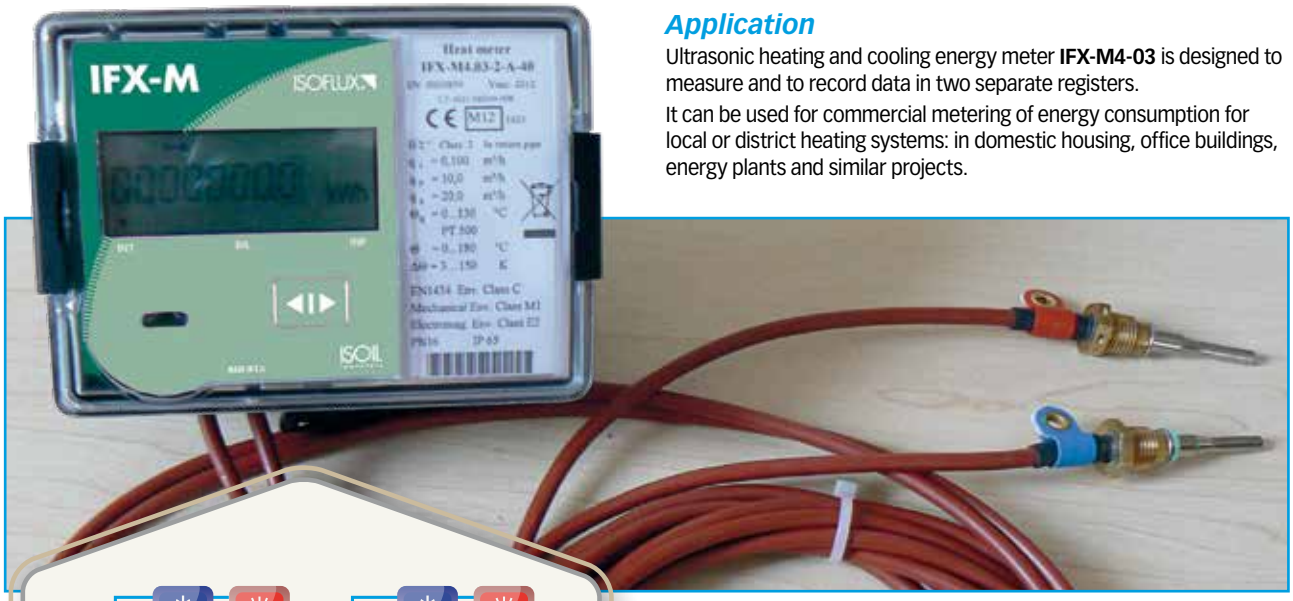
Heating and Cooling for Building Automation

ISOFLUX™

The ultrasonic meter

RESIDENTIAL ENERGY METER IFX

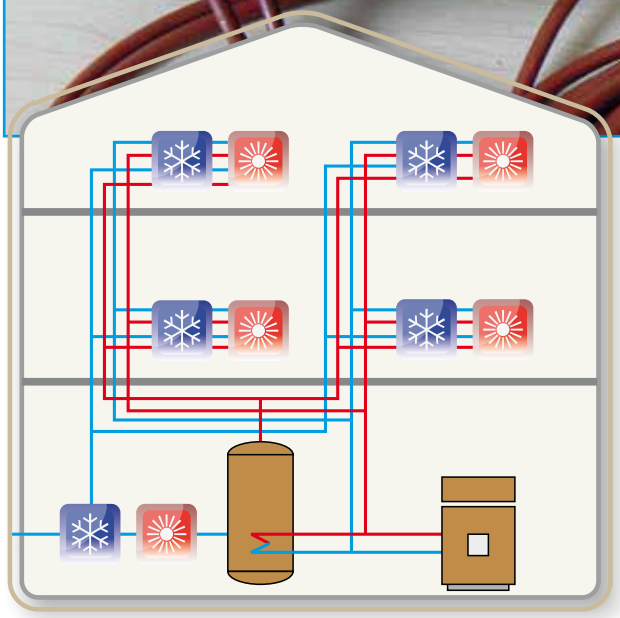
Serie 03 - All in one



Application

Ultrasonic heating and cooling energy meter **IFX-M4-03** is designed to measure and to record data in two separate registers.

It can be used for commercial metering of energy consumption for local or district heating systems: in domestic housing, office buildings, energy plants and similar projects.



Commercial (offices, industrial, building automation)

FLOW MEASUREMENT				
Flow measurement limits, mounting length and connection type:				
Connection type	Mounting length, mm	qi' m3/h	qp' m3/h	qs' m3/h
G 3/4 "	110	0,006	0,6	1,2
G 3/4 "	110	0,015	1,5	3,0
G1 "	130	0,025	2,5	5,0
G1 1/4 "	260	0,035	3,5	7,0
G1 1/4 "	260	0,06	6,0	12,0
G2 "	300	0,100	10,0	20,0
DN50	270	0,15	15,0	30,0
Fluid temperature range		5 °C ... 130 °C, for qp ≤ 2,5 m3/h 10 °C ... 130 °C, for qp ≤ 3,5 m3/h		
Maximum permissible pressure		1,6 MPa		

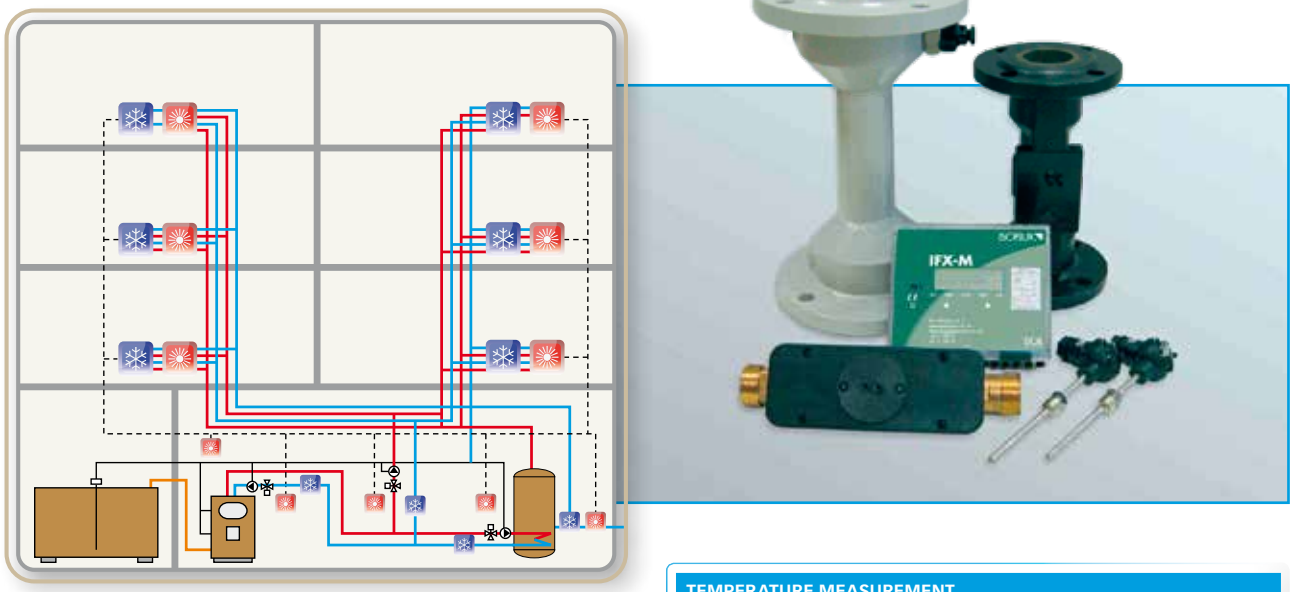
Available flanged versions on all sizes

TEMPERATURE MEASUREMENT	
Fluid temperature	0 °C ... 180 °C
Temp. difference measurement limits	2 ... 150 K or 3 ... 150 K
Type of temperature sensors	Pt500 DS (qp ≤ 6 m3/h) or PL
Connection scheme – two-wire, cable length up to 5 m	
Internal data logger capacity	up to 960 hours for hourly records up to 1116 days for daily records up to 36 months for monthly records
External dimensions of the calculator	117 × 44 × 90 mm
Protection class	IP65 (IP67 on request)
Ambient temperature	5 °C to 55 °C
COMMUNICATION INTERFACES	
Optical communication interfaces	integrated, according to EN 61107 (IEC 1107)
Available types of plug-in interface modules	M-bus; 2 pulse outputs; Wireless 868 MHz

Accuracy class	2 (according to EN1434)
Energy measurement units	kWh, MWh, GJ, Gcal
Power supply	internal battery (lifetime not less than 11 years)

ENERGY METER IFX

Serie 04 - All in one



Domestic (residential houses, condominium)

Application

Ultrasonic energy meter **IFX-M4-04** can be used for measurement of consumed heat energy and heating or cooling medium (or other fluid quantity) in closed (MI 004) or open loop heating and water consumption systems.

PARAMETER	VALUE
Input pulse value	programmable
Input pulse type	active or passive
High voltage level for active pulses	2,5 ... 3,7 V
Low voltage level for active pulses	0 ... 0,7 V
Input resistance, when powered from internal battery	2 MΩ
Input resistance, when powered from AC source	10 kΩ

Connection type	Overall length mm	Flow-rate m³/h			Pressure losses Δq_p, at $q=q_p$ MPa, not more, than
		q_i	q_p	q_s	
G 1¼ (DN25)	260	0,035	3,5	7	0,004
G 1¼ (DN32)	260	0,06	6	12	0,01
G2 (DN40)	300	0,1	10	20	0,01
DN50	270	0,15	15	30	0,012
DN65	300	0,25	25	50	0,02
DN80	350	0,4	40	80	0,018
DN100	350	0,6	60	120	0,018

Available versions DN150 and DN200 flanged, not MID.

TEMPERATURE MEASUREMENT	
Number of measurement channels	1, 2 or 3
Temperature measurement limits	0 °C ... 180 °C (Fluid 0 °C ... 130 °C)
Temp. difference measurement limits	3 K ... 150 K (2 K ... 150 K)
Type of temperature sensors (2 or 4 wires)	Pt500 (W1,385), 500Ω (W1,391) Pt1000 (W1,385), 1000Ω (W1,391)
Cable length betwen the calculator and each of the sensors: – four-wire connection scheme – two-wire connection scheme	 10 m; 25 m; 50 m; 100 m 2,5 m; 5 m
Display resolutions for temperature and temperature difference	0,01 °C
PRESSURE MEASUREMENT	
Number of pressure measurement channels	up to 2
Input current limits (programmable)	0 ... 5 mA, 0 ... 20 mA, 4 ... 20 mA
Lower/Upper pressure measurement limits (programmable)	0 ... 2500 kPa 100 ... 2500 kPa
Relative normalized pressure measurement error	not more than ±0,25% from the upper pressure measurement limit
COMMUNICATION INTERFACES	
Optical communication interfaces	integrated, according to EN 61107 (IEC 1107)
Available types of plug-in interface modules	M-bus; M-bus/CL/RS232 and 2 pulse outputs; M-bus/CL/RS232 and 2 current outputs; RS232; RS485; Wireless 868 MHz
POWER SUPPLY OPTIONS	
Internal battery	3,6 V, battery lifetime - not less than 10 years
AC source supply	230 V, AC 50 Hz
GENERAL CONDITIONS	
Ambient temperature for the calculator	5 °C ... 55 °C
Environment class	C according to N1434
Protection class for the calculator	IP65 (IP67 on request)
External dimensions of the calculator	159 × 142 × 52 mm

ULTRASONIC FLOW SENSOR IFX

Serie 01 - Class 2 - MI004

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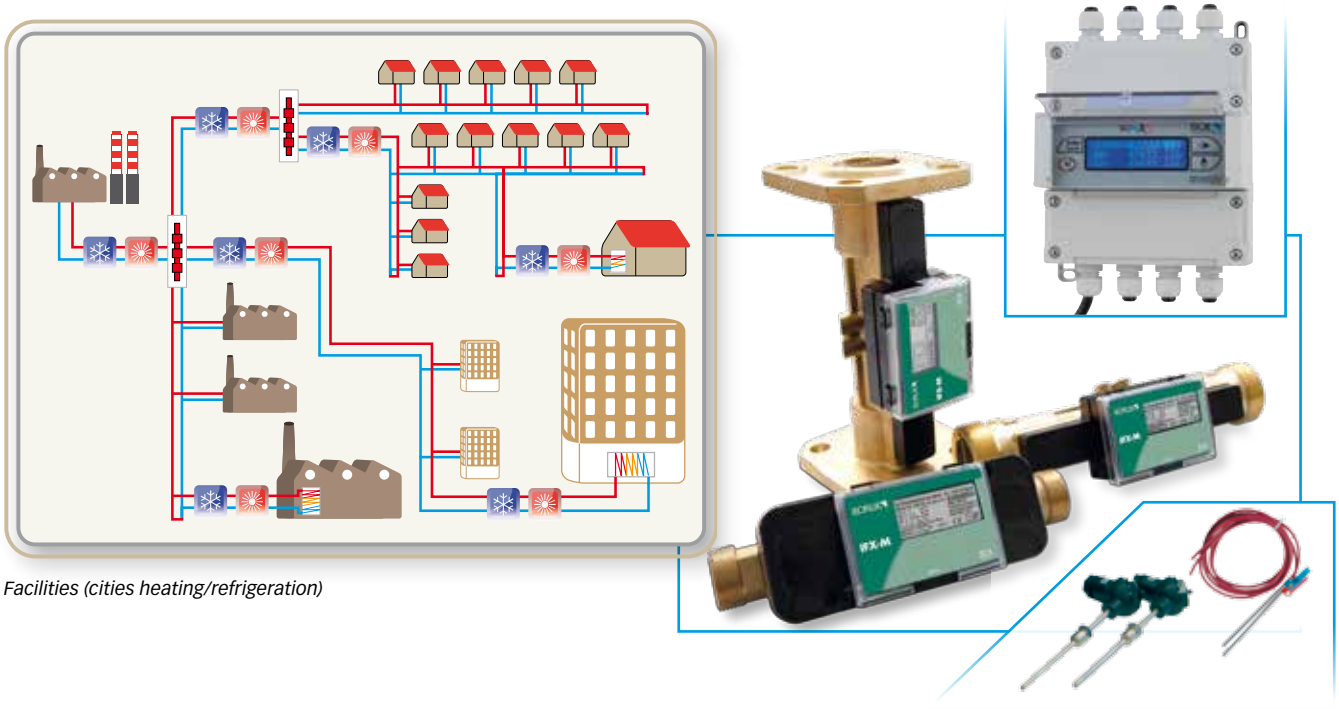

Facilities (cities heating/refrigeration)

Application

Ultrasonic flow sensors IFX-M4-01 are designed as component of the Thermal energy system, also MID approved.

- The flow sensor meets the requirement according to 89/336/EEC, EN50082-2, EN50081-2.
- Flow sensor may be installed both verticaly and horizontally.
- Flow sensor can be connected to ISONRG serie, or another BTU meter (please see ISONRG specifications separately)

The factory default is 0,1 liter per pulse until DN50. From DN65 is 1 liter per pulse. Different setting upon request.

General conditions:

Ambient temperature	5 °C to 55 °C						
Fluid temperature	0 °C to 130 °C						
Max permissible pressure	< 1,6 MPa						
Protection class	IP65 (IP67 on request)						
Nominal diameter DN, mm	25	32	40	50	65	80	100
Weight, less than, kg	3,0	3,0	10,0	10,0	14,0	15,0	19,0

Connection type	Overall length mm	Flow-rate m³/h			Pressure losses Δq_p, at q=q_p, MPa, not more, than
		q_i	q_p	q_s	
G 1¼ (DN25)	260	0,035	3,5	7	0,004
G 1¼ (DN32)	260	0,06	6	12	0,01
G2 (DN40)	300	0,1	10	20	0,01
DN50	270	0,15	15	30	0,012
DN65	300	0,25	25	50	0,02
DN80	350	0,4	40	80	0,018
DN100	350	0,6	60	120	0,018

All series are MID-MI004 approved in conformity to EN 1434

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