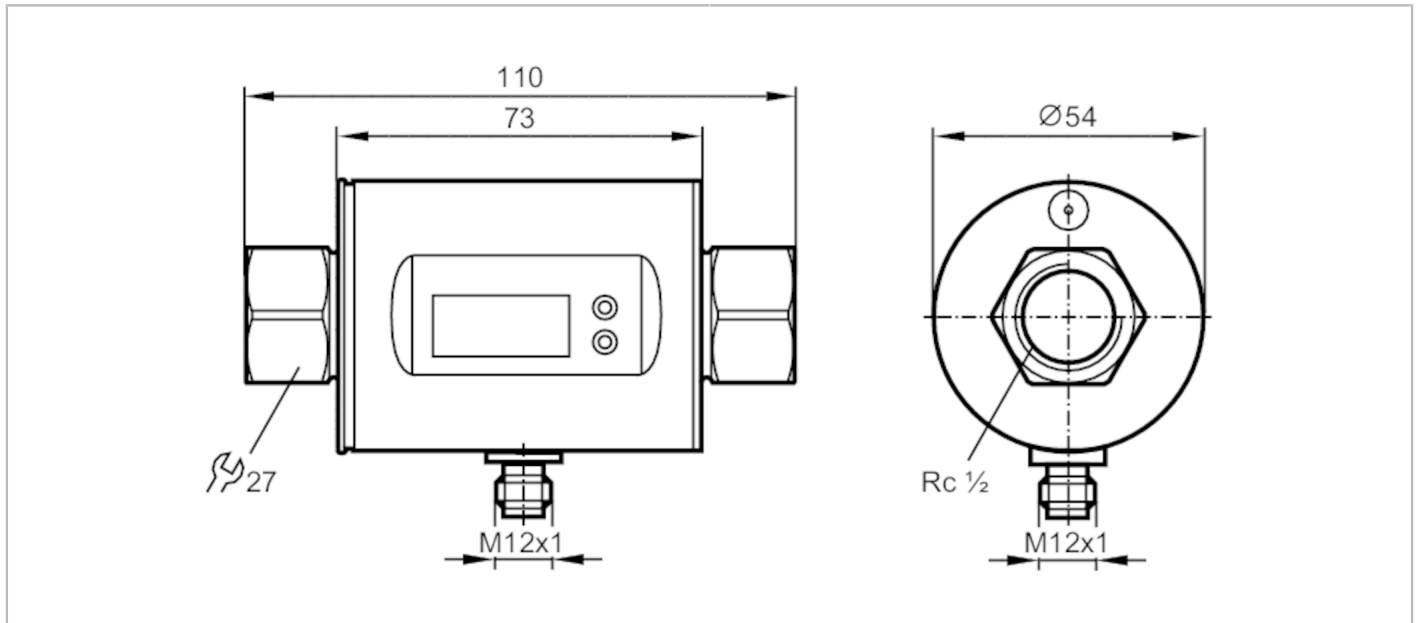


SM6400



Magnetic-inductive flow meter

SMK12GGXFRKG/US-100



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analog outputs: 1	
Measuring range	0.1...25 l/min	0.005...1.5 m ³ /h
Process connection	threaded connection Rc 1/2 Internal thread DN15	

Application

System	gold-plated contacts	
Application	Totalizer function; for industrial applications	
Media	Conductive liquids; water; water-based media	
Note on media	conductivity: $\geq 20 \mu\text{S/cm}$ viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C)	
Medium temperature [°C]	-10...70	
Pressure rating [bar]	16	
Pressure rating [MPa]	1.6	

Electrical data

Operating voltage [V]	18...30 DC; (to SELV/PELV)	
Current consumption [mA]	95; (24 V)	
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	
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Inputs

Inputs	counter reset	
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Outputs

Total number of outputs	2	
Output signal	switching signal; analog signal; pulse signal; IO-Link; (configurable)	

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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]	200
Number of analog outputs		1
Analog current output	[mA]	4...20; (scalable)
Max. load	[Ω]	500
Analog voltage output	[V]	0...10; (scalable)
Min. load resistance	[Ω]	2000
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	0.1...25 l/min	0.005...1.5 m ³ /h
Display range	-30...30 l/min	-1.8...1.8 m ³ /h
Resolution	0.02 l/min	0.002 m ³ /h
Set point SP	0.25...25 l/min	0.015...1.5 m ³ /h
Reset point rP	0.1...24.9 l/min	0.005...1.495 m ³ /h
Analog start point ASP	0...20 l/min	0...1.2 m ³ /h
Analog end point AEP	5...25 l/min	0.3...1.5 m ³ /h
In steps of	0.02 l/min	0.002 m ³ /h

Volumetric flow quantity monitoring

Pulse value		0.00001...30 000 m ³
Pulse length	[s]	0,01...2

Temperature monitoring

Measuring range	[°C]	-20...80
Resolution	[°C]	0.2
Set point SP	[°C]	-19.2...80
Reset point rP	[°C]	-19.6...79.6
Analog start point	[°C]	-20...60
Analog end point	[°C]	0...80
In steps of	[°C]	0.2

Accuracy / deviations

Flow monitoring

Accuracy (in the measuring range)		± (0,8 % MW + 0,5 % MEW)
Repeatability		± 0,2% MEW

Temperature monitoring

Accuracy	[K]	± 2,5 (Q > 1 l/min)
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Reaction times		
Flow monitoring		
Response time	[s]	0.15; (dAP = 0, T19)
Delay time programmable dS, dr	[s]	0...50
Damping process value dAP	[s]	0...5
Temperature monitoring		
Dynamic response T05 / T09	[s]	T09 = 20 (Q > 1 l/min)
Software / programming		
Parameter setting options	Flow monitoring; quantity meter; Preset counter; Temperature monitoring; hysteresis / window; normally open / closed; switching logic; current/voltage/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	
Profiles	Smart Sensor: Process Data Variable; Device Identification, Device Diagnosis	
SIO mode	yes	
Required master port class	A	
Process data analog	3	
Process data binary	2	
Min. process cycle time	[ms]	5
Supported DeviceIDs	Type of operation	DeviceID
	default	569
Operating conditions		
Ambient temperature	[°C]	-10...60
Storage temperature	[°C]	-25...80
Protection	IP 67	
Tests / approvals		
EMC	DIN EN 60947-5-9	
CPA approval	model number	001MI
	accuracy class	-
	maximum allowable error	± 1,5 % FS
	Q (min)	0,005 m³/h
	Q (t)	-
	Q (max)	1,5 m³/h
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]	145
UL approval	UL approval number	I010
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight	[g]	580.5
Material	stainless steel (1.4404 / 316L); PBT-GF20; PC; FKM; TPE	

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Materials (wetted parts)	stainless steel (1.4404 / 316L); PEEK; FKM
Process connection	threaded connection Rc 1/2 Internal thread DN15

Displays / operating elements

Display	Display unit	6 x LED, green (l/min, m ³ /h, l, m ³ , 10 ³ , °C)
	Switching status	2 x LED, yellow
	Measured values	alphanumeric display, 4-digit
	Programming	alphanumeric display, 4-digit

Remarks

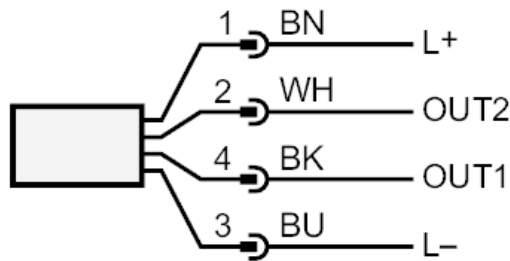
Remarks	MW = Measured value MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



Connection



- OUT1: Colors to DIN EN 60947-5-2
Switching output Volumetric flow quantity monitoring
Pulse output quantity meter
signal output Preset counter
IO-Link
- OUT2: Switching output Volumetric flow quantity monitoring
Switching output Temperature monitoring
analog output Volumetric flow quantity monitoring
analog output Temperature monitoring
Input counter reset
Core colors :
- BK = black
BN = brown
BU = blue
WH = white

SM6400

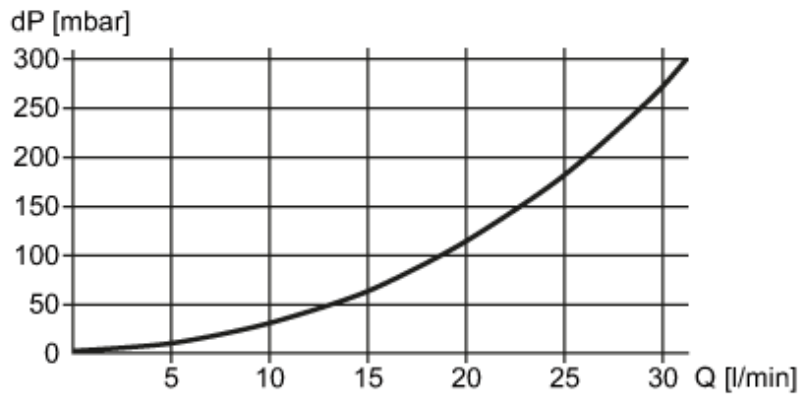


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Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity