

i-captor 4120.30

The i-captor type 4120.30; ideal for all measurement and control tasks within automation processes and other industrial applications in which liquid media must be controlled. The 4120.30 works according to a calorimetric measuring principle developed on the basis of modern microprocessor technology; this allows the measuring range to be adapted to a large quantity spectrum.



- precise flow measuring
- adjustable measuring range
- analog current and temperature output 4 – 20 mA
- digital signal transmission via RS-485 Modbus
- encapsulated for vibration resistance
- electronic function without mechanically moved parts.
- **Made in USA**

Technical data

Type	4120.30
Interface	4 - 20 mA flow and temperature, RS-485 Modbus RTU for all readings
Medium	oil or water-based

Sensor data

Measuring velocity range	0 - 300 cm/s (0 -10 ft/sec), auto-ranging
Measuring temperature range	0 °C - +100 °C / +32 °F - +212 °F
Medium temperature	-20 °C - +90 °C / -4 °F - +175 °F
Temperature drift	< 0.1 % K
Pressure	up to 100 bar (1.450 psi)
Response time	max. 5 sec. at normal flow
Accuracy	< ±2 % over range
Repeatability	< 2 %

Mechanical data

Protection class	IP 65
Housing material	PBTP, glassfibre reinforced (Ultradur [®])
Sensor head material	stainless steel AISI 303 (other material on request)
Sensor thread	1/4" NPT or 1/2"-14 NPT (G 1/2" BSP on request)
Electrical connection	8-pin M12-plug

Electrical data

Operating voltage	18 - 30 VDC, incl. residual ripple
Ambient temperature	-20 °C - +70 °C / -4 °F - +158 °
Initial operation	approx. 10 sec. after connection of power

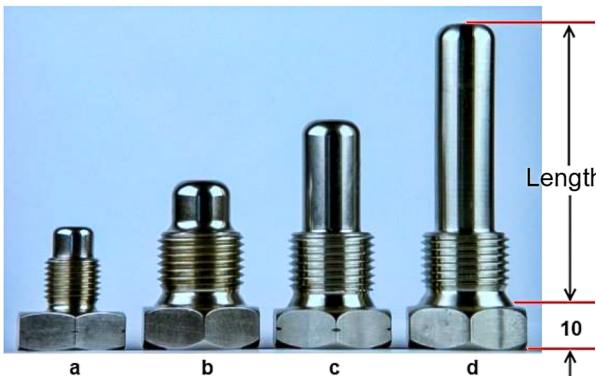
weber

Sensors GmbH Strohdeich 32
Sensors Ltd. 66 Eastbourne Road, Southport
Sensors LLC. 4462 Bretton Court, Building 1, Suite 7

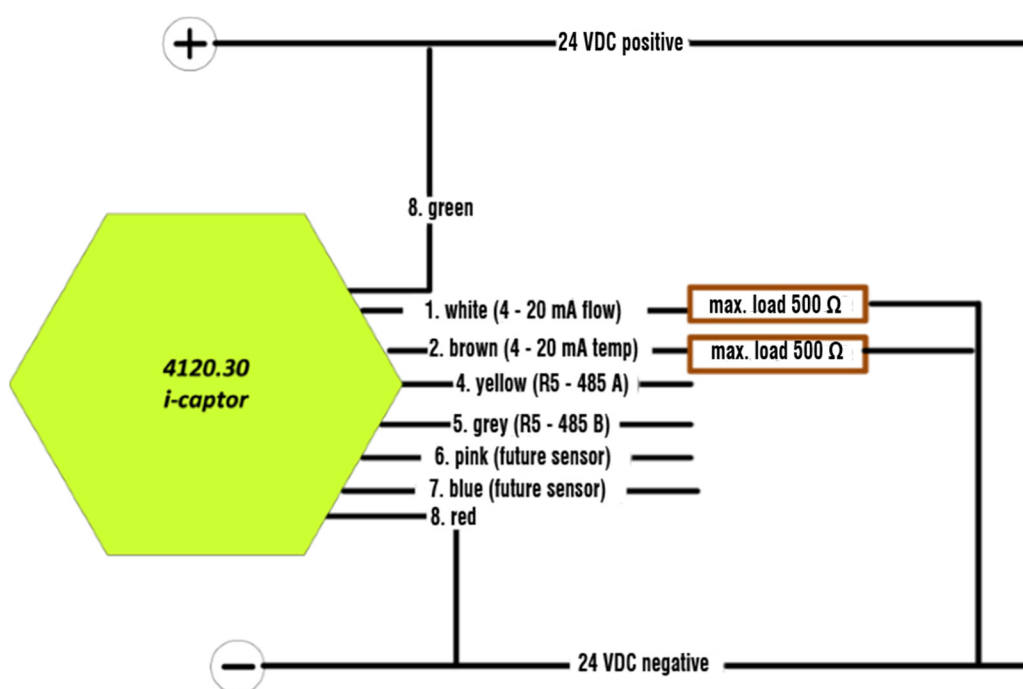
DE-25377 Kollmar, Germany Tel.: +49 (0)4128 - 591 · Fax: - 593
Merseyside PR8 4DU, UK Tel.: +44 (1704) - 551684 · Fax: - 551297
Acworth, Georgia 30101, USA Tel.: +1 (770) 592 - 6630 · Fax: - 592 6640

www.captor.de
info@captor.de
sales@captor.co.uk
sales@captor.com

i-captor 4120.30

Current consumption	max. 250 mA (pulsed)
Power consumption	approx. 1 W
Circuit protection	reverse polarity, short circuit and overload
Sensor probe sizes A = sensor head material AISI 316	
(S110/xx) sensor head length (from hexagon nut to sensor tip)	
	a) 4120.30 1/4" NPT or G 1/4" BSP Length 20 mm b) 4120.30 1/2" -14 NPT or G 1/2" BSP Length 30 mm c) 4120.30A S110/45 1/2" -14NPT or G 1/2" BSP Length 45 mm d) 4120.30A S110/67 1/2" -14NPT or G 1/2" BSP Length 67 mm
extended sensor probes are generally made of AISI 316	

Wiring diagram



i-captor 4120.30

Modbus registers

Legend

Register		all registers are holding registers		
RW	R	read only		
	RW	read write		
NV		value is stored in flash		
Format	C	character value (1 Modbus register)		
	I	integer value (1 Modbus register)		
	L	32 bit integer, MSB first (2 modbus register)		
	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 measurements	RW	NV	Format	Range	Description
0	R		F		volumetric flow
2	RW		F		totalized flow
4	R		F		temperature
6	R		F		flow velocity
100	R		I		cycle count

Modbus

512	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 [factory default 1]. see table below; this sets all the registers in this group except 1256, 1136, and 1140	
70	RW	NV	S	velocity description automatically set by register 1000 eg "m/s"	
50	RW	NV	S	as above for volume flow units; eg "lpm"	
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 below this threshold 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		F, ft/s, GPM, gallons			
3		F, ft/s, GPH, gallons			