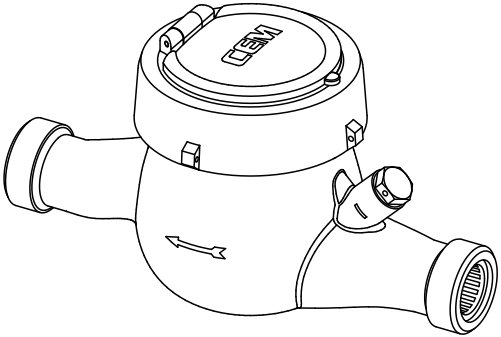
USER GUIDE



WATER METER
STD / Pulse / RF / Mbus

METROLOGICAL SPECIFICATION

Mechanism Type		Dry Type Vacuumed				Wet Type With Glisserine
Working Priciple		Multijet		Singlejet	Volumetric	Multijet
Meter Model		KDM Series Cold Water Meters	KS Series Hot Water Meters	KT Series Hot and Cold Water Meters	VD Series Cold Water Meters	ÇYT Series Cold Water Meters
Nominal Diameter	DN	15, 20, 25, 32,40,50		15, 20	15, 20	20
	inch	1/2", 3/4", 1", 11/4", 11/2", 2"		1/2" , 3/4"	1/2" , 3/4"	3/4"
Meter Lenght	mm	110,130,165,190,260,300,350		80, 110, 130, 190	165, 190	110 - 190
Temp. Class (T)	°C	50	90	30, 50, 70, 90	30 - 50	50
Nominal Flow (Q3)	m³/h	2,5 - 4 - 6,3 - 10 - 16 - 25		1,6 - 2,5 - 4	2,5	2,5
Sensitivity Class (R)	Q3/Q1	R100 , R125 , R160		R80, R100, R160 (H) R40, R50 (V)	R160, R200, R250 R315, R400	R80, R100, R160
Maximum Flow (Q4)	m³/h	3,12 - 5 - 7,8 - 12,5 - 20 - 31,2		2 - 3,12 - 5	2,5	3,12
Transient Flow (Q2)	m³/h	0,025 ila 0,4		0,025 ila 0,08	0,025 ila 0,01	0,025 ila 0,052
Minimum Flow (Q1)	m³/h	0,015 ila 0,25 arası		0,016 - 0,05	0,0156 ila 0,0063	0,016 ila 0,03
Thread Size	inch	3/4", 1", 11/4", 11/2", 2"		3/4" , 1"	3/4" , 1"	3/4"
Connection Direction	H,V	Horizontal (H)		Horizontal (H) , Vertical (V)	All Directions	Horizontal (H)

ELECTRONIC SPECIFICATION

Mbus Communication

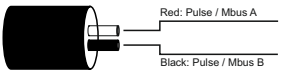
- All Mbus converter can work with modules.
- Direct accessibility to storaged data via open M-Bus protocol.
- The modules has primary and secondary addresses. Default primary address is “000" , secondary address is same serial number with written on module cover.
- Maximum Mbus wire voltage can not be more than 36 Vdc and can not be lower than 24 Vdc voltage level. Maximum voltage difference limit is 12 Vdc between two wire. Otherwise modules can not readable.
- Maximum Mbus line distance ; quantity of meters in line, baudrat effects with breakdown voltage in line.
- Mbus wiring types:

Pulse Communication

- Dry contact output can be easliy contact all pulse input devices.
- Relay type dry contact.
- Maximum current is 200 mA.

- Can not damage cables between converter and modules.
- Communication cables between converter and modules must be multi line ,multi core and crossection can not be less than 0,75 mm² .
- Avoid to long term short circuit and high voltage, it can damage electronic circuit and can not work.
- Communication cables need to use far from energy, camera and other cables on the building for avoid noise on the line.
- The cables protection wire must be grounded.

Pulse / Mbus Wiring Diagram



GENERAL SPECIFICATION

Water meters produced for use to measure, record and display pure drinkable water consumption.
Meters had different categories based on measuring method and mechanism (multijet/singlejet, dry/wet mechanism) also sensitivities (R100/R125/R160...etc.).

Although water consumption of the standart water meters can easily read by eye, optionally compatible versions can read electronic systems.

All water meters produced to work long lifetime under the environmental conditions explained in related standarts. If the meters use over conditions explained in standart mechanism stoppage or water leakage can be occur.

You must follow the instruction written in this document for use without to losing performance of water meters long time. Otherwise damaging or not proper working is out of warranty.

MECHANISM SPECIFICATION

- Vacuumed register group in the dry type mechanism
- Glisserined register group in the wet type mechanism
- Resistive threated brass body againist to corrosion
- Resistive flanged GG25 casted lower body againist to corrosion
- Meter bodies coated with electrostatic paiting
- Protection for mangetic interference with anti-magnetic ring
- All parts suitable to contact with drinkable water
- The lid can open 180° and turn 360° to easy read
- 99999 m^3 or 9999 m^3 record capacity
- Long lifetime with sapphire stone bearings
- Optionally compatible for Pulse, Mbus ve Wireless Mbus reading
- Based on the models multijet, singlejet and volumetric measurement unit

TRANSPORTATION & SHIPPING

- While transportation or shipping of meters do not hit ,shake too much and keep inside the original package untili assembling.
- Protect the package from rain and too much humidity. Wet packages can be deform easily and the meters can drop, take damage or hurt someone.
- As possible as meter need to transport or ship on pallets.

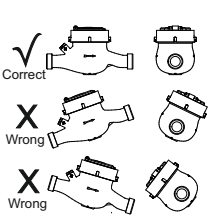
ASSEMBLING

- Meters must be selected by area of usage.
- Meter assembling person to the pipeline must be expert.
- When the meter assembling must be consider and check temperature class, pressure class and nominal flow.
- The assembling location environmental must be protected by humidity, dust, water, mud..etc.
- Selecting of the assembling location of the meter must be consider leakage condition and to not close electricity, gas and dangerous places for people.
- Before assembling the pipeline must clean from cement, stone, teflon, band ... etc.
- When the meter assembling the pipeline water meter body flow arrow and pipeline water flow direction must be same.
- When the meter assembling the pipeline water meter DN size arrow and pipeline DN size must be same.
- When the meter assembling to pipeline couplings must be use, L albow or additional filter must not use.
- The meter must be assemble far from the pumps in the pipeline.
- The meter must not assemble flexible pipeline.
- The meter must not assemble pipeline if water flow increase and decrease immediately. That stuation cause wrong calculation.
- If the meter had non-return valve, the valve need 0.5 bar differences to work properly.
- During the assembling meters can not hold with wrench for tightening, only hold couplings.
- The Meter orientation must be same with as shown in document.
- During the assembling following standarts must be considered ;

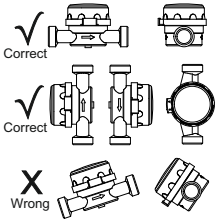
  TS EN 14154-2 Water meters - Chapter 2: Connecting the pipelines and usage

  TS EN ISO 4064-5 Water meters for cold and hot drikable water - Chapter 5: Setup requirements.

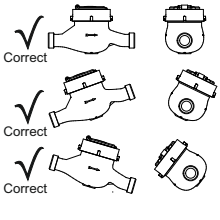
PIPE CONNECTION



Connection for
Horizontal (H) Meters



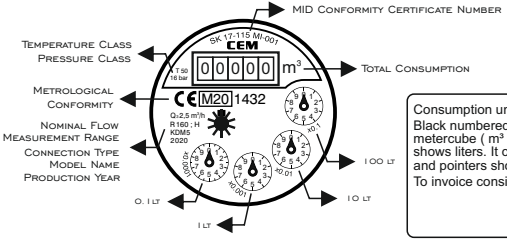
Connection for
Horizontal (H) and Vertical (V) Meters



Connection for
All direction Meters

- After connection meter is ready to use no need to do extra things to work. When the water pass through inside of the meter automatically meter start to work.

USAGE



Consumption unit is metercube (m³) on dial.
Black numbered drums in consumption section are shows metercube (m³), red numbered drums or pointers are shows liters. It can be change by model but all red drums and pointers shows liters.
To invoice consider only metercube (m³) consumption.

REPAIR & MAINTENANCE

- Meters periodically check in 10 years if there is not any problems
- Periodic check must be done by official companies.
- Please check related directive date 24.07.1994 of periodic check and law number 22000 published in official goverment newspaper "ÖLÇÜ VE ÖLÇÜ ALETLERİ MUAYENE YÖNETMELİĞİ".
- Only water supply companies give permission to disassembling of the meters.
- The seal on the watermeter must not cut by customer.
- After disassembling of the water meter from the pipeline the filter must be clean.
- Always keep close the lid after read the meters.

COMMON MISTAKES

- Making a fire under the meters to prevent freezing in the cold whether conditions
- Burying half of the meters into the land or cement
- When assembling holding the meters body with wrench and damaging the body
- Using the meter with over the temperature class
- Using the meters with other liquids (milk, oil... etc)
- Using the meters after water outage with muddy water
- Using too much teflon when assembling and first start going inside of the meters
- Disassembling of the seal to cleaning purpose of the meters

WARRANTY CONDITIONS

1) Warranty term starts from shipping date of the product to 2 years.
2) All parts of the product under warranty.
3) If the customer find a defect on the product, based on the 6502 numbered law which is Protection of the Customer Rights 11 section

a- Renege on a contract,
b- Discount from sales price,
c- Free repairment,
d- Changing of the product with new one

one of that rights can be use.
4) If the customer select free repairment right ,producer accepted without demading any of manpower costs, cost of the replaced parts or another costs, repairment of the products will be free of charge. The customer can use that right to producer or importer vendor is severally responsible for customer's rights usage.
5) After the customer select free repairment right;

- If the product breakdown again inside in the warranty term.
- Exceed the repair day of the product,
- If there is a report from authorized service, vendor, producer or importer about no possibilities to repair, authorized service, vendor, producer or importer customer can wants moneyback, discount based on defect or changing with new one. Vendor can not reject this demand. If that demand inobservance vendor producer, importer are severally responsible for that situation.

6) Maximum repair day of the product is 20 day. Inside of the warranty term repairment time start when the customer inform date of the product defect to authorised service or vendor, out of the waranty term it start delivery date of the product to authorised service or vendor. If the repairment can not complete within 20 days, producer or trader need to give product had same specification to customer until repariment finished. If the product breakdown inside warranty term, the repairment days add warrant term.
7) If the customer use the product without follow the user guide, product will be out of warranty.
8) If any doubt to proceed customer rights had from warranty conditions, customer can apply the Customer Court or Customer Arbitration Committe where the sales did or producer plant.
9) If this Warranty Sheet can not share with the customer, customer can apply Protection of the Customer and Market Inspeciton General Directorate connected with Ministry of Commerce.

Producer

Company : Yavuz Metal Sanayi ve Ticaret A.Ş.

Address : Arsin Organize Sanayi Bölgesi 2.Cadde No:4
Arsin/TRABZON

Company Executive :

YAVUZ METAL
SANAYİ VE TİCARET A.Ş.
Organize Sanayi Bölgesi 2.Cd No:4 ARSİN / TRABZON
Tel : 0462 711 20 33 / 34 Fax : 0462 711 20 35
Hızırbey V.D. 362 065 4764 Tic.Sicil.No:8488
Mersis No : 094 200 547 640 0012

E-mail : info@cemsusayaclari.com
Phone : (462) 711 20 33/34
Fax : (462) 711 20 35

Product

Brand	: CEM
Type	: Water Meter
Model	: KDM5
Garanti Term	: 2 year
Min Repair Day	: 20 working day

Vendor

Company :
Address:

Phone :
Fax :
E-mail :

Company Executive :

Stamp / Sign

Invoice Date :
Invoice No :

Above informations must be filled when the customer receive the product from vendor.

This documentation usage allowed by based on the 4077 About to Protection of Customer Rights and publishing with Warranty Sheet Applications Directives based on T.C. Custom and Ministry of Commerce Protection of Customer Rights and Market Surveliance General Directorate.

SU SAYACI AB UYGUNLUK BEYANI
WATER METER EU DECLARATION CONFORMITY

No
Ürün Üzerindedir

ÜRETİCİ *(Manufacturer)* : **YAVUZ METAL SANAYİ VE TİCARET A.Ş.**
ADRES *(Address)* : Organize Sanayi Bölgesi 2.Cad No:4 Arsin / TRABZON
FABRİKA ADRESİ *(Factory Address)* : Organize Sanayi Bölgesi 2.Cad No:4 Arsin / TRABZON
TELEFON *(Phone)* : +90 462 711 20 33
WEB

Bu uygunluk beyanı imalatçının sorumluluğu altında düzenlenmiştir. Üretici firma olarak , bu belgede belirtilen ürünlerimizin , Avrupa Konseyi Direktifi olan 2014 / 32 / AB sayılı Ölçü Aletleri Yönetmeliği'ne (Karar No 768 / 2008 / EC Ek:III) uygun olduğunu beyan ederiz.

This declaration of conformity is issued under the responsibility of the manufacturer. We, the manufacturer, herewith declare that this stated device conforms to the Council Directive 2014/32/EC Measuring Instrument Directive (Annex III of Decision 768/2008/EC).

Ürün Adı *Product name*	**Model** *Type*	**Seri Numarası / Aralığı / Adet** *Serial Numbers / Range / Piece*
Su Sayacı	Ürün Üzerindedir	Ürün Üzerindedir

Ürün; aşağıda belirtilen Avrupa Direktifleri, Standartları ve Rehber Dokümanlarına uygundur.
Product; in accordance it follows the European Directive is with Standards and Guidance Documents.

Referans Numarası *(Reference Num.)*	**Başlık**	**Title**
2014/32/EU - 2014/32/AB	Ölçü Aletleri Yönetmeliği	Measuring Instrument Directive
OIML R 49-1	Soğuk içme suyu ve sıcak su için su sayaçları - Bölüm 1: Metroloji ve Temel Gereksinimler	Water meters intended for the metering of cold potable water Part 1: Metrological and technical requirements
OIML R 49-2	Soğuk içme suyu ve sıcak su için su sayaçları - Bölüm 2: Deney Metodları	Water meters intended for the metering of cold potable water Part 2: Test methods
EN 14154-1	Su Sayaçları - Bölüm 1: Genel Özellikler	Water meters - Part 1: General requirements
EN 14154-2	Su Sayaçları - Bölüm 2: Tesisata Yerleştirme ve Kullanım Şartları	Water meters - Part 2 : Installation and conditions of use
EN 14154-3	Su Sayaçları - Bölüm 3: Deney Metotları veTeçhizatı	Water meters - Part 3 : Test methods and equipment
WELMEC 8.6	2004/22/AT sayılı Ölçü Aletleri Yönetmeliği, Modül D ve H1 ile üretim yapanların EN ISO 9001:2000 Onaylı Kalite Sistemi tavsiyeleri.	Measuring Instruments Directive 2004/22/EC, Presumption of Conformity of the Quality System of Manufacturers with Module D or H 1 when EN ISO 9001:2000 is applied
AT (AB) Tip İnceleme Sertifika Numarası *EC (EU) Type-examination Certificate number*	Aşağıdaki tabloda belirtilmiştir	Are table shown below
D Modülü Uygunluk değerlendirme Kuruluşu *Conformity Assessment body for D Module*	SLM, SLOVAK YASAL METROLOJİ SK 12-034 D	SLM , SLOVAK LEGAL METROLOGY / SK 12-034 D
D Modülü Numarası *Number of Module D*		
Onaylanmış Kuruluş Numarası *Notified Body Identification Number*	1432	1432

Model *Type*	**AT Tip İnceleme Sertifika Numarası** *EC Type-examination Certificate number*	**Uygunluk Değerlendirmesini Yapan Kurumun Adı ve No'su** *Notified Body Identification Name and Number*
KD1 M3, KD3, KD5, KD7	SK10-039 MI-001	**SLOVAK YASAL METROLOJI ENSTITÜSÜ** *SLOVAK LEGAL METROLOGY SLM* **1432**
KD3M3, KD3M6, KD3M7, KD3M8	SK10-042 MI-001	
ÇYT3	SK10-040 MI-001	
KD8	SK10-043 MI-001	
ÇYT1, ÇYT2, ÇYT5, ÇYT6	SK11-061 MI-001	
KD3M1, KD3M4	SK11-062 MI-001	
VD3, VD4	SK10-059 MI-001	
KD3 M5	SK10-060 MI-001	
KD1	SK14-091 MI-001	
KS3	SK14-096 MI-001	
KDM Serisi / Series (KDM1...KDM12)	SK17-115 MI-001	
KS Serisi / Series (KS1...KS12)	SK17-119 MI-001	
KT Serisi / Series (KT1...KT8)	SK17-118 MI-001	
KT Serisi / Series (KT11-18)	SK18-121 MI-001	
VD Serisi / Series (VD2, VD5, VD13, VD14)	SK19-123 MI-001	

Üretim Yeri *Place*
TRABZON / TÜRKİYE

Tarih *Date*
02.01.2019

Yavuz Metal Adına İmza *Signed by the authority of Yavuz Metal*
Emre KESKİN
Genel Müdür
General Manager