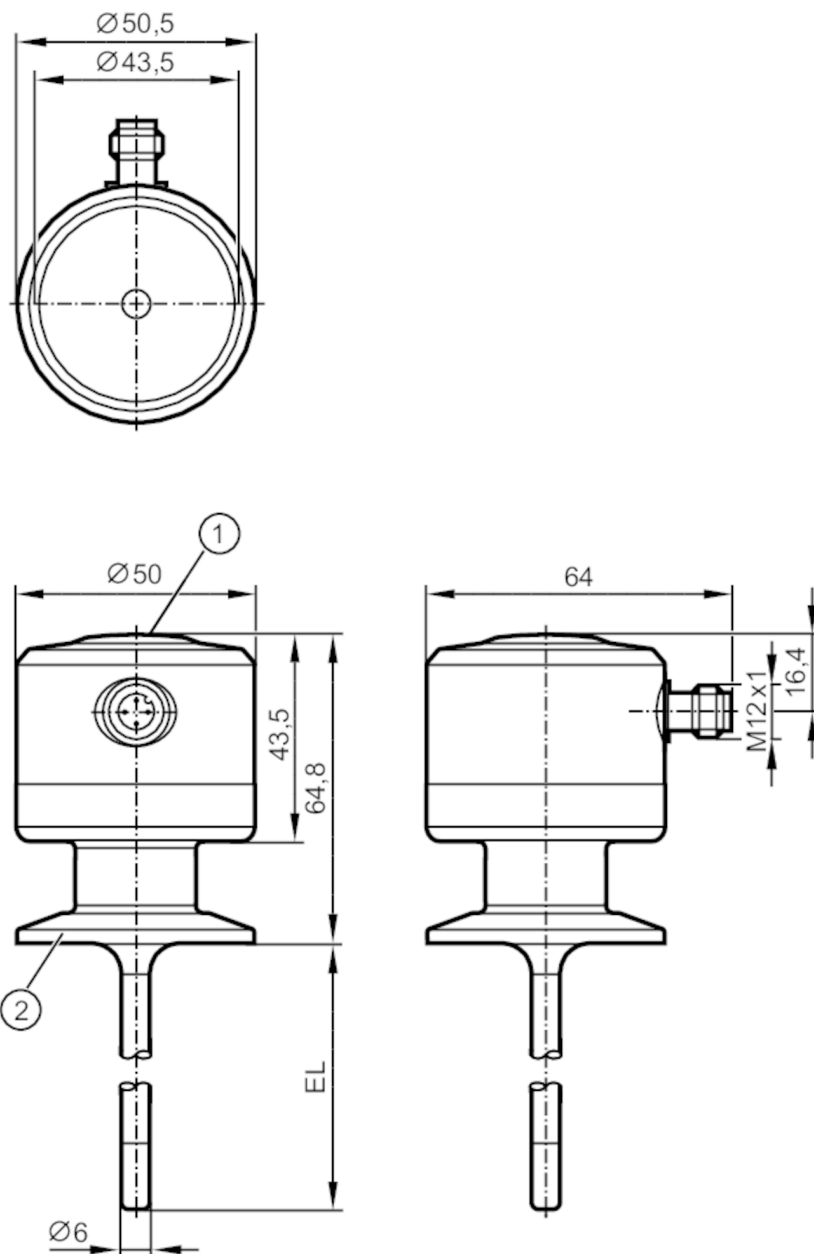


# TCC831



## Temperature transmitter

TCC100K1EC01-A-DKG/US



- 1 LED
- 2 Process connection



### Product characteristics

|                              |                                                             |              |
|------------------------------|-------------------------------------------------------------|--------------|
| Number of inputs and outputs | Number of digital outputs: 1; Number of analogue outputs: 1 |              |
| Measuring range              | -25...160 °C                                                | -13...320 °F |
| Communication interface      | IO-Link                                                     |              |
| Process connection           | Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852)           |              |
| Installation length EL [mm]  | 100                                                         |              |

### Application

|                   |                      |
|-------------------|----------------------|
| Special feature   | Gold-plated contacts |
| Measuring element | 1 x Pt 1000          |



## Temperature transmitter

TCC100K1EC01-A-DKG/US

|                                                      |                                                             |  |
|------------------------------------------------------|-------------------------------------------------------------|--|
| Reference element                                    | 1 x NTC                                                     |  |
| Media                                                | liquids and gases                                           |  |
| Pressure rating [bar]                                | 160                                                         |  |
| Pressure rating [MPa]                                | 16                                                          |  |
| Electrical data                                      |                                                             |  |
| Operating voltage [V]                                | 18...32 DC; ("supply class 2" to cULus)                     |  |
| Current consumption [mA]                             | 10; (24 V)                                                  |  |
| Protection class                                     | III                                                         |  |
| Reverse polarity protection                          | yes                                                         |  |
| Power-on delay time [s]                              | 6                                                           |  |
| Integrated watchdog                                  | yes                                                         |  |
| Inputs / outputs                                     |                                                             |  |
| Number of inputs and outputs                         | Number of digital outputs: 1; Number of analogue outputs: 1 |  |
| Outputs                                              |                                                             |  |
| Total number of outputs                              | 2                                                           |  |
| Output signal                                        | analogue signal; IO-Link; calibration check status          |  |
| Electrical design                                    | PNP/NPN                                                     |  |
| Number of digital outputs                            | 1                                                           |  |
| Output function                                      | normally closed; (diagnostic signal)                        |  |
| Max. voltage drop switching output DC [V]            | 2                                                           |  |
| Permanent current rating of switching output DC [mA] | 100                                                         |  |
| Diagnostic output                                    | calibration check status and error diagnostics              |  |
| Number of analogue outputs                           | 1                                                           |  |
| Analogue current output [mA]                         | 4...20                                                      |  |
| Max. load [Ω]                                        | (Ub - 15 V) x 50                                            |  |
| Short-circuit protection                             | yes                                                         |  |
| Type of short-circuit protection                     | pulsed                                                      |  |
| Overload protection                                  | yes                                                         |  |
| Measuring/setting range                              |                                                             |  |
| Probe length L [mm]                                  | 100                                                         |  |
| Measuring range                                      | -25...160 °C      -13...320 °F                              |  |
| Note on measuring range                              | scalable                                                    |  |
| Factory setting                                      | -10...150 °C / 14...302 °F                                  |  |
| Calibration check limit [K]                          | 0.5...3                                                     |  |
| In steps of [K]                                      | 0.05                                                        |  |
| Resolution                                           |                                                             |  |
| Resolution of analogue output [K]                    | 0.05                                                        |  |
| Accuracy / deviations                                |                                                             |  |
| Precision analogue output [K]                        | ± 0,2                                                       |  |
| Precision IO-Link [K]                                | ± 0,2                                                       |  |



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|                                                                      |                                                                                                                           |                     |
|----------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|---------------------|
| Temperature coefficient<br>analogue output<br>[% of the span / 10 K] | < ± 0,02; (in case of deviation from the reference condition 25 ± 5 °C)                                                   |                     |
| Temperature coefficient IO-<br>Link<br>[% of the span / 10 K]        | < ± 0,01; (in case of deviation from the reference condition 25 ± 5 °C)                                                   |                     |
| Response times                                                       |                                                                                                                           |                     |
| Dynamic response T05 / T09 [s]                                       | 1,5 / 4                                                                                                                   |                     |
| Software / programming                                               |                                                                                                                           |                     |
| Parameter setting options                                            | Display unit; scaling of the analogue output; calibration check limit; switching logic diagnostic output; simulation mode |                     |
| Interfaces                                                           |                                                                                                                           |                     |
| Communication interface                                              | IO-Link                                                                                                                   |                     |
| Transmission type                                                    | COM2 (38,4 kBaud)                                                                                                         |                     |
| IO-Link revision                                                     | 1.1                                                                                                                       |                     |
| SDCI standard                                                        | IEC 61131-9 CDV                                                                                                           |                     |
| Profiles                                                             | Digital Measuring Sensor, Common Profile, Blob Transfer                                                                   |                     |
| SIO mode                                                             | yes                                                                                                                       |                     |
| Required master port type                                            | A                                                                                                                         |                     |
| Process data analogue                                                | 1                                                                                                                         |                     |
| Process data binary                                                  | 1                                                                                                                         |                     |
| Min. process cycle time [ms]                                         | 4.4                                                                                                                       |                     |
| IO-Link resolution<br>temperature [K]                                | 0.01                                                                                                                      |                     |
| Supported DeviceIDs                                                  | Type of operation<br>default                                                                                              | DeviceID<br>1129    |
| Operating conditions                                                 |                                                                                                                           |                     |
| Ambient temperature [°C]                                             | -25...70                                                                                                                  |                     |
| Note on ambient temperature                                          | max. internal device temperature: 125 °C                                                                                  |                     |
| Storage temperature [°C]                                             | -40...100                                                                                                                 |                     |
| Protection                                                           | IP 68; IP 69K                                                                                                             |                     |
| Tests / approvals                                                    |                                                                                                                           |                     |
| EMC                                                                  | DIN EN 61000-6-2                                                                                                          |                     |
|                                                                      | DIN EN 61000-6-3                                                                                                          |                     |
| Shock resistance                                                     | DIN EN 68000-2-27                                                                                                         | 50 g (11 ms)        |
| Vibration resistance                                                 | DIN EN 60068-2-6                                                                                                          | 35 g (10...2000 Hz) |
| MTTF [years]                                                         | 329                                                                                                                       |                     |
| Note on approval                                                     | factory certificate available as download at <a href="http://www.factory-certificate.ifm">www.factory-certificate.ifm</a> |                     |
| UL approval                                                          | UL Approval no.                                                                                                           | K021                |
|                                                                      | File number UL                                                                                                            | E217884             |
| Mechanical data                                                      |                                                                                                                           |                     |
| Weight [g]                                                           | 358.9                                                                                                                     |                     |
| Housing                                                              | cylindrical                                                                                                               |                     |
| Dimensions [mm]                                                      | Ø 50 / L = 164.8                                                                                                          |                     |
| Materials                                                            | stainless steel (316L/1.4404); PEI; FKM; PFA                                                                              |                     |
| Materials (wetted parts)                                             | stainless steel (316L/1.4404); PEEK                                                                                       |                     |

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|                                                   |                                                   |
|---------------------------------------------------|---------------------------------------------------|
| Process connection                                | Clamp DN25...DN40 (1...1,5") DIN 32676 (ISO 2852) |
| Surface characteristics Ra/Rz of the wetted parts | Ra: < 0.8                                         |
| Probe diameter [mm]                               | 6                                                 |
| Installation length EL [mm]                       | 100                                               |

### Remarks

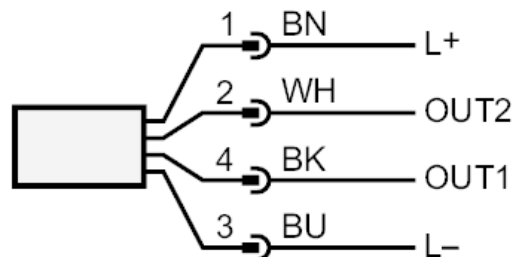
|               |                                                                                  |
|---------------|----------------------------------------------------------------------------------|
| Remarks       | MS = set measuring span<br>operating voltage "supply class 2" according to cULus |
| Pack quantity | 1 pcs.                                                                           |

### Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



### Connection



OUT2: analogue output  
OUT1: Diagnostic output / IO-Link