

SU9000



Ultrasonic flow meter

SUR54HGBFRKG/W/US-100-IPF

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; (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]	250; (per output)	
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...200 l/min	0...12 m ³ /h
Display range	0...240 l/min	0...14.4 m ³ /h
Resolution	0.1 l/min	0.01 m ³ /h
Set point SP	0.4...200 l/min	0.02...12 m ³ /h
Reset point rP	0...199.6 l/min	0...11.98 m ³ /h
Analog start point ASP	0...160 l/min	0...9.6 m ³ /h
Analog end point AEP	40...200 l/min	2.4...12 m ³ /h
Max. flow rate	220 l/min	13.2 m ³ /h
In steps of	0.1 l/min	0.01 m ³ /h
Volumetric flow quantity monitoring		
Pulse value	0.1 l...100000 m ³	
Pulse length [s]	0,0125...2	
Temperature monitoring		
Measuring range [°C]	-10...80	
Resolution [°C]	0.2	
Set point SP [°C]	-9.8...80	
Reset point rP [°C]	-10...79.8	
Analog start point [°C]	-10...62	
Analog end point [°C]	8...80	
In steps of [°C]	0.2	

SU9000



Ultrasonic flow meter

SUR54HGBFRKG/W/US-100-IPF

Accuracy / deviations		
Flow monitoring		
Accuracy (in the measuring range)	water: $< \pm (3 \% MW + 0,2 \% MEW)$; glycol (35 %), oil (viscosity 68 mm ² /s at 40 °C): $< \pm (8 \% MW + 0,5 \% MEW)$	
Repeatability	1 l/min; 60 l/h; 0,06 m ³ /h	
Temperature monitoring		
Accuracy [K]	$\pm 3 (Q > 20 \text{ l/min})$	
Reaction times		
Flow monitoring		
Response time [s]	0.25; (dAP = 0)	
Delay time programmable dS, dr [s]	0...50	
Damping process value dAP [s]	0...1	
Temperature monitoring		
Dynamic response T05 / T09 [s]	T09 = 30 (Q > 20 l/min); (water)	
Software / programming		
Parameter setting options	Flow monitoring; quantity meter; Preset counter; Temperature monitoring	
Operating conditions		
Ambient temperature [°C]	-10...60	
Storage temperature [°C]	-25...80	
Protection	IP 67	
Tests / approvals		
EMC	EN 61000-4-2 ESD	4 kV CD / 8 kV AD
	EN 61000-4-3 HF radiated	10 V/m
	EN 61000-4-4 Burst	2 kV
	EN 61000-4-5 Surge	0,5 kV
	EN 61000-4-6 HF conducted	10 V
	CPA approval	model number
accuracy class		3
maximum allowable error		-
Q (min)		0,3 m ³ /h
Q (t)		0,84 m ³ /h
Q (max)		12 m ³ /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]	185	
Pressure equipment directive	sound engineering practice; can be used for group 2 fluids; group 1 fluids on request	
Mechanical data		
Weight [g]	1906.5	
Housing	rectangular	
Dimensions [mm]	130 x 100 x 80.5	
Material	housing: AlMgSi0.5 anodized; sealing: FKM; PA 6.6; cover film: PA	
Materials (wetted parts)	Pipe section: stainless steel (1.4404 / 316L); Process connection sealing: NBR fiber-reinforced Gasket; FKM; PPS	
Process connection	threaded connection G 1 1/4 external thread flat seal	

SU9000



Ultrasonic flow meter

SUR54HGBFRKG/W/US-100-IPF

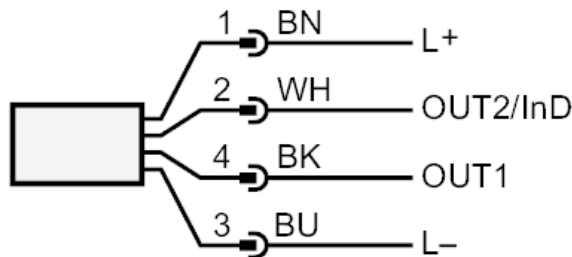
Displays / operating elements		
Display	Display unit	6 x LED, green (l/min, m ³ /h, l, m ³ , 10 ³ , °C)
	Switching status	2 x LED, yellow
	Measured values	alphanumeric display, 4-digit
	Programming	alphanumeric display, 4-digit
Accessories		
Items supplied	sealings: 2, Centellen	
Accessories (optional)	adapter for pipe: 1 x R 1, stainless steel, E40205	
Remarks		
Remarks	sealing: only with supplied Centellen seals	
	MW = Measured value	
	MEW = Final value of the measuring range	
Pack quantity	1 pcs.	

Electrical connection

Connector: 1 x M12; coding: A; Moulded body: brass, Optalloy-plated; Contacts: gold-plated



Connection



- OUT1: Switching output Volumetric flow quantity monitoring
Pulse output quantity meter
signal output Preset counter
- OUT2/InD: Switching output Volumetric flow quantity monitoring / Temperature monitoring
analog output Volumetric flow quantity monitoring / Temperature monitoring
Input counter reset

SU9000

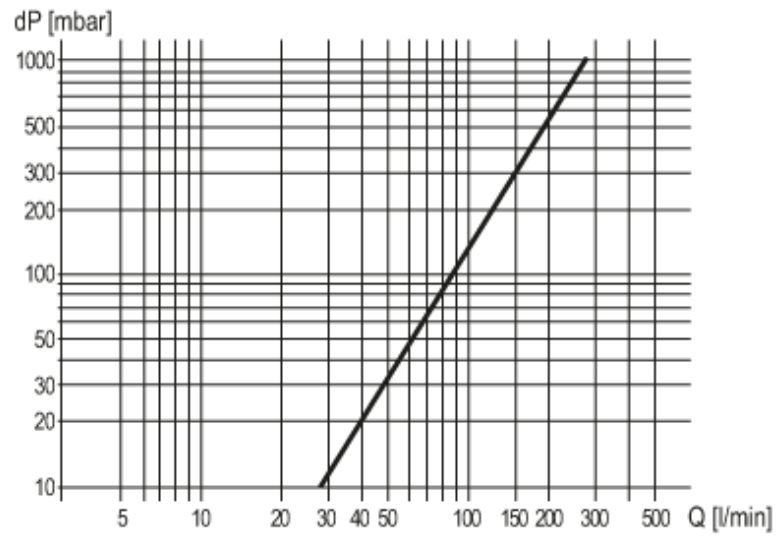
Ultrasonic flow meter

SUR54HGBFRKG/W/US-100-IPF



Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity