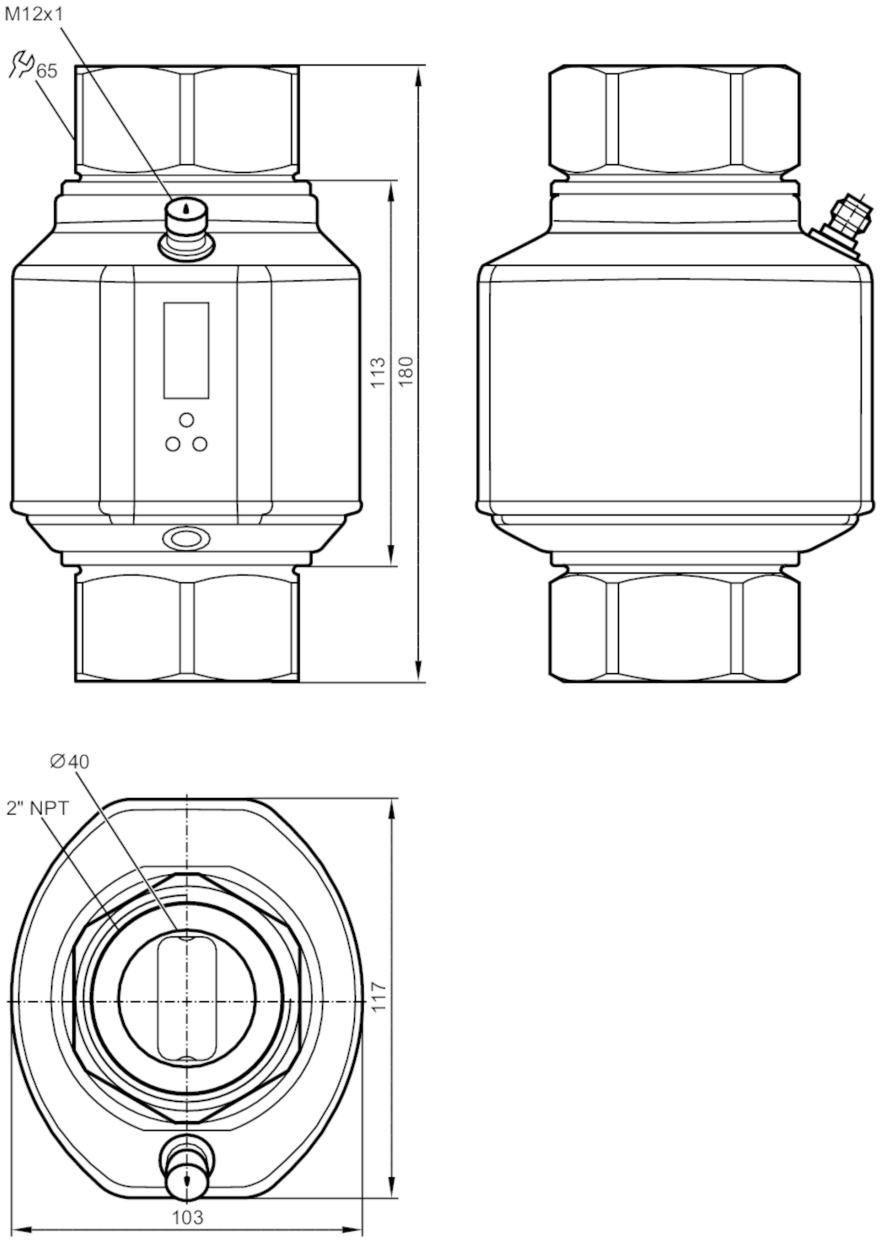
SM2601

Magnetic-inductive flow meter

SMN21XGXFRKG/US-100



CE CRN cULus LISTED EC 1935/2004 IO-Link UKCA

Product characteristics		
Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	80...9600 gph	1.3...160 gpm
Process connection	threaded connection 2" NPT DN50	

Application	
Special feature	Gold-plated contacts
Application	totaliser function; empty pipe detection; for industrial applications
Media	conductive liquids; water; hydrous media
Note on media	conductivity: ≥ 20 µS/cm
	viscosity: < 70 mm²/s (40 °C)

SM2601

Magnetic-inductive flow meter

SMN21XGXFRKG/US-100

Medium temperature	[°F]	14...194
Pressure rating	[bar]	16
Pressure rating	[psi]	232
MAWP (for applications according to CRN)	[bar]	16
Electrical data		
Operating voltage	[V]	18...32 DC; (to SELV/PELV)
Current consumption	[mA]	< 150
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 analogue outputs: 1
Inputs		
Inputs		counter reset
Outputs		
Total number of outputs		2
Output signal		switching signal; analogue signal; pulse signal; frequency signal; IO-Link; (configurable)
Electrical design		PNP/NPN
Number of digital outputs		2
Output function		normally open / normally closed; (parameterisable)
Max. voltage drop switching output DC	[V]	2
Permanent current rating of switching output DC	[mA]	250; (per output)
Number of analogue outputs		1
Analogue current output	[mA]	4...20; (scalable)
Max. load	[Ω]	500
Analogue 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		pulsed
Overload protection		yes
Frequency of the output	[Hz]	0.1...10000

Measuring/setting range		
Measuring range	80...9600 gph	1.3...160 gpm
Display range	-11520...11520 gph	-190...190 gpm
Resolution	5 gph	0.1 gpm
Set point SP	130...9600 gph	2.1...160 gpm
Reset point rP	80...9550 gph	1.3...159.2 gpm
Analogue start point ASP	0...7680 gph	0...128 gpm
Analogue end point AEP	1920...9600 gph	32...160 gpm
Low flow cut-off LFC	< 240 gph	< 4 gpm
In steps of	5 gph	0.1 gpm

SM2601

Magnetic-inductive flow meter

SMN21XGXFRKG/US-100

Measuring dynamics		1:120
Volumetric flow quantity monitoring		
Pulse value		0.02...160 E06 gal
In steps of		0.02 gal
Pulse length	[s]	0,008...2
Temperature monitoring		
Measuring range	[°F]	-4...176
Display range	[°F]	-40...212
Resolution	[°F]	0.5
Set point SP	[°F]	-2...176
Reset point rP	[°F]	-3...175
Analogue start point	[°F]	-4...140
Analogue end point	[°F]	32...176
In steps of	[°F]	0.5
Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)		± (0,8 % MW + 0,5 % MEW)
Repeatability		± 0,2% MEW
Temperature monitoring		
Temperature drift		± 0,0185 °F / K
Accuracy	[K]	± 1 (77 °F; Q > 4 gpm)
Response times		
Flow monitoring		
Response time	[s]	0.35; (dAP = 0)
Delay time programmable dS, dr	[s]	0...50
Damping process value dAP	[s]	0...5
Temperature monitoring		
Dynamic response T05 / T09	[s]	T09 = 3 (Q > 4 gpm)
Software / programming		
Parameter setting options		Flow monitoring; quantity meter; Preset counter; Temperature monitoring; hysteresis / window; normally open / normally closed; switching logic; current/voltage/frequency/ pulse output; start-up delay; display can be deactivated; Display unit; empty pipe detection
Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud)
IO-Link revision		1.1
SDCI standard		IEC 61131-9 CDV
Profiles		Smart Sensor: Process Data Variable; Device Identification
SIO mode		yes
Required master port type		A
Process data analogue		3
Process data binary		2

SM2601

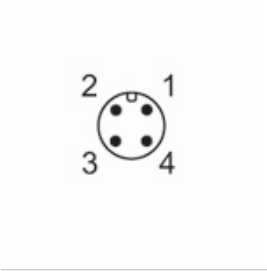
Magnetic-inductive flow meter

SMN21XGXFRKG/US-100

Min. process cycle time [ms]		5	
Supported DeviceIDs		**Type of operation**	**DeviceID**
		default	390
Operating conditions			
Ambient temperature [°F]		14...140	
Storage temperature [°F]		-13...176	
Protection		IP 65; IP 67	
Tests / approvals			
EMC		DIN EN 60947-5-9	
Shock resistance		DIN EN 60068-2-27	20 g (11 ms)
Vibration resistance		DIN EN 60068-2-6	5 g (10...2000 Hz)
MTTF [years]		85	
UL approval		UL Approval no.	I008
		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]		2643	
Materials		stainless steel (316L/1.4404); stainless steel (316Ti/1.4571); PEI; FKM; PBT-GF20; TPE-U	
Materials (wetted parts)		stainless steel (316L/1.4404); stainless steel (316Ti/1.4571); PEEK; FKM	
Process connection		threaded connection 2" NPT DN50	
Displays / operating elements			
Display	Display unit	6 x LED, green (gpm, gph, gal, °F, 10^3, 1000 x 10^3)	
	switching status	2 x LED, yellow	
	measured values	alphanumeric display, 4-digit	
	programming	alphanumeric display, 4-digit	
Accessories			
Items supplied		Label	
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

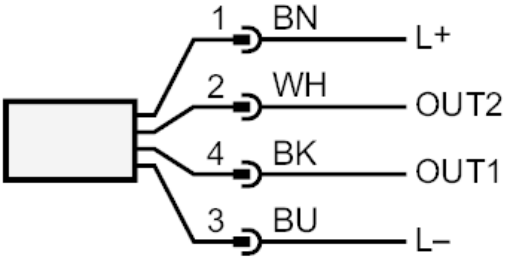


SM2601

Magnetic-inductive flow meter

SMN21XGXFRKG/US-100

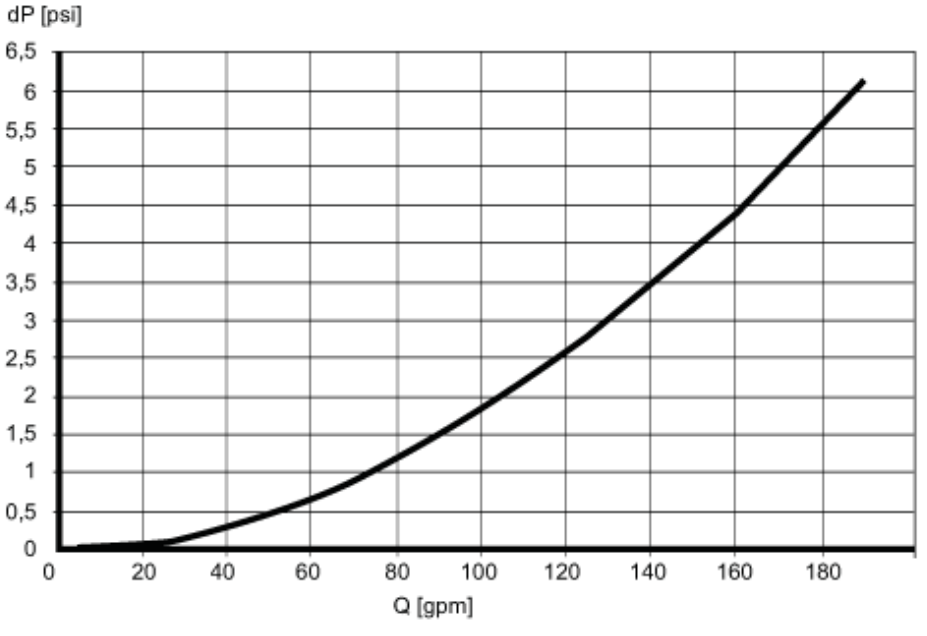
Connection



	colours to DIN EN 60947-5-2
OUT1:	switching output empty pipe detection
	switching output volumetric flow quantity monitoring
	frequency output volumetric flow quantity monitoring
	Pulse output quantity meter
	signal output Preset counter
	IO-Link
OUT2:	switching output empty pipe detection
	switching output volumetric flow quantity monitoring
	switching output Temperature monitoring
	analogue output volumetric flow quantity monitoring
	analogue output Temperature monitoring
	input counter reset
	Core colours :
BK =	black
BN =	brown
BU =	blue
WH =	white

Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity