SHARKY 774 COMPACT

DIEHL
Metering

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 (vol.: 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
- MID class 2

smart in solutions

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GENERAL

			SHARKY 774 compact
Application			Heating - cooling - heating/with cooling tariff
Approval			MID for heating and PTB K7.2 for cooling
Accuracy class			Class 2
Ambient temperature		°C	+5 ... +55 (<35 have a positive effect on battery lifetime)
Storage temperature		°C	Typical +5 ... +55 | max. -20 ... +60 (max. 4 weeks)
Humidity		%	Max. 93
Battery supply[1]			3.6 VDC (2xAA-cell), up to 12 years lifetime (at standard conditions of use and temperature)
Lithium content		g	2 x 0.7
Temperature sensor type			Pt 500, 2-wire; Ø 5.2 mm
Cable length of temperature sensor		m	1.45 / 1.95
Test possibilities			Via display
Volume measuring cycle	T	s	2
Temperature measuring cycle	T	s	16
Power calculation cycle	T	s	2

[1] battery exchangeable at lab

FLOW SENSOR - BASIC FEATURES

			SHARKY 774 compact
Dynamic range (q_p/q_i)			1:100
Useful range (q_s/q_p)			2:1
Temperature range (heating)		°C	5 ... 105 / 5 ... 130
Temperature range (cooling)		°C	2 ... 50
Temperature range (heating with cooling tariff)		°C	5 ... 105
Protection class			Heating IP 54 | Heating with cooling tariff / cooling IP 68 (at normal ambient air pressure)
Mounting position flow sensor			Any position, horizontal, riser or downpipe and overhead

CALCULATOR - BASIC FEATURES

			SHARKY 774 compact
Protection class			IP 65
Environmental class - mechanical			M1, M2
Environmental class - electromechanical			E1, E2
Calculator			Removable, with 0.45 m cable to flow sensor
Absolute temperature range (heating)	Θ	°C	1 ... 105 / 1 ... 130
Absolute temperature range (cooling)	Θ	°C	1 ... 50
Starting temperature difference	ΔΘ	K	0.125
Min. temperature difference	$\Delta\Theta_{min}$	K	3
Max. temperature difference	$\Delta\Theta_{max}$	K	90 / 120 (heating) | 50 (cooling)
Extensive readable data memory			Two predefined history logs for 720 daily (Log-1) and 120 monthly (Log-2) values of energy, volume and error hours; additonally event memory (error log)

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INTERFACES

	SHARKY 774 compact
Optical	According to ZVEI standard
Display	LCD Display
M-Bus	According to EN13757-3:2013
Wireless M-Bus	According to EN13757-4:2013

DISPLAY

	SHARKY 774 compact
Display indication	8-digit
Units	kWh - MWh - GJ - m³ - °C
Total values	99.999,999
Values displayed (main loop)	Energy - Volume - Flow - Power - Temperature - Differential temperature - Operating days - Error Status - Display test

M-BUS

	SHARKY 774 compact
M-Bus	Auto baud detect (300 and 2400 baud); galvanically isolated
Data transmission	Data reading via two wires with non polarity (1.5 m)
Battery[1] lifetime	Up to 12 years

[1] battery exchangeable at lab

WIRELESS M-BUS

	SHARKY 774 compact
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
Battery[1] lifetime	Rapid mode: up to 6 years; standard mode: up to 12 years (depends on sending interval)
Sending interval options[2]	Rapid mode (drive-by): 14 s + synchron telegram (OMS 3.0): 900 s | standard mode (walk-by): 64 s + synchron telegram (OMS 3.0): 900 s

[1] battery exchangeable at lab
[2] factory settings

TECHNICAL DATA FLOW SENSOR

Nominal flow rate	q_p	m³/h	0.6	1.5	1.5	2.5
Nominal diameter	DN	mm	15	15	20	20
Overall length	L	mm	110	110	130	130
Starting flow rate		l/h	1	2.5	2.5	4
Minimum flow rate	q_i	l/h	6	15	15	25
Maximum flow rate	q_s	m³/h	1.2	3	3	5
Overload flow rate		m³/h	2.5	4.6	4.6	6.7
Operating pressure	PN	bar	16	16	16	16
Kvs value (q_p^2 (m^3/h) = Kvs² x Δp (bar))			1.95	4.33	5.48	7.91
Pressure loss at q_p	Δp	mbar	95	120	75	100

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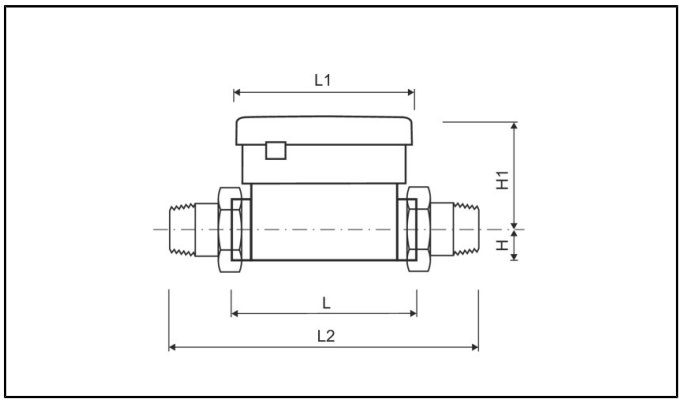
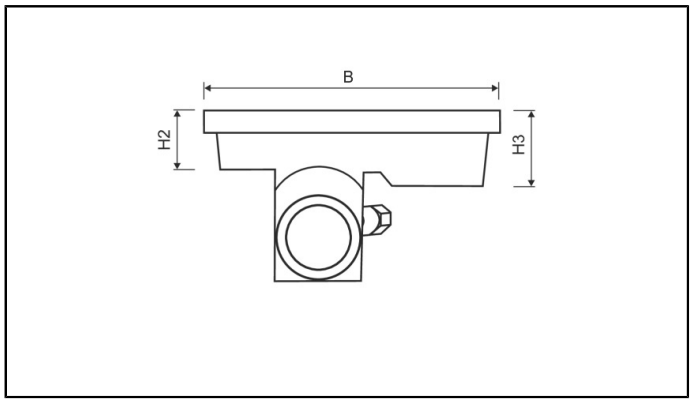
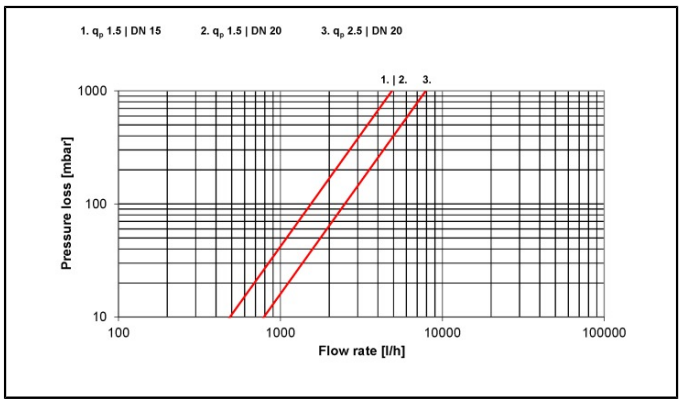
DIMENSIONS THREAD VERSION

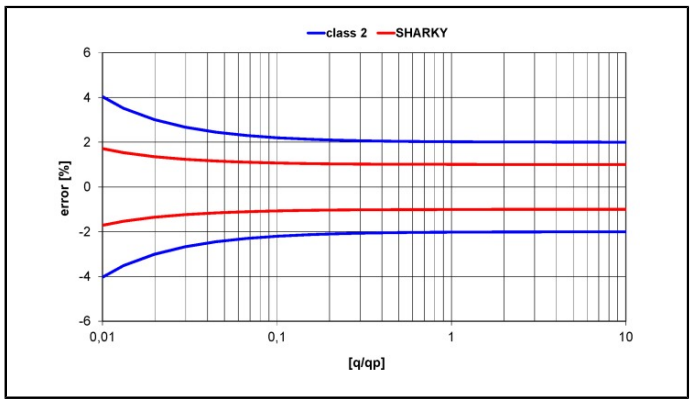




Nominal flow rate	q_p	m³/h	0.6	1.5	1.5	2.5
Nominal diameter	DN	mm	15	15	20	20
Overall length	L	mm	110	110	130	130
Overall length with coupling	L2	mm	190	190	230	230
Length of calculator	L1	mm	90	90	90	90
Height	H	mm	14.5	14.5	18	18
Height	H1	mm	55	55	58	58
Height of calculator	H2	mm	27	27	27	27
Height of calculator	H3	mm	40	40	40	40
Width of calculator	B	mm	135	135	135	135
Connection thread on meter		Inch	G¾B	G¾B	G1B	G1B
Connection thread of coupling		Inch	R½	R½	R¾	R¾
Weight		kg	0.70	0.70	0.77	0.77

PRESSURE LOSS GRAPH / TYPICAL ERROR GRAPH





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Subject to technical adjustments

smart in solutions