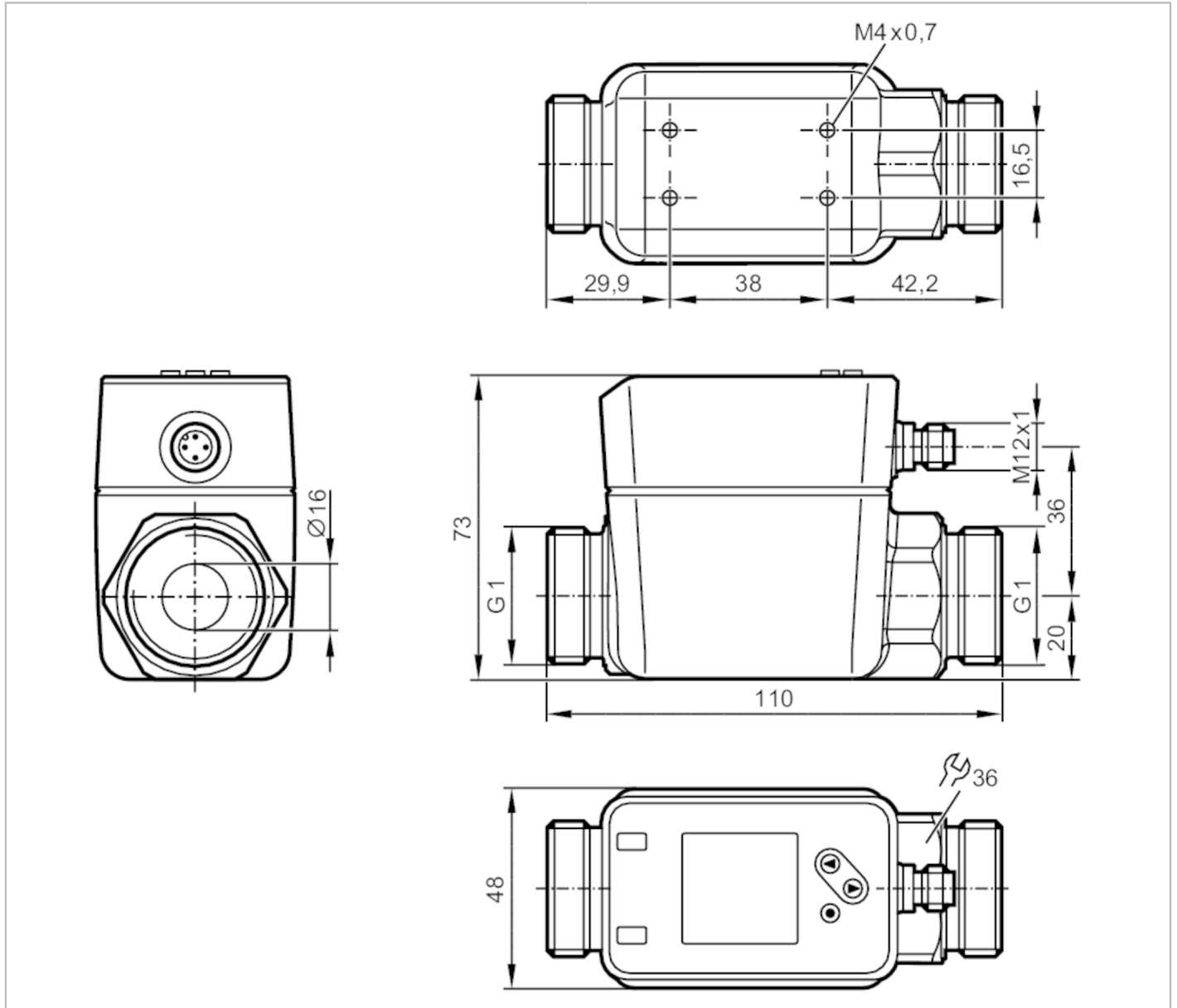


SM8020



Magnetic-inductive flow meter

SMR11XGXFRKG/US-100



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1	
Measuring range [l/min]	0.2...150	
Display range [l/min]	-180...180	
Process connection	G 1 DN25 flat seal	

Application

System	gold-plated contacts	
Media	Conductive liquids; water; water-based media	
Note on media	Leitfähigkeit: $\geq 20 \mu\text{S/cm}$ Viskosität: $< 70 \text{ mm}^2/\text{s}$ (40 °C)	
Medium temperature [°C]	-20...90	
Pressure rating [bar]	16	

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Electrical data		
Operating voltage [V]		18...30 DC; (nach EN 50178, SELV, PELV)
Current consumption [mA]		< 80
Protection class		III
Reverse polarity protection		yes
Power-on delay time [s]		5
Inputs / outputs		
Number of inputs and outputs		Number of digital outputs: 2; Number of analog outputs: 1
Inputs		
Inputs		counter reset
Outputs		
Total number of outputs		2
Output signal		switching signal; analog signal; pulse signal; IO-Link; frequency signal; (configurable)
Electrical design		PNP/NPN
Number of digital outputs		2
Output function		normally open / closed; (configurable)
Max. voltage drop switching output DC [V]		2
Permanent current rating of switching output DC [mA]		100
Number of analog outputs		1
Analog current output [mA]		4...20; (scalable)
Max. load [Ω]		500
Pulse output		flow rate meter
Short-circuit protection		yes
Type of short-circuit protection		yes (non-latching)
Overload protection		yes
Measuring/setting range		
Measuring range [l/min]		0.2...150
Display range [l/min]		-180...180
Resolution [l/min]		0.1
Set point SP [l/min]		1...150
Reset point rP [l/min]		0.2...149.2
Analog start point ASP [l/min]		0...120
Analog end point AEP [l/min]		30...150
Low flow cut-off LFC [l/min]		0.2...7.5
Frequency end point, FEP [l/min]		30.2...150
Frequency at the end point FRP [Hz]		1...10000
Volumetric flow quantity monitoring		
Pulse length [s]		0.002...2
Pulse value		0.001...99990000 l

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Temperature monitoring		
Measuring range	[°C]	-20...90
Display range	[°C]	-42...112
Resolution	[°C]	0.1
Set point SP	[°C]	-19.6...90
Reset point rP	[°C]	-20...89.6
Analog start point	[°C]	-20...68
Analog end point	[°C]	2...90
In steps of	[°C]	0.1

Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		$\pm (0,8 \% MW + 0,2 \% MEW)$
Repeatability		$\pm 0,2 \% MEW$
Temperature monitoring		
Accuracy	[K]	$\pm 2,5 (Q > 5 \% MEW)$

Reaction times		
Flow monitoring		
Start-up delay	[s]	0...50
Response time	[s]	$< 0.25; (dAP = 0, T09)$
Damping for the switching output dAP	[s]	0...5
Temperature monitoring		
Response time	[s]	15; $(Q > 10 \% MEW, T09)$

Software / programming	
Parameter setting options	hysteresis / window; normally open / closed; switching logic; Frequency output; current/pulse output; Start-up delay; display can be deactivated; Display unit

Interfaces	
Communication interface	IO-Link
Transmission type	COM2 (38,4 kBaud)
IO-Link revision	1.1
SDCI standard	IEC 61131-9
IO-Link device ID	961 d / 00 03 c1 h
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis
SIO mode	yes
Required master port class	A
Process data analogue	3
Process data binary	2
Min. process cycle time	[ms] 6

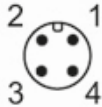
Operating conditions		
Ambient temperature	[°C]	-20...60
Storage temperature	[°C]	-25...80
Protection		IP 65; IP 67

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Tests / approvals		
EMC	DIN EN 60947-5-9	
Shock resistance	DIN IEC 68-2-27:	20 g (11 ms)
Vibration resistance	DIN IEC 68-2-6:	5 g (10...2000 Hz)
MTTF [years]	114	
UL approval	UL approval number	I014
	File number UL	E174189
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]	782	
Material	stainless steel (1.4408/316); stainless steel (1.4404 / 316L); PC; PBT+PC-GF30	
Materials (wetted parts)	stainless steel (1.4404 / 316L); PEEK; carbon fiber PEEK; FKM; Centellen	
Process connection	G 1 DN25 flat seal	
Displays / operating elements		
Display	Colour display 1,44", 128 x 128 pixels	
	2 x LED, yellow	
Remarks		
Remarks	MW = Measured value	
	MEW = Final value of the measuring range	
Pack quantity	1 pcs.	
Electrical connection		
Connector: 1 x M12; Contacts: vergoldet		
		

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Connection



Colours to DIN EN 60947-5-2

OUT1: Switching output Volumetric flow quantity monitoring
Switching output Temperature monitoring
Pulse output quantity meter
Frequency output volumetric flow monitoring
Frequency output Temperature monitoring
signal output Preset counter
IO-Link

OUT2: Switching output Volumetric flow quantity monitoring
Switching output Temperature monitoring
analog output flow
analog output temperature
Input counter reset

Core colors :

BK = black
BN = brown
BU = blue
WH = white

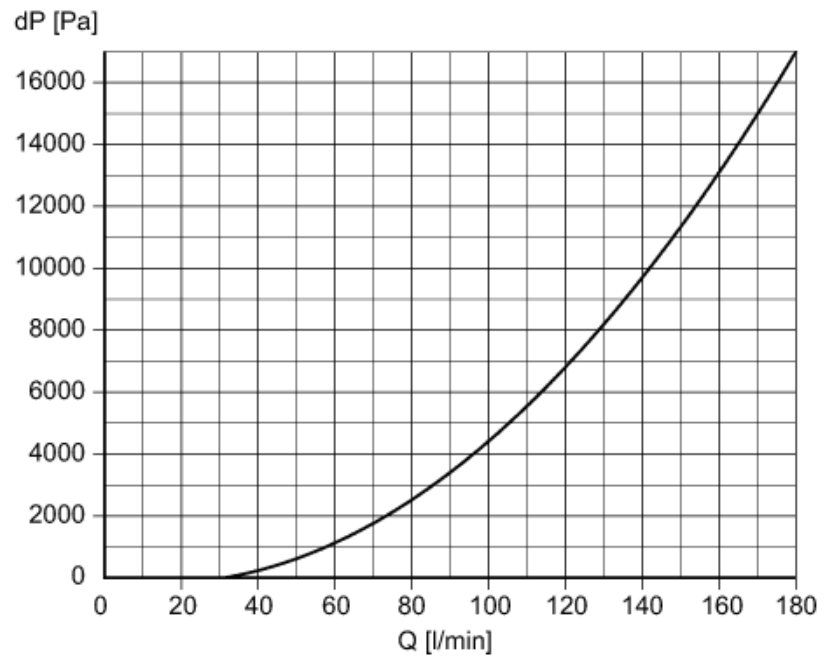
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Diagrams and graphs



Pressure loss / volumetric flow quantity