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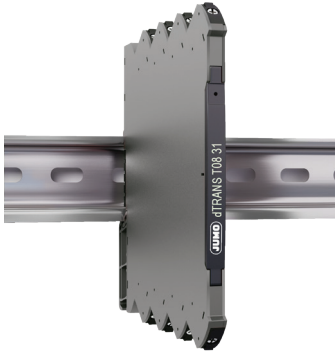
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Data Sheet 707131



JUMO dTRANS T08 31

Two-wire transmitter (Pt100, J, K)

707131

- Excellent accuracy, better than 0.05% of span
- Slimline housing of 6 mm
- Excellent EMC performance and 50/60 Hz noise suppression
- Selectable < 30 ms / 300 ms response time
- Pre-calibrated temperature ranges selectable via DIP-switches

**Application**

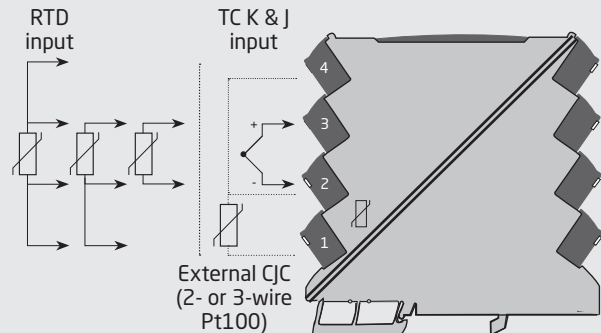
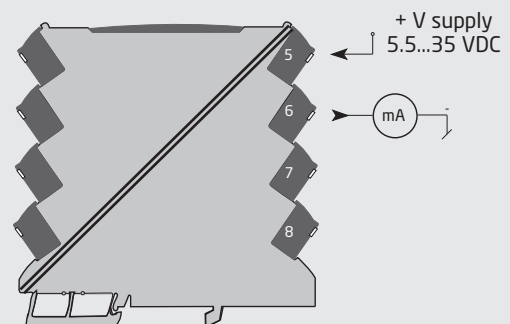
- The 707131 temperature converter measures a standard Pt100, TC J and K temperature sensor, and provides an isolated passive analog current output signal.
- High 2 port isolation provides surge suppression and protects the control system from transients and noise.
- The 707131 can be mounted in the safe area or in Zone 2 / Division 2 areas.
- Approved for marine applications.

Technical characteristics

- Flexibly loop powered by 5.5...35 VDC via connectors.
- < 30 ms fast response time with simultaneous sensor error detection when selected.
- Selectable 300 ms response time when signal dampening is needed.
- Selectable internal/external CJC.
- Excellent conversion accuracy in all available ranges, better than 0.05% of span.
- Meeting the NAMUR NE21 recommendations, the 707131 provides top measurement performance in harsh EMC environments.
- The device meets the NAMUR NE43 standard defining out of range and sensor error output values.
- All terminals are protected against overvoltage and polarity error.
- High galvanic isolation of 2.5 kVAC.
- Excellent signal/noise ratio of > 60 dB.

Mounting / installation / programming

- Selectable DIP-settings for easy configuration of more than 1000 factory calibrated measurement ranges.
- The narrow 6 mm housing allows up to 165 units to be mounted per meter of DIN rail, without any air gap between units.
- Wide ambient temperature range of -25...+70°C.

Applications**Safe Area or Zone 2 & Cl. 1, Div. 2, gr. A-D**

Order

Type	Product name	Description	Part no./TN (order code)
707131	JUMO dTRANS T08 31	Two-wire transmitter (Pt100, J, K)	00697477

Environmental Conditions

Operating temperature	-25°C to +70°C
Storage temperature	-40°C to +85°C
Calibration temperature	20...28°C
Relative humidity	< 95% RH (non-cond.)
Protection degree	IP20
Installation in	Pollution degree 2 & measurement / overvoltage cat. II

Mechanical specifications

Dimensions (HxWxD)	113 x 6.1 x 115 mm
Weight approx	70 g
DIN rail type	DIN EN 60715/35 mm
Wire size	0.13 x 2.5 mm ² / AWG 26...12 stranded wire
Screw terminal torque	0.5 Nm
Vibration	IEC 60068-2-6
2...25 Hz	±1.6 mm
25...100 Hz	±4 g

Common specifications

Supply

Supply voltage	5.5...35 VDC
Max. required power	0.80 W
Internal power dissipation	19 mW...0.8 W

Isolation voltage

Isolation voltage, test / working	2.5 kVAC / 300 VAC (reinforced)
Zone 2 / Div. 2	250 VAC

Response time

Response time (0...90%, 100...10%)	< 30 ms / 300 ms (selectable)
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Voltage drop	5.5 VDC
Signal / noise ratio	Min. 60 dB
Programming	DIP-switches
Signal dynamics, input	23 bit
Signal dynamics, output	18 bit
EMC immunity influence	< ±0.5% of span
Extended EMC immunity: NAMUR	
NE21, A criterion, burst	< ±1% of span
Incorrect DIP-switch setting identification	3.5 mA

Input specifications

RTD input

Temperature range, Pt100	-200...+850°C
Min. measurement range (span)	10°C
Accuracy: the greater of	Better than 0.05% of span or 0.1°C
Temperature coefficient: the greater of	0.02°C/°C or ≤ ±0.01%/°C
Sensor current	< 150 µA
Sensor cable resistance	< 50 Ω per wire
Effect of sensor cable resistance (3-/4-wire) ..	< 0.002 Ω / Ω
Sensor error detection	Yes - selectable via DIP-switch
Broken sensor detection	> 800 Ω
Shorted sensor detection	< 18 Ω

TC input

Temperature range, TC J	-100...+1200°C
Temperature range, TC K	-180...+1372°C

Min. measurement range (span)	
- TC J & K	50°C
Accuracy: the greater of	Better than 0.05% of span or 0.5°C
Temperature coefficient: the greater of	0.1°C/°C or ≤ ±0.01%/°C
Sensor cable resistance	< 5 kΩ per wire
Cold junction compensation	
(CJC): Accuracy @ external	
Pt100 input	Better than ±0.15°C
Cold junction compensation	
(CJC): Accuracy @ internal	
CJC	Better than ±2.5°C
Internal CJC error detection	Yes
External CJC error detection	Yes - selectable via DIP- switch
Open Thermocouple detection	Yes - selectable via DIP- switch

Output specifications

Common output specifications

Updating time	10 ms
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Current output

Programmable signal ranges	4...20 and 20...4 mA
Load (@ current output)	≤ (V _{supply} - 5.5) / 0.023 [Ω]
Load stability	≤ 0.01% of span / 100 Ω

Sensor error indication	3.5 mA or 23 mA / acc. to NAMUR NE43 or OFF
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I.S. / Ex marking

ATEX	II 3 G Ex nA IIC T4 Gc
IECEx	Ex nA IIC T4 Gc

Observed authority requirements

EMC	2014/30/EU
LVD	2014/35/EU
RoHS	2011/65/EU

Approvals

ATEX 2014/34/EU	DEKRA 18ATEX0007 X
IECEx	DEK 18.0006 X
DNV-GL Marine	DNVGL-CG-0339
UL	E201387