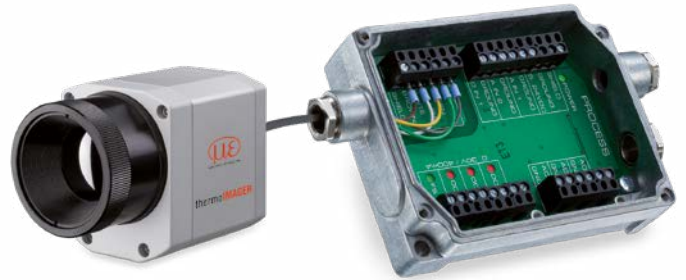MICRO-EPSILON

More Precision

thermoIMAGER TIM // Compact thermal imaging cameras
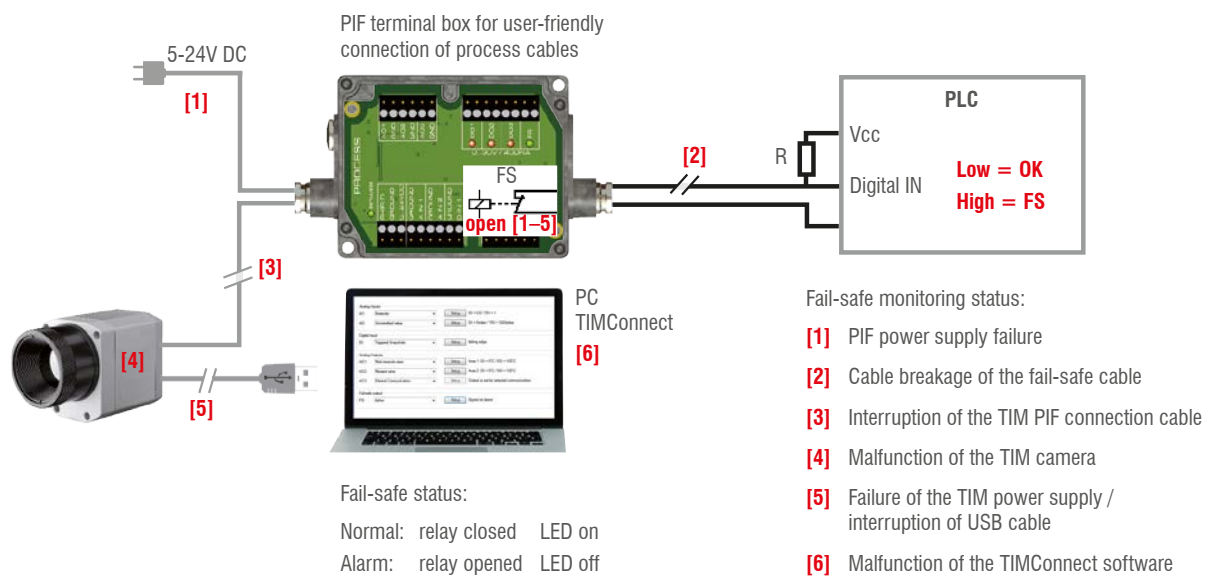
Industrial process interface
Camera and process control for use in industrial environments

- Industrial process interface with 3 analog / alarm outputs, 2 analog inputs, 1 digital input, 3 alarm relays
- 500 V AC$_{RMS}$ galvanic isolation between TIM camera and process
- Separate fail-safe relay output
- TIM hardware with all cable connections and the TIMConnect software are permanently monitored during operation

Exemplary fail-safe monitoring of the TIM camera with connected PLC

PIF terminal box for user-friendly connection of process cables

5-24V DC **[1]**

[2]

PLC

Vcc

Digital IN

Low = OK
High = FS

FS
open [1–5]

[3]

[4]

[5]

PC TIMConnect **[6]**

R

Fail-safe status:

Normal: relay closed LED on
Alarm: relay opened LED off

Fail-safe monitoring status:

[1] PIF power supply failure

[2] Cable breakage of the fail-safe cable

[3] Interruption of the TIM PIF connection cable

[4] Malfunction of the TIM camera

[5] Failure of the TIM power supply / interruption of USB cable

[6] Malfunction of the TIMConnect software

Model	Industrial process interface
Protection class	IP65 (NEMA-4)
Ambient temperature	-30 ... 85 °C
Storage temperature	-30 ... 85 °C
Relative humidity	10 to 95 %, non-condensing
Vibration resistance	IEC 60068-2-6 (non-condensing)/ IEC 60068-2-64 (broadband noise)
Shock resistance	IEC 60068-2-27 (25 g and 50 g)
Weight	610 g (with 5 m cable)
Cable lengths	5 m, optional 10 m and 20 m or HT cable (180 °C or 250 °C)
Power supply	5 to 24 V DC
LED indicators	2 green LEDs for voltage and fail safe / 3 red LEDs for alarm relay status
Insulation	500 V AC$_{RMS}$ between TIM camera and process
Outputs	3 analog / alarm outputs | 3 alarm relays [1]
Inputs	2 analog inputs | 1 digital input
Ranges	0/4-20 mA (for AO 1 – 3) 0 – 30 V / 400 mA (for alarm relays DO1 – 3) 0 – 10 V (for AI 1 – 2) 24 V (for DI)
Analog inputs	Emissivity setting | Ambient temperature compensation | Reference temperature | Uncommitted value | Flag control triggered snapshots, triggered recordings, triggered line scan camera, triggered event grabber | Reset max./min. search
Digital input	Flag control | Triggered snapshots, triggered recordings, triggered line scan camera, triggered event grabber | Reset max./min. search
Analog Outputs	Main measuring range | Measuring range | Internal temperature | Flag status | Alarm | Frame synchronization | Fail safe External communication | Central pixel (direct output) [2]

[1] active if AO1, 2 or 3 is/are programmed as alarm output. [2] Function only available for TIM M-1 models

Sensors and Systems from Micro-Epsilon

Sensors and systems for displacement, distance and position

Sensors and measurement devices for non-contact temperature measurement

Measuring and inspection systems for metal strips, plastics and rubber

Optical micrometers and fiber optics, measuring and test amplifiers

Color recognition sensors, LED analyzers and inline color spectrometers

3D measurement technology for dimensional testing and surface inspection