



R520

**HART Compatible
Universal
Dual-input
2-wire Transmitters**



R520/R520S are universal, isolated, dual-input temperature transmitters with additional voltage and resistance input, approved for Non-Incendive use in Ex-Zone 2. R520X/R520XS are Intrinsically Safe versions for use in Ex-Zone 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*.

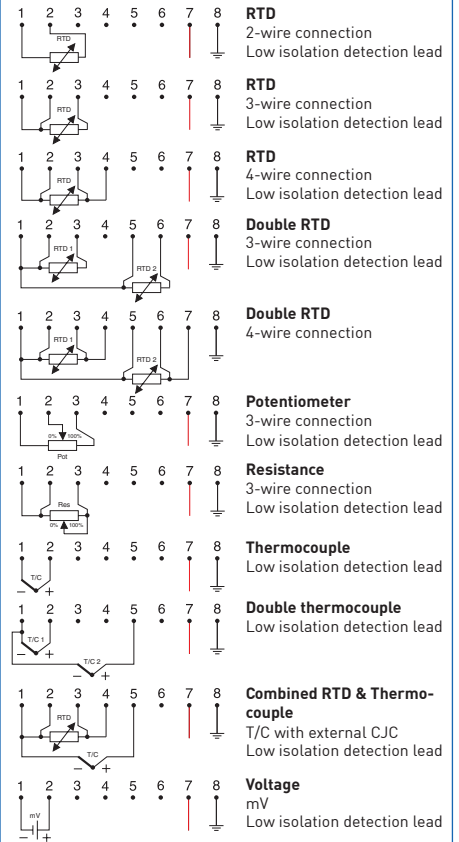
- Universal, dual-input for RTD and T/C
- SIL 2 compatible
- HART 6 protocol
- High accuracy
- 5 year guaranteed stability
- Withstands 10 g vibrations
- Complies with NAMUR NE 21, NE 43, NE 53, NE 89 and NE 107
- EMC immunity according to Criteria A
- Sensor Backup
- Sensor Drift Monitoring
- Sensor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

Specifications:

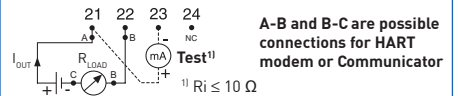
Input RTD		
Pt100	(IEC 60751, α=0.00385)	-200 to +850 °C
PtX (10 ≤ X ≤ 1000)	(IEC 60751 α=0.00385)	Corresp. to max. 4000 Ω
Pt100	(JIS C 1604, α=0.003916)	-200 to +850 °C
Ni100	(DIN 43760)	-60 to +250 °C
Ni120	(Edison Curve No. 7)	-60 to +250 °C
Ni1000	(DIN 43760)	-50 to +180 °C
Cu10	(Edison Cu Windings No. 15)	-50 to +200 °C
Input connections	One sensor	2-, 3- and 4-wire connection
	Two sensors	2-, 3- and 4-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
Test output		mA meter with impedance ≤10 Ω
Galvanic isolation		1500 VAC, 1 min
Ex-classifications		
	R520/R520S	ATEX: II 3 G Ex nL IIC T4-T6 Pending: FM, CSA, IECEx, GOST
	R520X/R520XS	ATEX: II 2(1) G Ex ia IIC T4-T6 Pending: FM, CSA, IECEx, GOST
Power supply		
	R520/R520S	10 to 36 VDC, Standard power supply
	R520X/R520XS	10 to 30 VDC, I.S. power supply
Ambient temperature		
	Storage/operation	-20 to +70 °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
Mounting		
		Rail acc. to DIN EN 50022, 35 mm

Input connections

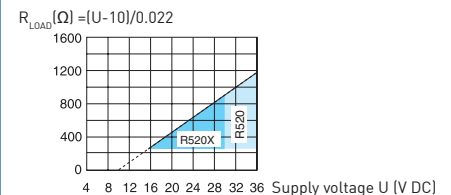
See data sheet for more alternatives



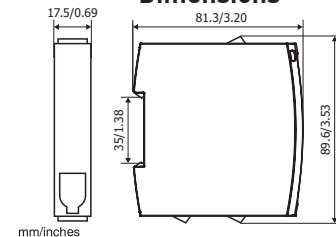
Output connections



Output load diagram



Dimensions



Ordering information

R520	70R520010
R520S, SIL 2 compatible	70R5200510
R520X	70R520X010
R520XS, SIL 2 compatible	70R520XS10
ICON PC configuration kit (USB-conn.)	70CFGUS001
Configuration	70CAL00001