




# SPECIFICATIONS SHEET FOCUS-1, DN 100 & 4 inch

## FOCUS-1 and FOCUS-1 Ex (DRAFT)

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 100, 4 inch		 <p>Total Weight = approx. 120 kg</p>		Velocity of sound	Inlet pressure	Temperature
						Volumetric flowrate	Outlet pressure	
							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 bar g 0 to 300 lbs.			
	Rangeability	50:1		Burst pressure	120 bar g			
	Face to Face	As per ISA 75.08 or EN 558-1		Temperature measurement range	-40 up to 180 °C			
MATERIAL OF CONSTRUCTION	Body / Bonnet	1.4408 / ASTM A351 Gr.CF8M		Bonnet	AISI 316L / A351 CF8M			
	Stem	1.4404 / 316L		Process Connection	1.4404 /316L / A351CF8M			
	Plug	1.4404 / 316L		Housing	1.4404 /316L			
	Seat	1.4404 / 316L		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		DEVICE PARAMETERS	Electrical connection	Spring clamp connections according to VDE 0100		
	Size	SB 63: Kv63 or Cv75 SB 80: Kv100 or Cv120 SB 100: Kv160 or Cv190 for 100% Opening				Air Filter Regulator	Optional	
	Pressure class	ANSI 150 # / 300# PN 16 / PN 40			Pneumatic conn.	1/2" NPT		
	End connection	Flanged connections according to ANSI B16.5 or DIN/EN 1092-1 B1 <Ra 3,2 ... 12,5µm>			Air supply min/max	3.8 Bar.g / 6 Bar.g		
	Trim type	Standard V - Port plug, with Metal seal			Power supply	100 ... 230 V a.c., 50/60 Hz 18 ... 32 V d.c.		
	Flow characteristics	EQ %			Power Consumption	< 30 VA ( AC variant) < 15 Watt ( DC variant)		
						Cable entry connection compartment	M20X1.5 - metallic cable glands *Standard for FOCUS-1(non-Ex) *IECEX, 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	4" inch ANSI 150: 352mm 4" Inch ANSI 300: 368 mm  DN 100 PN 16 : 350 mm DN 100 PN 40 : 350 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 <sup>®</sup> 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 <sup>®</sup> 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 2014/68/EU - PED Eq. under pressure 2006/42/EU Machinery Direct. 2014/34/EU - ATEX Eq. for HAZLOC 2011/65/EU - ROHS				
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.		<table border="1"> <tr> <td>Humidity</td> <td>15 %-100%</td> </tr> <tr> <td>Altitude</td> <td>2000m</td> </tr> </table>	Humidity	15 %-100%	Altitude	2000m
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Altitude	2000m						
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.						
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.	Hazardous Area Classification (HAZLOC)	FOCUS-1 device for non-HAZLOC  FOCUS-1 Ex device for ZONE 1 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.						
Single button control & Bluetooth	Single button for easy and secure installation & maintenance access via smartphone, tablet or laptop	Hazardous Area Classification  	Europe : ATEX II 2G Ex eb db [ib] IIB+H2 T4/T5 Gb  International: IECEx Ex eb db [ib] IIB+H2 T4/T5 Gb				
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						
Communication protocols	4-20mA, HART7 <sup>®</sup> (non-Ex and Ex variants), Profinet (non-Ex variant only), EtherNet/IP (non-Ex variant only)	Shock Resistance	IEC 65-2-2730g for 18ms				
Health status communication	Communication via LED Ring in colors as per NAMUR NE107 & NE43 standards and via HART7 <sup>®</sup>						
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.						
Webserver	Integrated for installation & service	IT Security	According to IEC 62443 (no certificate)				

