



## C520

# HART Compatible Universal Dual-input 2-wire Transmitters



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.

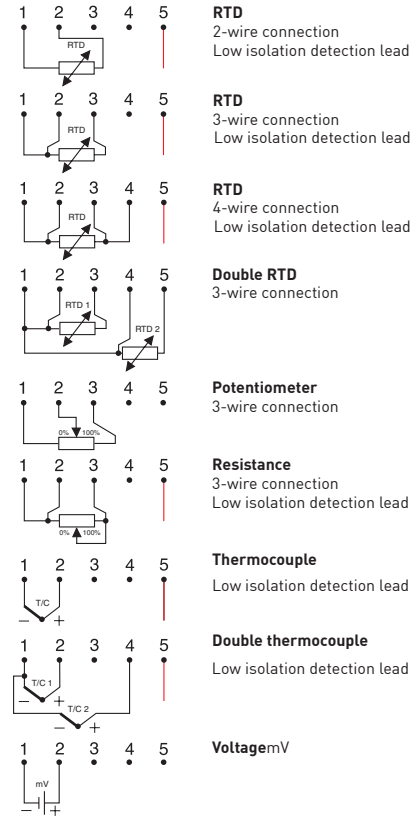
- Universal, dual-input for RTD and T/C
- SIL 2 compatible according to IEC 61508-2
- HART 6 protocol
- High accuracy
- 5 year guaranteed stability
- Withstands 10 g vibrations
- Complies with NAMUR NE 21, NE 43, NE 53, NE 89 and NE 107
- EMC immunity according to Criteria A
- Sensor Backup
- Sensor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

### Specifications:

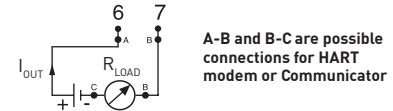
|                                               |                                  |                                                            |
|-----------------------------------------------|----------------------------------|------------------------------------------------------------|
| <b>Input RTD</b>                              |                                  |                                                            |
| Pt100                                         | (IEC 60751, $\alpha=0.00385$ )   | -200 to +850 °C                                            |
| PtX (10 ≤ X ≤ 1000)                           | (IEC 60751, $\alpha=0.00385$ )   | Corresp. to max. 4 000 Ω                                   |
| Pt100                                         | (JIS C 1604, $\alpha=0.003916$ ) | -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                                   |
| <b>Input Thermocouple</b>                     |                                  |                                                            |
|                                               | T/C types                        | B, C, D, E, J, K, N, R, S, T                               |
| <b>Input Resistance</b>                       |                                  |                                                            |
|                                               | Potentiometer                    | 100 to 4000 Ω, 2-, 3- and 4-wire connection                |
| <b>Input Voltage</b>                          |                                  |                                                            |
|                                               |                                  | -10 to +1000 mV                                            |
| <b>Double inputs for RTD and Thermocouple</b> |                                  |                                                            |
| 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                  |
| <b>Output</b>                                 |                                  |                                                            |
| Output signal                                 | Temperature linear               | 4-20 mA, 20-4 mA or customized                             |
| NAMUR compliance                              | Measure and fail currents        | NAMUR, NE 43                                               |
| <b>Galvanic isolation</b>                     |                                  |                                                            |
|                                               |                                  | 1500 VAC, 1 min                                            |
| <b>Ex-classifications</b>                     |                                  |                                                            |
|                                               | 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 |
| <b>Power supply</b>                           |                                  |                                                            |
|                                               | C520/C520N/C520S                 | 10 to 36 VDC, Standard power supply                        |
|                                               | C520X/C520XS                     | 10 to 30 VDC, I.S. power supply                            |
| <b>Ambient temperature</b>                    |                                  |                                                            |
|                                               | Storage/operation                | -40 to +85 °C                                              |
| <b>Accuracy</b>                               |                                  |                                                            |
|                                               | RTD (Pt and Ni sensors)          | Max. of $\pm 0.1$ °C or $\pm 0.05$ % of span               |
|                                               | Thermocouple                     | Typical $\pm 0.05$ % of span                               |
|                                               | Resistance/voltage               | See data sheet                                             |
| <b>Long-term stability</b>                    |                                  |                                                            |
|                                               |                                  | Max. drift: $\pm 0.05$ % of span / 5 years                 |
| <b>Connection head</b>                        |                                  |                                                            |
|                                               |                                  | DIN B or larger                                            |

### Input connections

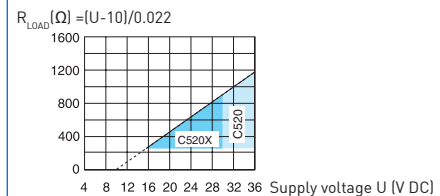
See data sheet for more alternatives



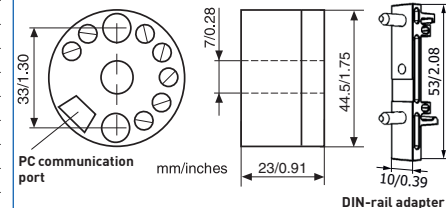
### Output connections



### Output load diagram



### 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 |