




# SPECIFICATIONS SHEET FOCUS-1, DN 50 & 2 inch



## FOCUS-1 and FOCUS-1\_Ex

MEDIA		Single phase liquid with <5% solid content, <2% gas content and max. Viscosity up to 150 cSt						
APPLICATIONS		Direct Flow control applications can replace a valve or a combination of valves with other flow control applications						
DESCRIPTIONS		CONTROL ELEMENT		MEASUREMENT SENSOR ELEMENTS				
ELEMENT NAME		Valve		Flow	Pressure	Temperature		
TECHNOLOGY		Valve position % or Process control		Ultrasonic flow measurement	Thin film technology	PT 100		
DEVICE INFORMATION		DN 50 and 2 inch				Temperature		
							Velocity of sound	Inlet pressure
							Volumetric flowrate	Outlet pressure
		Total Weight = approx. 70 kg		Differential pressure				
TECHNICAL PARAMETERS		Overall Control Accuracy	With an inbuilt PID controller, control accuracy is < 1%	Measurement accuracy	Uncertainty better than 0,5% of setpoint value and stability better than + 0,2%			
		Max flow velocity	Typically, up to 7m/s	Pressure measurement range	0 to 40 barg 0 to 300 lbs.			
		Rangeability	50:1	Burst pressure	120 bar g			
		Face to Face	Same as ultrasonic flowmeter	Temperature measurement range	-40 up to 180 °C			
MATERIAL OF CONSTRUCTION		Body	1.4408 / ASTM A351 Gr.CF8M	Bonnet	AISI 316L / A351 CF8M			
		Stem	1.4404 / 316L	Process Connection	1.4404 / 316L / A351 CF8M			
		Plug	1.4404 / 316L	Housing	1.4404 / 316L			
		Seat	1.4404 / 316L	P/T Sensor Diaphragm	1.4548 / 17-4PH			
		Packing / Gasket	PTFE/PTFE with Carbon PTFE / Graphite on metal core Silicone					
DEVICE PARAMETERS		Seat leakage	ANSI Class IV & ANSI Class V		Electrical connection Spring clamp connections according to VDE 0100  <b>Air Filter Regulator</b> Optional Pneumatic conn. 1/2" NPT Air supply min/max 3.8 Bar.g / 6 Bar.g Power supply 100 ... 230 V a.c., 50/60 Hz 18 ... 32 V d.c. Power Consumption < 30 VA (AC variant) < 30 Watt (DC variant)			
		Size	SB 24: Kv10 or Cv12 SB 38: Kv25 or Cv30 SB 48: Kv40 or Cv47 for 100% Opening					
		Pressure class	ANSI 150 # / 300# PN 16 / PN 40					
		End connection	Flanged connections according to ANSI B16.5 or DIN/EN 1092-1B1 <Ra 3,2 ... 12,5µm>					
		Trim type	Standard V - Port plug, with Metal seal					
		Flow characteristics	EQ %					
				Cable entry connection compartment		M20X1.5 - metallic cable glands *Standard for FOCUS-1 (non-Ex) *IEC Ex, ATEX Ex eb certified for FOCUS-1_Ex (Ex variant)		



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FOCUS-1 DEVICE PARAMETERS			PRE-REQUISITES FOR INSTALLATION	
Design pressure Min. / Max.	Depends on the pressure class		Inlet run	Min. 4 DN (Straight inlet)
Design temperature Min. / Max.	-20 °C / -40 °C up to +180 °C		Outlet run	0 DN (Straight outlet)
Ambient conditions Min. / Max.	-20 °C up to +55 °C		Face to Face Dimension	2"-inch ANSI 150: 300 mm 2" Inch ANSI 300: 300 mm DN 50 PN 16: 300 mm DN 50 PN 40: 300 mm
DEVICE MANAGEMENT & VALUE-ADDED FEATURES		APPROVALS & CERTIFICATES		
General	An integrated measurement & control device with capabilities to measure flow, pressure & temperature & also control flow. Powered with an onboard computer with diagnostic capabilities & generating real-time product & process alarms.	NAMUR	NE21, 43, 53, 80, 107	
Input & Output	<b>FOCUS-1.Non-Ex :</b> 4 - 20 mA current input with HART7® passive 4 - 20 mA current output passive and active <b>FOCUS-1.EX :</b> 4 - 20 mA current input passive 4 - 20 mA current output with HART7® passive 4 - 20 mA current input passive (see external sensor)	Ingress Protection IEC 529/EN60529	IP66	
External Sensor Input	4 - 20 mA current input passive via an external sensor as a set point (available only for the Ex-variant).	CE	2014/68/EU - RED Radio Equipment	
Digital Twin Technology	Sensor redundancy is based on an algorithm board that uses correlation of dynamic process data to generate model values for key process parameters like flow, pressure & temperature in case of sensor failure.		2014/68/EU - PED Eq. under pressure	
Remote Access for Control & Maintenance	User-based controlled access to the device through Wi-Fi with a single button on the device or via wired ethernet connection with dual password protection to the internal web server on a smartphone, tablet, or laptop for easy and secure installation, configuration & maintenance.		2006/42/EU Machinery Direct.	
Set point Control	With integrated sensor technology & onboard PID controller, Process control can be through set points via valve position, flow, inlet and outlet pressure & also pressure drop for fast & accurate control in the process loop.		2014/34/EU - ATEX Eq. for HAZLOC	
PID Auto Tuning	Algorithm-based autotuning of inbuilt PID controller reaction to setpoint changes and unmeasured disturbances such that variability of control error is minimized to ensure consistent product quality.	Hazardous Area Classification (HAZLOC)	2011/65/EU - ROHS	
Single button control & Bluetooth	Single button for easy and secure installation & maintenance access via smartphone, tablet, or laptop		Hazardous Area Classification	Humidity 15%-100%
Wi-Fi	According to standard 802.11 b/g/n Range: up to 180 m Frequency: 2.4 GHz to 2.4835 GHz Operating channels -11: (Ch. 1-11) - USA & North America -13: (Ch. 1-13) - Europe -14: (Ch. 1-14) - Japan			Altitude 2000m
Communication protocols	4-20mA, HART7® (non-Ex and Ex variants), Profinet (non-Ex variant only), EtherNet/IP (non-Ex variant only)		<b>FOCUS-1</b> device for non-HAZLOC <b>FOCUS-1.Ex</b> device for ZONE 1 HAZLOC	
Health status communication	Communication via LED Ring in colors as per NAMUR NE107 & NE43 standards and via HART7®	Shock Resistance	IEC 65-2-2730g for 18ms	
Languages dashboard	English, German, French	Vibration Resistance	IEC 68-2-6; 0,5g 1800Hz up to 1800 Hz IEC 60721; 15g	
On board data storage	Timestamped logs of process & diagnostic data, sufficient for 14 months of condensed data and 14 weeks of raw data.		IT Security	According to IEC 62443 (no certificate)
Webserver	Integrated for installation & service			