

## 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	<b>4120.30</b>
Interface	4 - 20 mA flow and temperature, RS-485 Modbus RTU for all readings
Medium	oil or water-based
<b>Sensor data</b>	
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 %
<b>Mechanical data</b>	
Protection class	IP 65
Housing material	PBTP, glassfibre reinforced (Ultradur <sup>®</sup> )
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
<b>Electrical data</b>	
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

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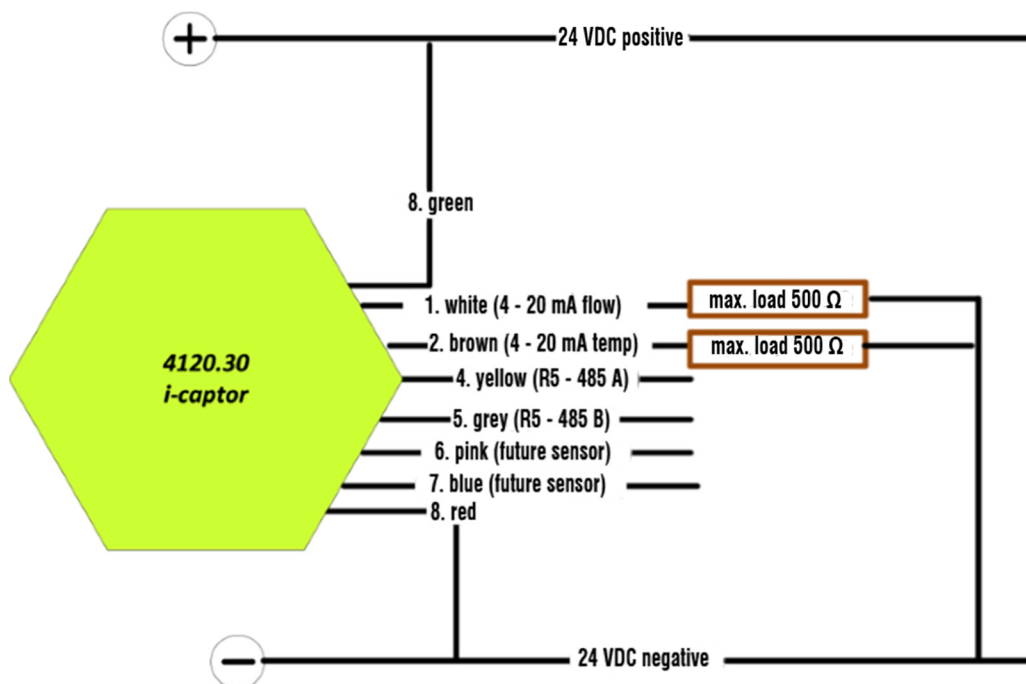
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## i-captor 4120.30

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

Wiring diagram



## i-captor 4120.30

### Modbus registers

#### Legend

Register		all registers are holding registers
RW	<b>R</b>	read only
	<b>RW</b>	read write
NV		value is stored in flash
Format	<b>C</b>	character value (1 Modbus register)
	<b>I</b>	integer value (1 Modbus register)
	<b>L</b>	32 bit integer, MSB first (2 modbus register)
	<b>F</b>	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.
	<b>S</b>	string (8 chars)
	<b>LS</b>	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

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