DIEHL
Metering

SHARKY 774 COMPACT

COMPACT ENERGY METER | ULTRASONIC

APPLICATION

The ultrasonic compact energy meter can be used for measuring the energy consumption in heating or cooling application for billing purposes. The measurement principle is static and based on the measurement of the transit time. Ultrasonic technology offers many benefits: no moving parts (avoids wear and tear of the metering components), low pressure loss, large metering dynamics and low start flowrate, insensitiveness to suspended particles.

FEATURES

- AMR Smart Meter
- M-Bus or wM-Bus Radio. Combined with Diehl Metering AMR System technology highest transmission performance is achievable
- Constantly high measuring rates (flow: 2 s; temp.: 16 s) with up to 12 years battery lifetime. Current power is calculated and updated every 2 s.
- AA-cells contain less lithium (0.7 g per piece) than A-cells.
- Springless battery contact (hard-solder) is corrosion-protected
- MID class 2 and PTB K7.2
- MID electromagnetic class E2 and mechanical class M2 – less sensitive to neg. influence, e.g. culprit PWM pump
- 8-digit LCD offers 3 fractional digits without risk of display overflow.
- Only 54 mm design hight from pipe center, hence easy to install in compact heat stations

BASIC FEATURES

			SHARKY 774 compact
Application			Heating - cooling - heating/with cooling tariff
Approval			MID (DE-13-MI004-PTB008) and PTB K7.2 for cooling (DE-16-M-PTB-0041)
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
Test possibilities			Via display, optical test pulses

BASIC FEATURES - CALCULATOR

			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 (heating)	Θ	°C	1 ... 105 / 1 ... 130
Absolute temperature range (cooling)	Θ	°C	1 ... 50
Measuring cycle - flow	T	s	2
Measuring cycle - temperature sensor	T	s	16
Starting temperature difference	$\Delta\Theta$	K	0.125
Min. temperature difference	$\Delta\Theta_{min}$	K	3
Max. temperature difference	$\Delta\Theta_{max}$	K	90 / 120 (heating) | 50 (cooling)
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, ...)

BASIC FEATURES - FLOW SENSOR

		SHARKY 774 compact
Mounting position flow sensor		Any position, horizontal, riser or downpipe and overhead
Protection class flow sensor		Heating IP 54 | Heating with cooling tariff / cooling IP 65 (at normal ambient air pressure)
Material of the flow sensor body		Brass
Temperature range heating	°C	5 ... 105 / 5 ... 130
Temperature range cooling	°C	2 ... 50
Temperature range heating with cooling tariff	°C	5 ... 105
Dynamic range (q_p/q_i)		1:100
Useful range (q_s/q_p)		2:1

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

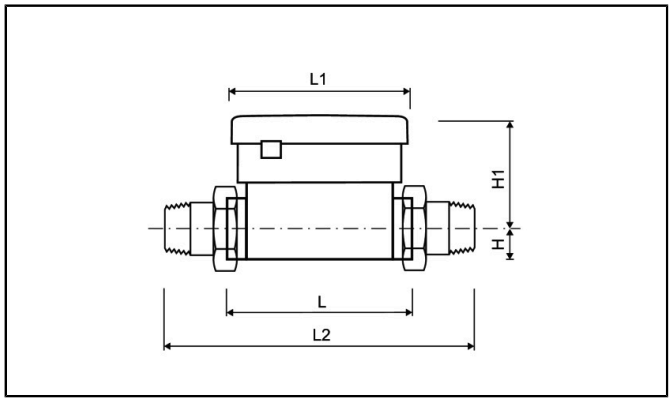
INTERFACES

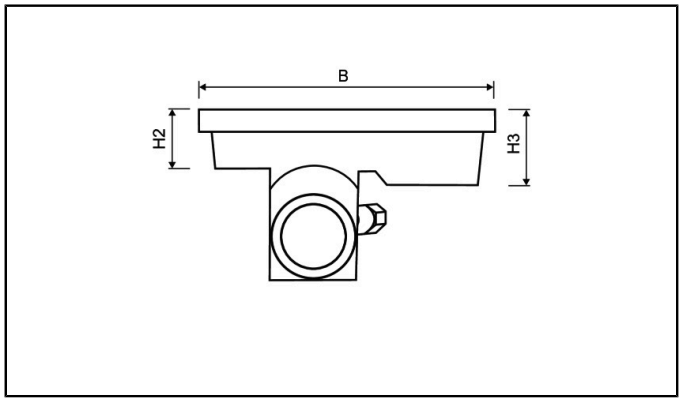
	SHARKY 774 compact
Optical	ZVEI interface, for communication and testing, M-Bus protocol
M-Bus	Configurable telegram, according to EN13757-3, data reading via two wires with non polarity (1.5 m), auto baud detect (300 and 2400 baud), galvanically isolated, one M-Bus load
Wireless M-Bus	Open Metering 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	**0.6**	**0.6**	**1.5**	**1.5**	**1.5**	**2.5**
Nominal diameter	DN	mm	15	20	15	20	20	20
Overall length	L	mm	110	130	110	130	190	130
Starting flow rate		l/h	1	1	2.5	2.5	2.5	4
Minimum flow rate	q_i	l/h	6	6	15	15	15	25
Maximum flow rate	q_s	m^3/h	1.2	1.2	3	3	3	5
Overload flow rate		m^3/h	2.5	2.5	4.6	4.6	4.6	6.7
Operating pressure	PN	bar	16	16/25	16	16	16/25	16
kv value		m^3/h	1.95	2.06	4.16	4.42	4.42	7.54
Pressure loss at q_p	Δp	mbar	95	85	130	115	115	110

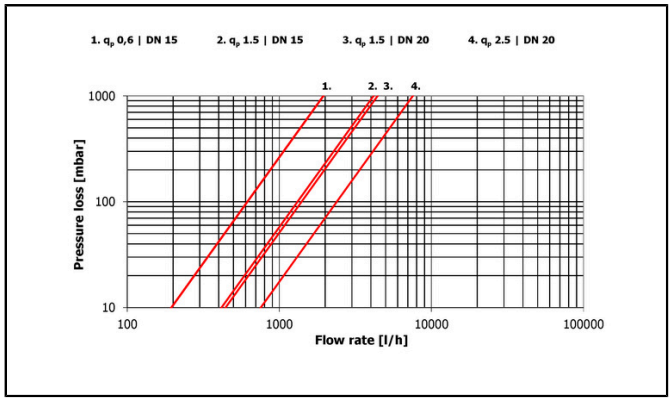
DIMENSIONS THREAD VERSION

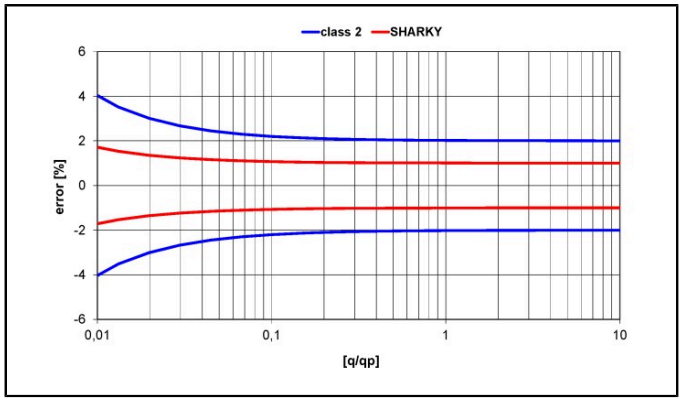




Nominal flow rate	q_p	m^3/h	0.6	0.6	1.5	1.5	1.5	2.5
Nominal diameter	DN	mm	15	20	15	20	20	20
Overall length	L	mm	110	130	110	130	190	130
Overall length with coupling	L2	mm	190	230	190	230	290	230
Length of calculator	L1	mm	90	90	90	90	90	90
Height	H	mm	14.5	18	14.5	18	18	18
Height	H1	mm	55	84	55	58	84	58
Height of calculator	H2	mm	27	27	27	27	27	27
Height of calculator	H3	mm	40	40	40	40	40	40
Width of calculator	B	mm	135	100	135	135	100	135
Connection thread on meter		Inch	G¾B	G1B	G¾B	G1B	G1B	G1B
Connection thread of coupling		Inch	R½	R¾	R½	R¾	R¾	R¾
Weight		kg	0.70	0.85	0.70	0.77	0.96	0.77

PRESSURE LOSS GRAPH / TYPICAL ERROR GRAPH





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)

Economic Actor Information

Applicable regulation and legal obligations for products may change.

DIEHL METERING monitors applicable regulation to ensure their products comply at the date of placing on the market.

Each economic actor making products available on the market thereafter must independently keep informed about the current applicable regulation.

For questions, please contact: metering-germany-info@diehl.com

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