

SHARKY 774 COMPACT

ULTRASONIC COMPACT ENERGY METER

DIEHL
Metering



APPLICATION

SHARKY 774 COMPACT ultrasonic energy meter is designed for measuring the energy consumption in heating or bifunctional (heating/cooling) application for billing purposes. Its static ultrasonic technology is based on the measurement of the transit time. It offers many benefits: no moving parts (reduces wear and tear of the metering components), low pressure loss, wide dynamic measuring range, low start flowrate and insensitiveness to suspended particles.

FEATURES

- ▶ M-Bus or Wireless M-Bus (OMS radio 868 MHz) communication. Enhanced transmission performance is achieved when combined with Diehl Metering AMR system technology
- ▶ Heat-transfer fluid: water
- ▶ Constant high measuring rates of the temperatures and volume with up to 12 years battery life time
- ▶ 8-digit LCD
- ▶ Removable calculator (0.45m coaxial cable) ensuring comfortable reading

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GENERAL

SHARKY 774 compact	
Application	Heating or bifunctional (heating /cooling) Heat-transfer fluid: glycol-free water
Approval	MID (DE-13-MI004-PTB008)
Environmental class	Class C
Ambient class	Class E2 + M2
Ambient operating temperature	°C +5 ... +55 (<35 °C have a positive effect on battery lifetime)
Ambient storage temperature	°C -25 ... +60 (>35 °C max. 4 weeks)
Communication	M-Bus or radio
Frequency band	868 or 434 MHz
Type of radio telegram	Open Metering Standard (OMS)
Transmission data updating	Online - no time delay between value measurement and data transmission
Data transmission	Unidirectional
Sending interval	Rapid mode (drive-by): 14 s + synchron telegram: 900 s standard mode (walk-by): 64 s + synchron telegram: 900 s

REACH

Information pursuant to Article 33 (1) of Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006:

This product series contains articles with the following substances in a concentration of more than 0.1% weight by weight (w/w):

- Lead (CAS no.: 7439-92-1)
- Lead titanium zirconium oxide (CAS no.: 12626-81-2)
- Octamethylcyclotetrasiloxane (CAS no.: 556-67-2)
- Decamethylcyclopentasiloxane (CAS no.: 541-02-6)
- Dodecamethylcyclohexasiloxane (CAS no.: 540-97-6)

CALCULATOR - BASIC FEATURES

SHARKY 774 compact	
Protection class	IP 65
Battery supply	3.6 VDC (2xAA-cell), up to 12 years lifetime (at standard conditions of use and temperature)
Battery ¹ lifetime - radio	Rapid mode: up to 7 years; standard mode: up to 11 years (depends on sending interval)
Battery ¹ lifetime - M-Bus	Up to 12 years
Temperature sensor type	Pt 500, 2-wire; Ø 5.2 mm
Cable length of temperature sensor	m 1.45 / 1.95
Absolute temperature range	Θ °C +1 ... +105 (+130 in option)
Measuring cycle - flow	s 2
Measuring cycle - temperature sensor	s 16
Starting temperature difference	ΔΘ K 0.125
Min. temperature difference	ΔΘ _{min} K 3 (MID approved)
Max. temperature difference (heating)	ΔΘ _{max} K 127 (MID approved)
Interfaces standard	Optical ZVEI interface
Interfaces optional	M-Bus or radio
Extensive readable data memory	Periodical log ² ; 3 history logs; event memory

¹ Battery exchangeable at lab

² Programmable storage interval (daily, weekly, monthly, ...)

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FLOW SENSOR - BASIC FEATURES

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Protection class flow sensor	IP54 (heating) - IP68 (heating/cooling)
Material of the flow sensor body	Brass
Temperature range heating	°C +5 ... +105*
	+5 ... +105
Temperature range heating with cooling tariff	°C 5 ... 105
Dynamic range (q_p/q_i)	1:100
Mounting position flow sensor	Any position, calming section not necessary

* +130°C in option

DISPLAY

SHARKY 774 compact	
Display indication	LCD, 8-digit
Units	MWh - kWh - GJ - °C - m ³
Total values	99,999,999 - 9,999,999.9 - 999,999.99 - 99,999.999
Values displayed	Energy - Power - Volume - Flow rate - Temperature and more

* MWh - GJ in option

INTERFACES

SHARKY 774 compact	
Optical	ZVEI interface, for communication and testing, M-Bus protocol
M-Bus	Configurable telegram, according to EN13757-3, data reading via two wires with non polarity (1.5 m), auto baud detect (300 and 2400 baud), galvanically isolated, one M-Bus load
Wireless M-Bus	Open Metering Standard (OMS), Generation 3 Profile A or Generation 4 Profile B; frequency band 868 or 434 MHz

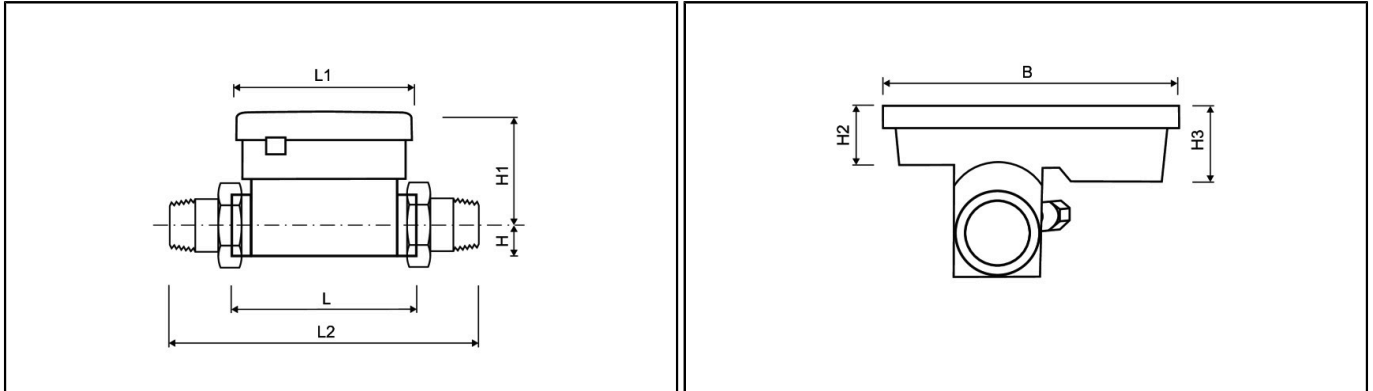
TECHNICAL DATA FLOW SENSOR

Nominal flow rate	q_p	m ³ /h	1.5	2.5
Nominal diameter	DN	mm	15	20
Overall length	L	mm	110	130
Starting flow rate		l/h	2.5	4
Minimum flow rate	q_i	l/h	15	25
Maximum flow rate	q_s	m ³ /h	3	5
Overload flow rate		m ³ /h	4.6	6.7
Operating pressure	PN	bar	16	16
kv value (q_p^2 (m ³ /h) = $kv^2 \times \Delta p$ (bar))			4.33	7.91
Pressure loss at q_p	Δp	mbar	120	100

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DIMENSIONS THREAD VERSION



Nominal flow rate	q _p	m ³ /h	1.5	2.5
Nominal diameter	DN	mm	15	20
Overall length	L	mm	110	130
Overall length with coupling	L2	mm	190	230
Length of calculator	L1	mm	90	90
Height	H	mm	14.5	18
Height	H1	mm	55	58
Height of calculator	H2	mm	27	27
Height of calculator	H3	mm	40	40
Width of calculator	B	mm	135	135
Connection thread on meter		inch	G ³ / ₄ B	G1B
Connection thread of coupling		inch	R ¹ / ₂	R ³ / ₄
Weight		kg	0.70	0.77

PRESSURE LOSS GRAPH / TYPICAL ERROR GRAPH

