

Engelmann

PRODUCT MANUAL



SMARTEST METERING TECHNOLOGY

WATER METER

Engelmann

GERMANY (HEADQUARTERS)

Engelmann Sensor GmbH
Rudolf-Diesel-Str.24-28,D-69168 Wiesloch-Baiertal
TEL:+49 (0) 6222-9800-0
FAX:+49 (0) 6222-9800-50
WEB:www.engelmann.de

China

Engelmann Metering (Xuzhou) Co., Ltd.
No. 6, Zone A, Suicheng Industrial Concentration Zone, Qingnian East Road,
Suining County, Xuzhou City, Jiangsu Province, 221200
TEL:+86-516-8821 1122
FAX:+86-516-8821 1122
WEB:www.engelmann.com.cn

BEIJING OFFICE

Room 2021, Floor 2, Strait International Building, Building 1, Yard 30,
Sanlihe East Road, Xicheng District, Beijing
TEL:+86-010-5338 5705

The specifications, technical parameters, indicators, and dimensions of the products introduced in this sample are subject to update without prior notice, and the actual product shall prevail.



Since
1976

UNSERE DEVISE

IMMER NAH AM KUNDEN – ZUVERLÄSSIG
UND SERVICESTARK

COMPANY PROFILE



Engelmann Sensor GmbH, founded in 1976 and headquartered in Westloch, Germany, is a well-known manufacturer of energy and flow instruments worldwide and a leader in the field of measurement. Since its establishment, Enleman has always been committed to the research and production of measuring instruments. In order to meet the needs of customers and the market, the company invests 5% of its annual revenue in the research and development and improvement of products. Enleman has over 40 years of experience in measuring instruments, and is renowned for designing and producing high-precision and highly reliable

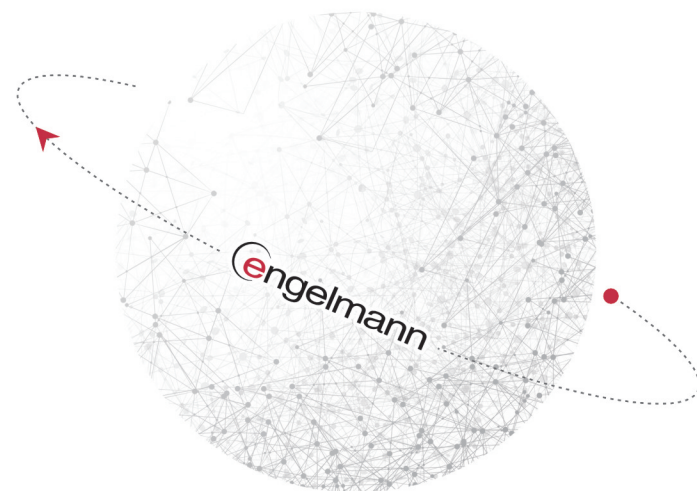
measuring instruments with high-quality standards. Having an absolute market share in Europe, it is a leading company in the field of measurement instruments in the European region, with energy instruments accounting for 25% of the market share.

In 2005, Enleman entered China and began serving the Chinese market. With the growth of user demand, in order to provide more professional services, Germany's Enlehmman Sensor Co., Ltd. established its first wholly-owned subsidiary in Beijing in 2006, tailoring solutions based on different customer measurement needs, providing customers with

various product related services and technical support. After years of effort, our products cover China and assist the government and users in continuously optimizing energy consumption.

In order to promote the process of product localization, Germany's ENLEMAN Sensors Co., Ltd. established an advanced instrument manufacturing factory -

ENLEMAN Instruments (Xuzhou) Co., Ltd. in early 2013, with independent production and testing capabilities for a full range of measuring products. It is a production and sales center in China. Enleman is serving new and old customers with a brand new look, providing high-quality products and solutions, and contributing to China's metrology, energy conservation and environmental protection industry.



UNSERE DEVISE

IMMER NAH AM KUNDEN – ZUVERLÄSSIG UND SERVICESTARK

● HEADQUARTERS/PRODUCTION BASE ● SALES AREA ● SUBSIDIARY/PRODUCTION BASE

GERMANY

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SensoStar[®]
EM6141
 IOT INTELLIGENT REMOTE
WATER METER
 (OPTIONAL VALVE CONTROL)



PRODUCT FEATURES

- The communication module and base meter are installed separately, with good flexibility
- Adopting new NB-IoT data transmission technology, with wide network coverage and stable, reliable signals
- Anti-strong magnetic interference, suitable for use in complex situations
- Report multiple data such as cumulative flow, instantaneous flow, reverse flow, flow alarm, etc. according to the different users' requirements, providing strong data support for intelligent water and DMA zoning measurement
- Remote reading: Periodically and regularly report and actively read readings
- Warning system: Alarm prompts such as battery undervoltage, abnormal metering, pre-order quantity, and prepaid usage reaching the limit value
- Large capacity storage: up to 24 months with monthly frozen data
- Ultra Long Life Battery: Battery power supply guarantees 6 years of use without replacement
- Flexible upload frequency: The data upload cycle can be set to meet different user management needs
- Providing both PC and mobile devices data management
- Optional IoT remote valve-controlled water meter: remote opening and closing of valves

TECHNICAL PARAMETER

Unit of measurement	m ³	Electromagnetic Environment Class	E1
R-value	80-160	Working Voltage	DC3.6V
Accuracy Class	level 2	Rated battery life	≥8 years
ambient temperature	-25~55°C	Protection Class	IP68
Medium temperature	0~50°C	Communication Method	NB-IoT
relative humidity	10-95%	Pressure Class	10MPa
Pressure loss Class	△p63	Data Storage	Write more than 1 million times and unlimited read and write times; Data can be saved for 40 years after power outage
Environmental Class	level B		



➔ The product complies with the national standard of the National Standards of the People's Republic of China GB/T7782018/ISO40641:2014

➔ The product complies with the industrial standard of urban construction of the China "Internet of Things Water Meter" CJ/T535-2018

➔ The product complies with the group standard of China Metrology Association, Technical Guide for the Field Installation, Acceptance and Use of NB-IoT Water Meter Automatic meter reading System/T/CMA SB 0402019

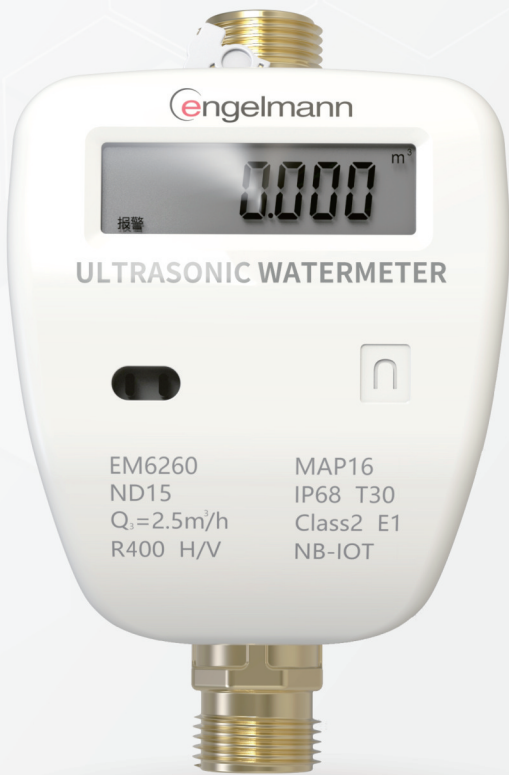
SensoStar[®]

EM6250

COMPACT ULTRASONIC

WATER METER

(OPTIONAL VALVE CONTROL)



PRODUCT FEATURES

- Diameter: DN15-DN25
 - Pressure Class: 16MPa
 - Maximum pressure loss: 0.025MPa
 - Temperature measurement: 0~50°C
 - Operating temperature: -20~55°C
 - Protection Class: IP68
- Pipe section material: copper
 - Rvalue: 125, 160, 200, 250, 400
 - Communication method: optional M-bus, RS485, NB IoT
 - Optional ultrasonic valve controlled water meter: remote valve opening and closing

TECHNICAL PARAMETER

➡ Taking the range ratio R400 as an example in the table

Model	Nominal diameter	Common traffic	Boundary flow	Minimum flow rate	Initial flow rate	Flow sensor interface size		Flow sensor interface size			Meter Length
	DN(mm)	Q ₃ (m³/h)	Q ₂ (m³/h)	Q ₁ (m³/h)	(m³/h)	Thread Length	Interface thread	Extension degree	Thread length	Thread specification	(mm)
DN15	15	2.5	0.01	0.006	0.003	10	G ^{3/4} B	43	15	R ^{1/2}	165
DN20	20	4	0.016	0.01	0.004	12	G1B	50	16	R ^{3/4}	195
DN25	25	6.3	0.025	0.016	0.005	12	G1 ^{1/4} B	58	18	R1	225



- Excellent low flow performance can effectively reduce losses
- Supports wireless and wired communication
- Horizontal or vertical installation is available
- IP68 PROTECTION CLASS
- Meet domestic and international drinking water standards
- Intelligent alarm
- The valve has passed 10000 opening and closing tests
- Up to 4 high-speed measurements per second
- High range ratio
- Reversible metering
- Low straight pipe section
- Support on-site reading of infrared handheld devices
- The entire meter has a service life of more than 10 years
- Support for remote control of valves

SensoStar[®]
EM6270 *SMALL ULTRASONIC WATER METER*



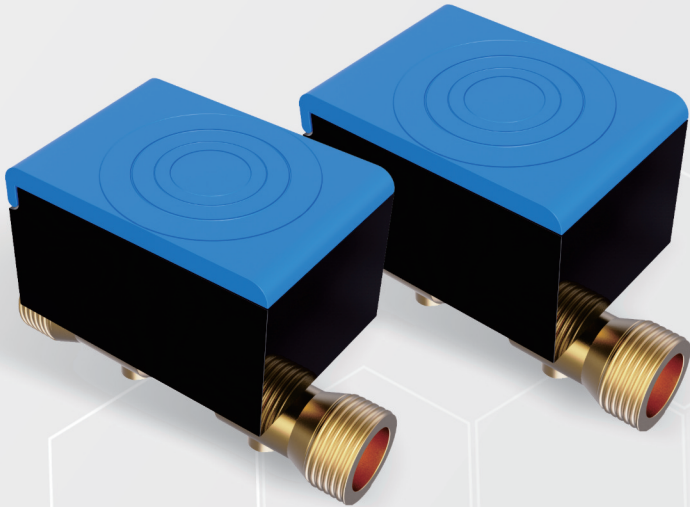
PRODUCT FEATURES

- Diameter: DN15-DN40
- Pressure rating: 16MPa
- Maximum pressure loss: 0.025MPa
- Temperature measurement range: 0-50 °C
- Operating temperature: -20~55 °C
- Protection level: IP68
- Pipe section material: copper
- R value: 125-400
- Countable reverse flow
- Communication method: optional M-bus, RS485, 4G, NB IoT

TECHNICAL PARAMETER

➡ Taking the range ratio R400 as an example in the table

Model	Nominal diameter	Common traffic	Boundary flow	Minimum flow rate	Initial flow rate	Flow sensor interface size		Flow sensor interface size			Meter body length
	DN(mm)	Q _s (m ³ /h)	Q ₂ (m ³ /h)	Q ₁ (m ³ /h)	(m ³ /h)	Thread length (mm)	Interface thread	Extension degree	Thread	thread specification	(mm)
DN15	15	2.5	0.01	0.006	0.003	10	G ^{3/4} B	43	15	R ^{1/2}	165
DN20	20	4	0.016	0.01	0.004	12	G1B	50	16	R ^{3/4}	195
DN25	25	6.3	0.025	0.016	0.005	12	G1 ^{1/4} B	58	18	R1	225
DN32	32	10	0.04	0.025	0.012	13	G1 ^{1/2} B	58	20	R1 ^{1/4}	180
DN40	40	16	0.064	0.04	0.02	13	G2B	59	22	R1 ^{1/2}	200



Excellent low traffic performance
Can effectively reduce losses

Supports wireless and wired

Installation at any angle

IP68 PROTECTION CLASS

drinking water standards

Intelligent alarm

Up to 4 high-speed measurements per second

High rang ratio

Reversible metering

Low straight pipe section requirements

Support on-site reading of infrared handheld devices

The entire meter has a service life of more than 10 years

SensoStar[®]
EM6300 **LARGE ULTRASONIC WATER METER**



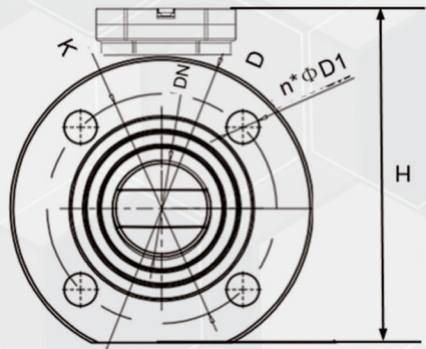
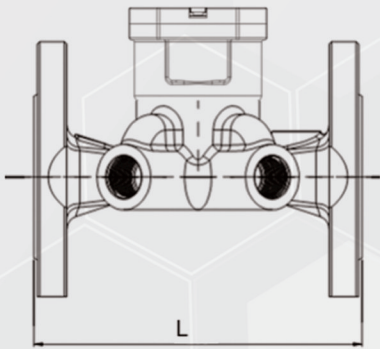
PRODUCT FEATURES

- High precision dual channel design, precise and stable measurement
- R value (R250/R400), which can be used for water leakage detection
- IP68 design
- Support multiple fault alarms
- Redundant calculation, if one channel is abnormal, the normal measurement of the entire meter will not be affected
- It can measure flow and pressure in one time to meet the monitoring needs of water supply network
- Equipped with professional infrared meter reading interface, M-bus interface, and wireless interface(NB IoT technology), RS485 interface, capable of remote data transmission and management
- Low power consumption, battery powered, with a lifespan of over 10 years
- It can be installed horizontally and vertically, making construction convenient
- The watch body can be made of stainless steel material

TECHNICAL PARAMETER

➡ Taking the range ratio R400 as an example in the table

Mode	Nominal diameter	Minimum flow	Boundary flow	Nominal flow	Low flow threshold
	DN(mm)	Q ₁ (m ³ /h)	Q ₂ (m ³ /h)	Q ₃ (m ³ /h)	Q _{start} (m ³ /h)
DN50	50	0.063	0.100	25	0.015
DN65	65	0.100	0.160	40	0.027
DN80	80	0.157	0.252	63	0.035
DN100	100	0.250	0.400	100	0.045
DN125	125	0.400	0.640	160	0.070
DN150	150	0.625	1.000	250	0.250
DN200	200	2.000	3.200	400	0.400
DN250	250	3.150	5.000	630	0.600
DN300	300	5.000	8.000	1000	0.600



SensoStar[®]

EM9500

HIGH PRECISION ELECTROMAGNETIC
WATER METER



PRODUCT FEATURES

- High R-value: Wide range ratio $Q_3/Q=400$, $Q_4/Q \geq 16$
 - Starting flow rate: Starting flow rate $\leq 5\text{mm/s}$
 - Strong anti interference: two-stage shielding technology and micro current monitoring technology, precise measurement
- Zero pressure loss: The internal structure of the water meter is a straight pipe structure, with no pressure loss
 - Dual power supply, Low power consumption
 - High precision measurement: With self checking and correction function, ensuring measurement accuracy

TECHNICAL PARAMETER

Electromagnetic water meter caliber and flow range (in accordance with the new standard GB/T778-2018)

Note: Suitable for tubular electromagnetic water meters

Caliber	$Q_4(\text{m}^3/\text{h})$	$Q_3(\text{m}^3/\text{h})$	R=160 2 class		R=250 2 class		R=400 2级	
			$Q_2(\text{m}^3/\text{h})$	$Q_1(\text{m}^3/\text{h})$	$Q_2(\text{m}^3/\text{h})$	$Q_1(\text{m}^3/\text{h})$	$Q_2(\text{m}^3/\text{h})$	$Q_1(\text{m}^3/\text{h})$
DN40	50	40			0.25	0.16	0.16	0.10
DN50	78.75	63			0.40	0.25	0.25	0.15
DN65	125.00	100	1.00	0.62	0.64	0.40	0.40	0.25
DN80	125.00	100(40)	1.00	0.62	0.64	0.40	0.40	0.25
DN100	200.00	160.00	1.60	1.00	1.00	0.64	0.64	0.40
DN150	500.00	400(160)	4.00	2.50	2.56	1.60	1.60	1.00
DN200	787.50	630(250)	6.30	3.94	4.00	2.52	2.52	1.58
DN250	2000.00	1600(400)	16.00	10.00	10.24	6.40	6.40	4.00
DN300	2000.00	1600(630)	16.00	10.00	10.24	6.40	6.40	4.00

Note: The maximum allowable error of electromagnetic water meters should comply with the provisions of GB/T778-2018

$Q_1(\text{m}^3/\text{h})$:Minimum flow rate,
 $Q_2(\text{m}^3/\text{h})$:Boundary flow rate,
 $Q_3(\text{m}^3/\text{h})$:Common flow rate,
 $Q_4(\text{m}^3/\text{h})$:Overload flow rate,
 $Q_2/Q_1=1.6$, $Q_4/Q_3=1.25$

Precision:
 $Q_1 \sim Q_2$ error: $\pm 5\%$
 $Q_2 \sim Q_4$ error: $\pm 2\%$
The initial flow rate is approximately 1/16 of the minimum flow rate

