thermoMETER TIM 8

Intelligent spotfinder pyrometer

The TIM 8 combines the advantages of a pyrometer and an infrared camera. The spotfinder function enables precise temperature measurements with automatic sensor adjustment. Its compact design and favorable price make the pyrometer ideally suitable for temperature measurements in machine building and automation.

Advantages

- Pyrometer with 80 x 80 pixels for precise temperature measurements from -20 °C to 900 °C
- Robust and compact system with motorized focus
- Excellent optical resolution with distance-to-spot-size-ratio up to 190:1
- Autonomous operation with automatic spotfinder and direct analog output
- Optionally expandable with industrial process interface (up to 9 analog and alarm outputs)
- Comprehensive ready-to-use package including versatile software

Model	TIM 8
Optical resolution	80 x 80 pixels
Temperature ranges	-20 °C to 100 °C, 0 °C to 250 °C, (20) 150 °C to 900 °C [1]
Spectral range	7.5 to 13 μm
Frame rate	50 Hz
System accuracy	±2 °C or ±2 %, whichever is greater
Fixed lens	12° FOV / f = 12.7 or 30° FOV / f = 5.1 or 55° FOV / f = 3.1 or 80° FOV / f = 2.3
Focus	manual motorized focus
Optical resolution (D:S)	190:1 (12° lens)
Thermal sensitivity (NETD)	100 mK
Detector	FPA, uncooled (34 μm x 34 μm)
Outputs/digital	USB 2.0 / Ethernet (100 Mbit/s) / PoE / RS 485 [3]
Direct I/O	1x analog output (0/4-20 mA) / input (analog or digital); optically isolated
Industry process interface (PIF)	3x analog outputs (0/4-20 mA or 0-10 V) or alarm output (relay) / 3x inputs (analog or digital) / failsafe (LED and relay); expandable up to 3 PIFs; optically isolated
Cable lengths	USB: 1 m (standard), 3 m, 5 m, 10 m, 20 m, Ethernet / RS485: 100 m
Power supply	USB / PoE / 5-30 VDC
Protection class	IP67
Ambient temperature	0 °C to 50 °C
Storage temperature	-40 °C to 70 °C
Relative humidity	20 to 80%, non-condensing
Vibration [2]	IEC 60068-2-6 (sinus-shaped) / IEC 60068-2-64 (broadband noise)
Shock [2]	IEC 60068-2-27 (25 g and 50 g)
Housing (size) [2]	ø 36 mm x 90 mm (M30x1 thread)
Weight	185 g

[1] For the range (20)150 up to 900 °C, the accuracy specification applies from 150 °C
[2] For more information see operating instructions
[3] When using the RS485 interface, the direct outputs and inputs are not available

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TIM 8 80 x 80 px	Focal length	Minimum measurement distance*		Distance to measurement object (measuring field in m, pixels in mm)											
				0.05	0.1	0.2	0.3	0.5	1	2	4	6	10	30	100
30° x 30° Standard lens	5 mm	0.2 m	HFOV (m) VFOV (m) IFOV (mm)	0.028 0.028 0.33	0.056 0.056 0.67	0.111 0.111 1.33	0.167 0.167 2.0	0.279 0.279 3.33	0.557 0.557 6.67	1.115 1.115 13.33	2.230 2.230 26.67	3.346 3.346 40.00	5.6 5.6 66.67	16.7 16.7 200.00	55.8 55.8 666.67
12° x 12° Telephoto lens	13 mm	0.3 m	HFOV (m) VFOV (m) IFOV (mm)		0.022 0.022 0.3	0.043 0.043 0.5	0.065 0.065 0.8	0.11 0.11 1.3	0.21 0.21 2.7	0.43 0.43 5.3	0.45 0.43 2.8	0.68 0.34 4.2	1.1 0.51 7.0	3.4 0.8 21.1	11.3 2.5 70.4
55° x 55° Wide angle lens	3 mm	0.2 m	HFOV (m) VFOV (m) IFOV (mm)	0.057 0.057 0.6	0.110 0.110 1.2	0.218 0.218 2.3	0.325 0.325 3.4	0.539 0.539 5.6	1.07 1.07 11.2	2.14 2.14 22.4	4.27 4.27 44.6	6.41 6.41 66.9	10.7 10.7 111.5	32.0 32.0 334.5	106.7 106.7 1114.8
80° x 80° Super wide angle lens	2 mm	0.2 m	HFOV (m) VFOV (m) IFOV (mm)	0.090 0.090 0.08	0.174 0.174 1.6	0.343 0.343 3.2	0.509 0.509 4.7	0.884 0.88 7.8	1.682 1.682 15.5	3.357 3.357 31.0	6.708 6.708 61.9	10.058 10.058 92.8	16.8 16.8 154.6	50.3 50.3 463.7	167.5 167.5 1545.5

FOV: Horizontal expansion of the total measuring field at the object level; VFOV: Vertical expansion of the total measuring field at the object level;
IFOV: Size of the individual pixels at the object level

* Please note: The measurement accuracy of the camera may lie outside of the specifications for distances below the defined minimum measurement distance.
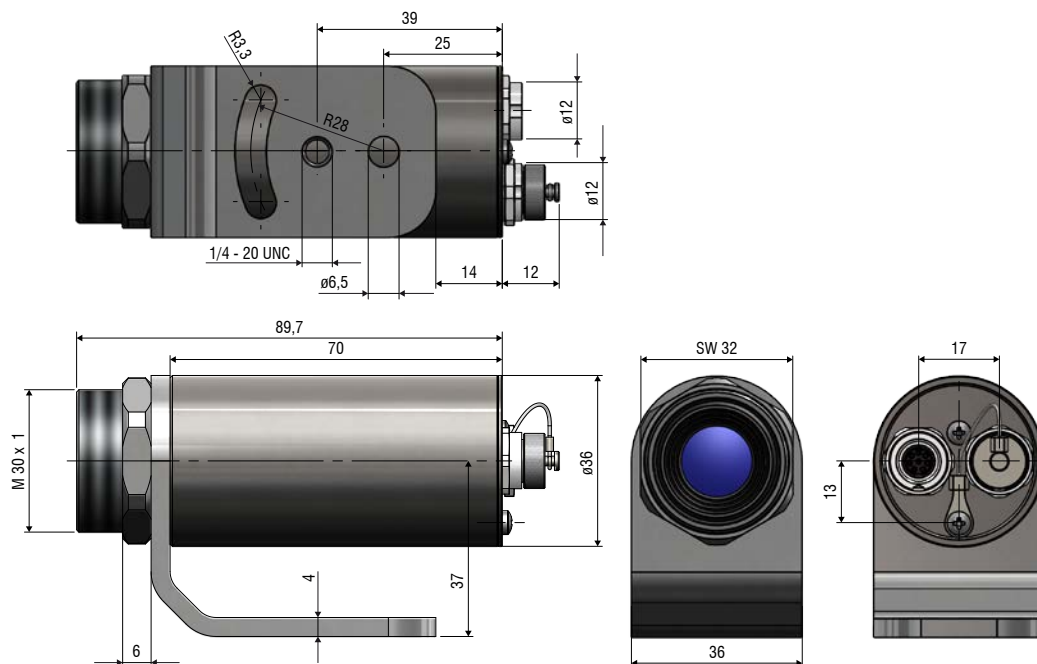
Scope of supply (standard)

- TIM 8
- USB cable 1 m
- PIF cable incl. terminal block (1 m)
- Mounting angle with tripod thread, mounting nut
- TIMConnect Software
- Assembly instruction