C520

HART Compatible Universal Dual-input 2-wire Transmitters

SIL 2 · Ex · C · CE · 5 YEAR WARRANTY

Pending: SP · FM APPROVED

The 520 transmitters are universal, isolated, dual-input temperature transmitters with additional voltage and resistance input. The C520N is approved for Non-Incendive use in Ex-Zone 2. C520X/C520XS are Intrinsically Safe versions for use in Ex-Zone 0, 1 and 2.
The transmitters are compatible with the HART 6 protocol.
Typical characteristics are the high accuracy, stability and reliability combined with a robust housing.
The double inputs enable new safety features such as Sensor Backup and Sensor Drift Monitoring.

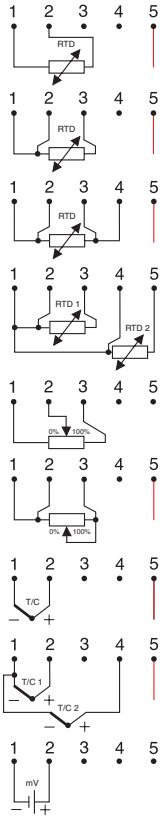
- Universal, dual-input for RTD and T/C
- SIL 2 compatible according to IEC 61508-2
- HART 6 protocol
- High accuracy
- 5 year guaranted stability
- Withstands 10 g vibrations
- Complies with NAMUR NE 21, NE 43, NE 53, NE 89 and NE 107
- EMC immunity according to Criteria A
- Sensor Backup
- Sensor Drift Monitoring
- Sensor Isolation Monitoring
- Sensor matching
- 50 point customized linearization
- Integrated in Emerson AMS and Siemens PDM systems

Specifications:

Input RTD		
Pt100	(IEC 60751, α=0.00385)	-200 to +850 °C
PtX (10 ≤ X ≤ 1000)	(IEC 60751, α=0.00385)	Corresp. to max. 4 000 Ω
Pt100	(JIS C 1604, α=0.003916)	-200 to +850 °C
Ni100	(DIN 43760)	-60 to +250 °C
Ni120	(Edison Curve No. 7)	-60 to +250 °C
Ni1000	(DIN 43760)	-50 to +180 °C
Cu10	(Edison Cu Windings No. 15)	-50 to +200 °C
Input connections	One sensor	2-, 3- and 4-wire connection
	Two sensors	2- and 3-wire connection
Input Thermocouple	T/C types	B, C, D, E, J, K, N, R, S, T
Input Resistance	Potentiometer	100 to 4000 Ω, 2-, 3- and 4-wire connection
Input Voltage		-10 to +1000 mV
Double inputs for RTD and Thermocouple		
Measure mode		T1 or T2 or difference, average, min, max of T1 and T2
Sensor Redundancy		Automatic switchover to undamaged sensor
Sensor Drift Monitoring		Adjustable maximum temp. difference T1-T2
Output		
Output signal	Temperature linear	4-20 mA, 20-4 mA or customized
NAMUR compliance	Measure and fail currents	NAMUR, NE 43
Galvanic isolation		1500 VAC, 1 min
Ex-classifications	C520N	ATEX: II 3 G Ex nL IIC T4-T6 Pending: FM, CSA, IECEx, GOST
	C520X/C520XS	ATEX: II 1 G Ex ia IIC T4-T6 Pending: FM, CSA, IECEx, GOST
Power supply	C520/C520N/C520S	10 to 36 VDC, Standard power supply
	C520X/C520XS	10 to 30 VDC, I.S. power supply
Ambient temperature	Storage/operation	-40 to +85 °C
Accuracy	RTD (Pt and Ni sensors)	Max. of ±0.1 °C or ±0.05 % of span
	Thermocouple	Typical ±0.05 % of span
	Resistance/voltage	See data sheet
Long-term stability		Max. drift: ±0.05 % of span / 5 years
Connection head		DIN B or larger

Input connections

See data sheet for more alternatives



RTD
2-wire connection
Low isolation detection lead

RTD
3-wire connection
Low isolation detection lead

RTD
4-wire connection
Low isolation detection lead

Double RTD
3-wire connection

Potentiometer
3-wire connection

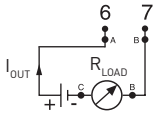
Resistance
3-wire connection
Low isolation detection lead

Thermocouple
Low isolation detection lead

Double thermocouple
Low isolation detection lead

VoltagemV

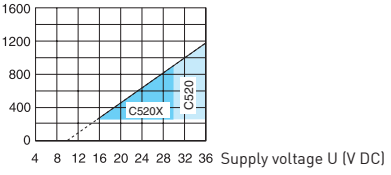
Output connections



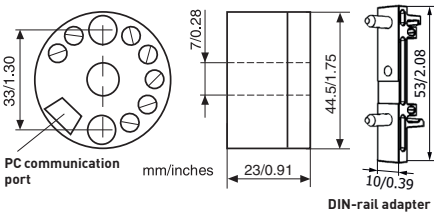
A-B and B-C are possible connections for HART modem or Communicator

Output load diagram

$R_{LOAD}(\Omega) = (U-10)/0.022$



Dimensions



Ordering information

C520	70C5200010
C520S, SIL 2 compatible	70C5200S10
C520N	70C520N010
C520X	70C520X010
C520XS, SIL 2 compatible	70C520XS10
ICON PC configuration kit (USB-conn.)	70CFGUS001
Configuration	70CAL00001
Head mounting kit	70ADA00017
DIN-rail adapter	70ADA00015