	5.079 / 12.800
Q_3 [m ³ /h]	63	100	160	250	400	630	1000
Q_4 [m ³ /h]	78.75	125	200	312.5	500	787.5	1250

SIZE	DN250 (10")	DN300 (12")	DN350 (14")	DN400 (16")	DN450 (18")	DN500 (20")	DN600 (24")
"R" Q_3/Q_1	315/125	315/125	200	200	200	200	200
Q_1 [m ³ /h]	5.079 / 12.800	5.079 / 12.800	12.500	20.000	20.000	31.500	31.500
Q_2 [m ³ /h]	8.127 / 20.480	8.127 / 20.480	20.000	32.000	32.000	50.400	50.400
Q_3 [m ³ /h]	1600	1600	2500	4000	4000	6300	6300
Q_4 [m ³ /h]	2000	2000	3125	5000	5000	7875	7875

The tables above show the sensor variants that have been approved based on the type approval tests performed.

Other sensor variants are also covered by this approval provided the following is fulfilled:

- "R" (Q_3/Q_1) shall not exceed the values in the tables and shall be chosen from OIML R 49-1:2013 list 4.1.4
- Q_3 shall not exceed the values in the tables and shall be chosen from OIML R 49-1:2013 list 4.1.3
- Q_1 shall be larger than the values in the tables
- Q_2 shall be larger than the values in the tables

Verification

Errors: Maximum permissible errors according to Directive 2014/32/EU of the European Parliament and Council of February 26, 2014 on measuring instruments (MID), Annex III (MI-001)

Procedure: Test points and verification requirements according to OIML R49:2013

The water temperature range shall be 20 ± 10 °C

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

$$Q_1 \leq Q \leq 1.1 \cdot Q_1 \text{ (5\%)}$$

$$Q_2 \leq Q \leq 1.1 \cdot Q_2 \text{ (2\%)}$$

$$0.9 \cdot Q_3 \leq Q \leq Q_3 \text{ (2\%)}$$

Sealing

Write protection of parameters.

The system has four levels of write-protection of parameters: software, hardware, double, and full protections.

Software: As default, all registers in the database are protected by a user access code (software code). The user access code shall be given to the system before changing registers. This protection covers all application relevant parameters that do not meet the restriction described by other protections.

Hardware: HW-lock protected registers are only changeable when the physical seal is broken and the HW-key is mounted. And when the seal is broken, then the software access code will be unnecessary, that is, software and hardware protected registers are all accessible. This protection covers legal parameters and values that make influence on the measurement while installed as a custody transfer application.

Double: Some parameters identify the variety of meters. These are not hard coded and must therefore be secured in another way. The registers are protected with the HW-lock and a special access code known by Siemens production only. This protection covers parameters describing functionality used for variant creation and factory information identifying the product. It also covers internal variables that need to be saved and are not relevant to the user. Or information that must be read-only, but are updated by the device.

Full: Full protection against external access is only possible to measurement values (RAM values) and values controlled by the data administration software (checksum and change status). These registers are all read only. Full protection cannot be broken.

Internal sealing

The internal sealing is carried out as shown where the front and back shielding plate is locked using two labels:



Furthermore, the JTAG connector is sealed with an additional label:



External sealing

The external sealing is carried out as shown with a tread and seal via the sealing bolt.



Installation

DN50 – DN300: The product requires 0xD of straight pipe upstream from the sensor and 0xD of straight pipe downstream from the sensor.
The sensor can be installed in all orientations.

DN350 - DN600: The product requires 3xD of straight pipe upstream from the sensor and 3xD of straight pipe downstream from the sensor.
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 and inscriptions

- Unit of measurements: Cubic metre
- Numerical value of Q₃ and the ratio Q₃/ Q₁
- EU-Type examination certificate number
- Manufacturer (Name and address), type
- Year of manufacture
- Serial number
- Direction of flow
- Pmax and Tmax
- Installation requirements
- Power supply
- Environmental class

Label example

SIEMENS			
SITRANS F M MAG 8000 CT			
Order No.:	7ME68203TC041AA1	MAWP (PS) at 0.1°C/32°F:	16 bar/232psi
Serial No.:	123456H123	MAWP (PS) at 50°C/122°F:	16 bar/232psi
Size DN: 100 (4 inch.)	Lining: EPDM	Tmedia min.:	0.1C/32°F
Sensor material:	ASTM A 105	Tmedia max.:	50°C/122°F
Meter orientation:	All orientations	Process connection:	EN 1092-1 PN16
Environmental class:	E2,M1 IP68/NEMA 6P	Year of Manuf.:	2019
Fluid group: PED/L1	Cal Factor. : 0.859242	SW/HW V. :	3.11/15
Supply:	3.6V lithium battery inside	Q3: 100 m³/h	Q3/Q1: 40
Certification No.:	DK-0200-MI001-011		Tamb. -25°C to + 55°C
	U0D0	 	0200
Siemens AG, DE-76181 Karlsruhe			
Made in France			

Informative Annex

Other functions not subject to Measuring Instrument Directive:

- Class 1 for DN50 and DN350-600

SIZE	DN50 (10")	DN350 (14")	DN400 (16")	DN450 (18")	DN500 (20")	DN600 (24")
"R" Q ₃ /Q ₄	200	125	125	125	125	125
Q ₁ [m ³ /h]	0.315	20.000	32.000	32.000	50.400	50.400
Q ₂ [m ³ /h]	0.504	32.00	51.200	51.200	80.640	80.640
Q ₃ [m ³ /h]	63	2500	4000	4000	6300	6300
Q ₄ [m ³ /h]	78.75	3125	5000	5000	7875	7875

- Also tested T50 according to OIML R49:2013

UTILIZARE AUTORIZATA EXCLUSIV PENTRU PROIECTUL:
 ALIMENTARE CU APA DIN SATUL CAJBA,
 RAIONUL GLODENI, REPUBLICA MOLDOVA"

DECLARATIE DE CONFORMITATE CE

Nr. 449-0002

Noi, **EATON ELECTRIC SRL**

cu sediul în București, sos. București – Ploiești nr. 42-44,
Baneasa Business & Technology Park, clădirea B2, et.3, sector 1, 013696

ca reprezentant unic în România al producătorilor din grupul Eaton,
în baza declarațiilor de conformitate emise de aceștia,

declaram pe propria răspundere ca produsele (familia):

Motor Protective Circuit Breaker

PKZM0...

(declarația de conformitate se aplică pentru toate tipurile enumerate în catalogul nostru actual de produse)

sunt realizate în conformitate cu buna practică inginerască în materie de siguranță în vigoare în Uniunea Europeană, nu pun în pericol viața, sănătatea, securitatea persoanelor și a animalelor domestice, nu produc un impact negativ asupra mediului, cu condiția instalării și întreținerii în mod corespunzător, utilizării în scopul pentru care au fost create, respectării instrucțiunilor producătorului, standardelor specifice și a "bunelor practici ingineresti", și sunt conforme cu:

prevederile directivelor Uniunii Europene:

Low Voltage Directive 2014/35/EU

EMC Directive 2014/30/EU

ATEX Directive 2014/34/EU

RoHS Directive 2011/65/EU

și cu standardele Europene armonizate :

EN 50581:2012, EN 60947-2:2006 + A1:2009 + A2:2013, EN 60947-4-1:2010 +
A1:2012, EN 60947-5-1:2004 + A1:2009 + AC:2005



București, România

16.07.2019

Razvan Sorescu

Quality, Environment,
Health & Safety
responsible

Gabriel Tache
Country Manager

Data de aplicare a marcajului CE:

Nr. document: 449-0002 / 16.07.2019