

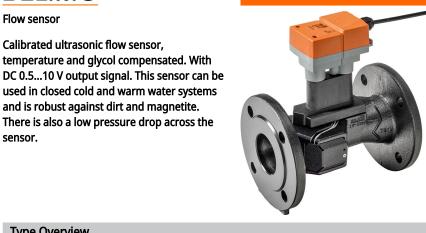
Calibrated ultrasonic flow sensor,

temperature and glycol compensated. With

used in closed cold and warm water systems and is robust against dirt and magnetite. There is also a low pressure drop across the

Technical data sheet

FM..F-SZ





Type Overview

sensor.

Туре	DN	FS [l/s]	Δp [kPa]	PN	Output signal active volumetric flow
FM065F-SZ	65	9.6	12	16	0.510 V
FM080F-SZ	80	13.6	13	16	0.510 V
FM100F-SZ	100	24.0	12	16	0.510 V
FM125F-SZ	125	37.5	13	16	0.510 V
FM150F-SZ	150	54.0	15	16	0.510 V

FS: Full scale, maximum measurable flow

 Δp : Pressure drop at FS

Technical data

Electrical data	Nominal voltage	AC/DC 24 V			
	Nominal voltage frequency	50/60 Hz			
	Nominal voltage range	AC 19.228.8 V / DC 21.628.8 V			
	Power consumption AC	1 VA			
	Power consumption DC	0.5 W			
	Connection supply	Cable , 3 x 0.75 mm ²			
Functional data	Application	Water			
	Voltage output	1x 010 V, max. load 1 mA			
	Pipe connection	Flange PN 16 according to EN 1092-2			
	Installation position	upright to horizontal			
	Servicing	maintenance-free			
Measuring data	Measured values	Flow			
	Measuring fluid	Water and water glycol mixtures			
	Measuring principle	Ultrasonic volumetric flow measurement			
	Measuring accuracy flow	±2% of the measured value (20100% FS) @ 20°C / Glycol 0% vol. ±0.4% of FS (020% FS) @ 20°C / Glycol 0% vo			
	Measuring accuracy flow note	±6% of the measured value (20100% FS) @ -20120°C / Glycol 050% vol. ±1.2% of FS (020% FS) @ -20120°C / Glycol 050% vol.			
	Flow Measurement Repeatability	±0.5%			
	Min. flow measurement	1% of FS			
Materials	Flow measuring pipe	EN-GJL-250 (GG 25), with protective paint			
Safety data	Ambient humidity	Max. 95% RH, non-condensing			
	Ambient temperature	-3050°C [-22122°F]			



Technical data sheet

F	N	۱	F-:	SZ

Safety data	Fluid temperature	-20120°C [-5250°F]			
	Storage temperature	-4080°C [-40176°F]			
	Protection class IEC/EN	III, Safety Extra-Low Voltage (SELV)			
	Power source UL	Class 2 Supply			
	Certification IEC/EN	IEC/EN 60730-1:11 and IEC/EN 60730-2-15:10			
	Degree of protection IEC/EN	IP54			
	Degree of protection NEMA/UL	NEMA 2			
	Enclosure	UL Enclosure Type 2			
	EMC	CE according to 2014/30/EU			
	Quality Standard	ISO 9001			
	Mode of operation	Туре 1			
	Pollution degree	3			
	Rated impulse voltage supply	0.8 kV			

Safety notes



This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.

Outdoor applications: Only possible where (sea) water, snow, ice, sunlight or aggressive gases cannot interfere directly with the device and it can be guaranteed that the ambient conditions remain at all times within the thresholds according to the data sheet.

Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.

The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

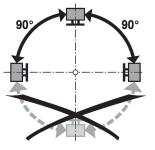
Pro	du	ct	Fea	tur	62
FIU	uu	υL.	гса	ιui	C3

Mode of operation	The ultrasonic flow sensor is equipped with a flow pipe, four flow transmitters and an electronic circuit. A temperature sensor is mounted in the flow pipe to compensate the temperature effects.
	A sensor error occurs when the ultrasonic path is interrupted (air bubbles in the system, connection to ultrasonic transducers interrupted).
Patented glycol compensation	Glycol changes the viscosity of the heat transfer fluid and as a result affects the measured volumetric flow. Without glycol compensation, volumetric flow measurements can show errors of as much as 30 percent. The patented automatic glycol compensation significantly reduces the degree of measurement error.

Installation notes

Recommended installation positions

The sensor can be installed upright to horizontal. The sensor may not be installed in a hanging position.

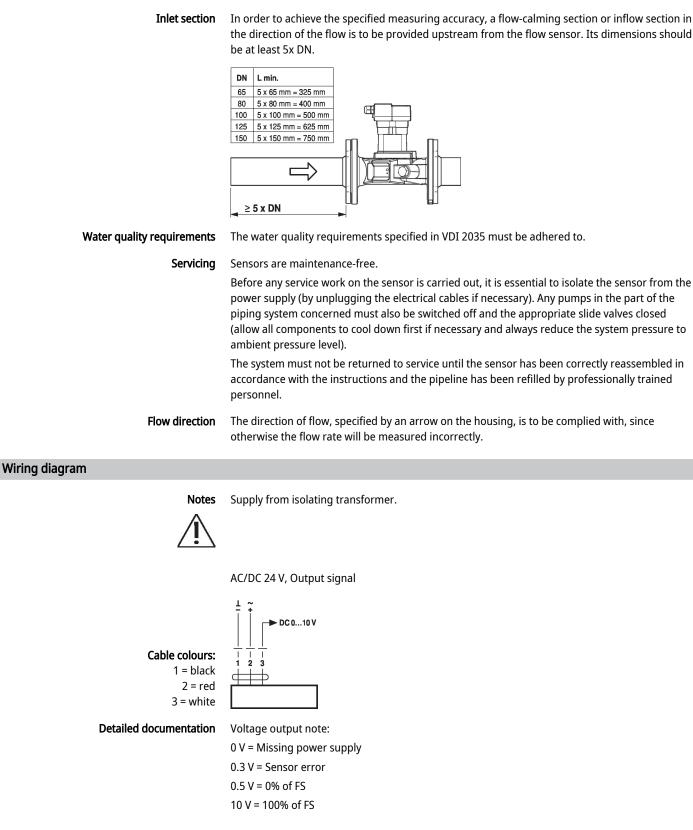


Installation in return

Installation in the return is recommended.

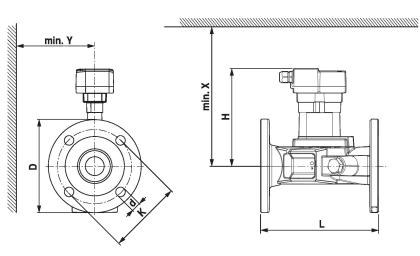


Technical data sheet





Dimensions



Туре	DN	DN ["]	L [mm]	H [mm]	D [mm]	d [mm]	K [mm]	X [mm]	Y [mm]	Weight
FM065F-SZ	65	2 1/2	240	193	185	4 x 19	145	263	132	13 kg
FM080F-SZ	80	3	260	200	200	8 x 19	160	270	140	15 kg
FM100F-SZ	100	4	262	202	230	8 x 19	180	272	155	18 kg
FM125F-SZ	125	5	314	209	255	8 x 19	210	279	167	24 kg
FM150F-SZ	150	6	334	219	285	8 x 23	240	289	182	30 kg