TECHNICAL INFORMATION Analog i-captor 4120.30

The Evolution of Flow Technology

In 1968, Gunther Weber began producing the first modern day mass flow meters and switches using platinum sensors instead of a hot wire for commercial and industrial applications. Webers flow products were built specifically for the extremely harsh steel industry environment with such meticulous detail to both precision and reliability that nearly four and a half decades later they are still the gold standard in the steel industry. Over the years, many companies have copied Webers idea but none have matched Webers legendary reliability.

The new 4120.30 represents the logical evolution with modern microprocessor intelligence with over 4 decades of thermal flow expertise.

The 4120.30 includes standard features such as highly accurate temperature sensing and provides both linear 4-20mA outputs for flow and temperature as well as RS-485 Modbus RTU digital signalling. A button is provided to set the flow range for the 4-20mA signal and to reset the unit back to factory defaults.

- counter totalizer
- both Modbus RTU and 4-20mA outputs
- encapsulated for vibration resistance
- withstands up to 1450 psi (100 bar) static pressure
- no moving parts
- made in USA

weber

Technical Data					
Туре	4120.30				
Medium	Oil or water-based solutions				
Sensor Data					
Measuring velocity range	0-300 cm/s (0-10 ft/sec), auto-ranging				
Measuring temperature range	0°C to 100°C (32° F to 212° F				
Medium temperature	-20°C to +90°C (-4 °F to +175 °F				
Pressure	up to 100 bar (1,450 psi)				
Response time	Max 5 seconds normal flow				
Accuracy	< +-2% over range				
Repeatability	< 2%				
Mechanical Data					
Protection class	IP 65				
Housing material	PBTP, glassfibre reinforced (Ultradur ®)				
Sensor head	stainless steel (WN1.4305 (V2A, 303 Ti) as standard				
	stainless steel (WN 1.4571(V4A , 316 Ti), Titanium , Hastelloy C4 [®] and Hastelloy C22 [®] on request				
Thread	1/2" 14 - NPT, 1/4" NPT on request; G 1/2" BSP				
Connection	M12-plug, 8-pin				
Electrical Data (Electronic hou- sing)					
Operating voltage	18 to 30VDC, incl. residual ripple				
Ambient temperature	-20 °C to +70 °C (-4° F to 158° F)				
Initial operation	approx. 10 s after connection of power				





TECHNICAL INFORMATION

Analog i-captor 4120.30



Products								
Interface	4-20mA Flow and Temperature, RS-485 Modbus RTU for all readings							
Sensor Data								
Temperature drift	<0.1%/K							
Mechanical Data								
Material: Probe	stainless steel AISI 303 (A: AISI 316Ti; B: Titanium; C: Hastelloy ® C4; D: Hastelloy ® C22)							
Sensor Probe Sizes	 a) 4120.30 ¼" NPT; G ¼" BSP Length 20 mm b) 4120.30 ½" NPT; G ½" BSP Length 30 mm c) 4120.30 S110/45 ½" NPT; G ½" BSP Length 45 mm d) 4120.30 S110/67 ¼" NPT; G ½" BSP 							
	a b c d f al Length 67 mm							
Electrical connection	Integrated plug with M12 fitting							
Electrical Data								
Current consumption	Max. 250 mA (pulsed)							
Power consumption	Approx. 1W							
Circuit protection	Circuit protection Reverse polarity, short circuit, and overload							

Wiring Diagram



Weber Sensors Ltd. · Strohdeich 32 · D-25377 Kollmar · Tel.: +49 4128-591 · Fax: -593 eMail: info@captor.de Technical data subject to alteration! REV. AA / 15.11.16

TECHNICAL INFORMATION

Analog i-captor 4120.30



Modbus Registers

Legend										
Register				All registers are holding registers						
RW		R		Read-only						
		RW		Read Write						
NV		Va	alue is s	tored in flash						
Format C			Character value (1 Modhus register						
Tonnat				Integer value (1 Modbus register)						
			20 hit Integer MSR first (0 Medbus register)							
L		32 bit integer, MSB first (2 Modbus rtegister)								
	F			32-bit floating point; Upper 16-bits (MSR) in lowest - numbered / first listed register (257/258 = MSR/LSR). Encoding is per IEEE standard 754 single precision.						
		S		String (8 chars)						
		LS		Long String (20 chars)						
Register		RW	1	NV	Format	Range	Description			
Measurer	nents					· ·				
()	В			F		Volumetric Flow			
2 BW			F		Totalized Flow					
	4	B			F		Temperature			
6	3	R					Flow Volocity			
1(6 R			1						
Madhua	50	n			I		Cycle Count			
512 R		RW		NV	I	1-254	Modbus Slave Address [factory default 42]			
514		RW		NV	L	300-115200	Baud Rate [factory default 38400]			
Units										
1000	RW	NV	I	Units of measure [f gisters in this group	Units of measure [factory default 1]. See table below; this sets all the re- gisters in this group except 1256, 1136, and 1140					
70	RW	NV	S	velocity description	automatically set by	y register 1000	eg "m/s"			
50	RW	NV	S	As above for volum	e flow units; eg "lpm	ו"				
60	RW	NV	S	As above for temperature unit; eg "C"						
80	RW	NV	S	As above for totalizer units; eg "liters"						
90	RW	NV	S	As above for pipe size units; eg, "mm"						
1256	RW	NV	F	Inner diameter of the pipe						
1136	RW	NV	F	Minimum readable	velocity (velocities b	elow this thres	hold will read as 0)			
Identity										
903	R	NV	I	Serial Number						
905	R	NV	I	Hardware Revision						
910	RW	NV	LS	Sensor Location Identifier (eg chilled water 2)						
920	R	NV	I	Temp Exceeded Flag						
950	R	NV	S	Device Identity String (i-captor 4.102)						
Master unit Modes				Refers to register 1000						
0				Mixed/Custom						
1				C, m/s, LPM, Liters						
2										
3				F, ft/s, GPH, Gallons						