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 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, intensiveness to suspended particles.

FEATURES

- AMR Smart Meter
- M-Bus or wM-Bus Communication. Combined with Diehl Metering AMR System technology highest transmission performance is achievable
- Constantly high measuring rates (vol.: 2s; temp.: 16s) with up to 12 years battery life time. Current power is calculated and updated every 2s.
- AA-Cells contain less Lithium (0,7g per piece) than A-Cells. Not affected by dangerous goods transportation rules
- Springless battery contact (hard-solder) is corrosion-protected
- MID electromagnetic class E2 – less sensitive to neg. influence, e.g. culprit PWM pump
- 8-digit LCD offers 3 fractional digits without risk of display overflow. Comfortable reading by removeable calculator (0.45m coax cable)
- Only 54 mm design hight from pipe center, hence easy to install in compact heat stations

smart in solutions

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GENERAL

			SHARKY 774 compact
Application			Heating
Approval			MID
Accuracy class			Class 2
Ambient temperature		°C	+5 ... +55 (<35 °C have a positive effect on battery lifetime)
Storage temperature		°C	Typical +5... +55°C
			Max. -20... +60°C (max. 4 weeks)
Humidity		%	93 max.
Battery supply			3.6 VDC, up to 12 years lifetime (at standard conditions of use and temperature. Theoretical life, with no guarantee)
Temperature sensor type			Pt 500, 2-wire; Ø 5.2 mm
Cable length of temperature sensor		m	1.45
Test possibilities			Via display
Battery[1]			3.6 VDC, 2xAA-Cell
Lithium content		g	2 x 0.7
Volume measurement rate	T	s	2
Temp. measurement rate	T	s	16
Power calculation rate	T	s	2

[1]Battery exchangeable at lab.

FLOW SENSOR - BASIC FEATURES

		SHARKY 774 compact
Volume measuring cycle	s	2
Dynamic range (q_p/q_i)		1:100
Useful range (q_s/q_p)		2:1
Temperature range heating water	°C	15 ... 90 (MID approved)
Protection class		IP 54

CALCULATOR - BASIC FEATURES

			SHARKY 774 compact
Protection class			IP 54
Environmental class - mechanical			M1
Environmental class - electromechanical			E1, E2
Calculator			Removable, with 0.45 m cable to flow sensor
Absolute temperature range calculator	Θ	°C	15 ... 105 (calculator)
Starting temperature difference	ΔΘ	K	0.125
Min. temperature difference	$\Delta\Theta_{min}$	K	3 (MID approved)
Max. temperature difference	$\Delta\Theta_{max}$	K	90 (MID approved)
Temperature measuring cycle	T	s	16
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	Energy - Power - Volume - Flow rate - Temperature - etc.

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 (1.5m)
Battery[1] lifetime	T	a	12

[1]Battery exchangeable at lab.

WIRELESS M-BUS

			SHARKY 774 compact
Frequency band			868 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 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
Battery[1] lifetime	T	a	Rapid mode: 6 years; Standard mode: 12 years (depends on sending interval)

[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 ($\Delta p=Q^2/Kvs^2$)			2.06	5.48	5.48	7.91
Pressure loss at q_p	Δp	mbar	85	75	75	100

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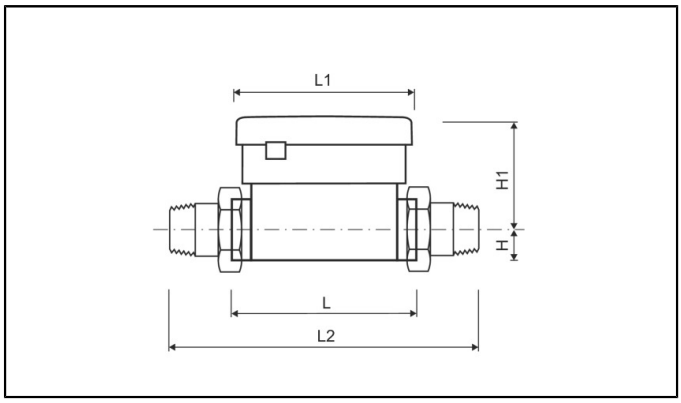
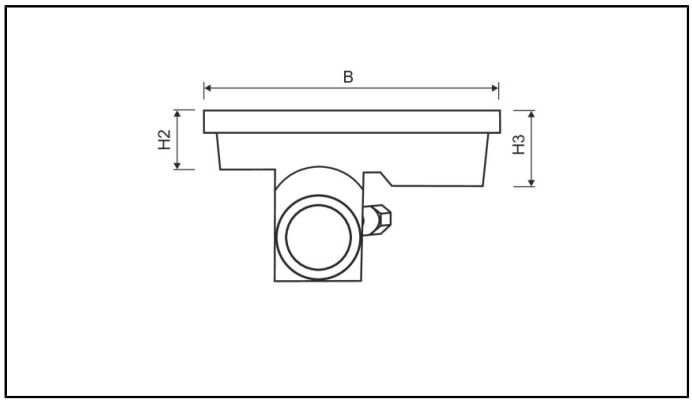
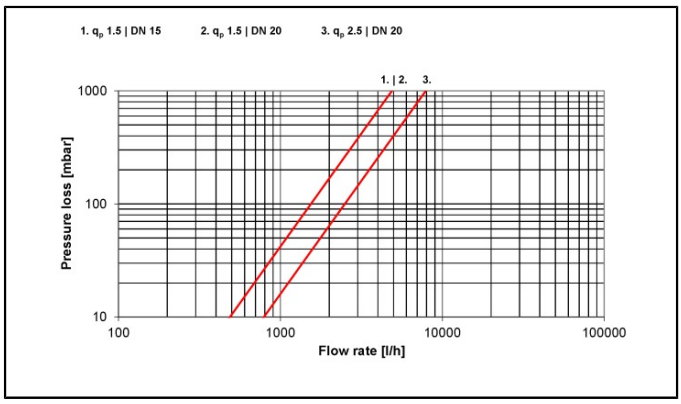
DIMENSIONS THREAD VERSION

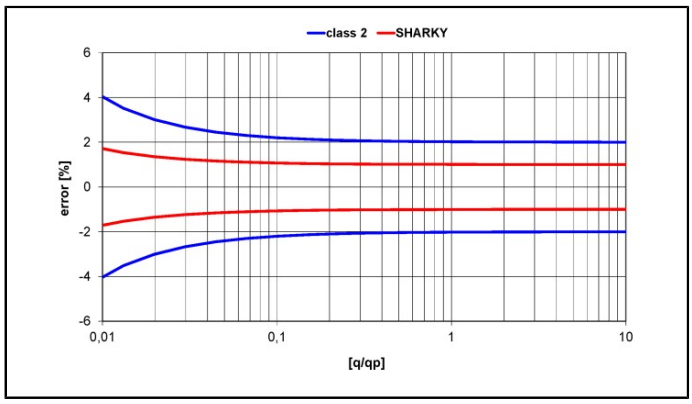




Nominal flow rate	q_p	m³/h	0.6	1.5	1.5	2.5
Nominal diameter	DN	mm	15	15	20	20
Overall length	L	mm	110	110	130	130
Overall length with coupling	L2	mm	190	190	230	230
Length of calculator	L1	mm	90	90	90	90
Height	H	mm	14.5	14.5	18	18
Height	H1	mm	55	55	58	58
Height of calculator	H2	mm	27	27	27	27
Height 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

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