Highlights

- Wide temperature range from -18 to 2000°C

- Simple, two-wire installation for simultaneous 4-20 mA and digital output

- Wide choice of optics

- Special models for glass and plastics applications

- Rugged accessories for harsh industrial environments

- Optional stainless steel versions

- Advanced signal processing

- Install up to 15 sensors on a single multidrop network

- Windows software for remote configuration and monitoring

- For use in potentially explosive atmospheres with intrinsically-safe ratings for dust and gas

TX
Datasheet

Electrical Specifications

Outputs

Analog	4-20 mA, max. loop resistance 700 Ω
Digital (Smart models)	HART® to RS232 (with optional adapter)
Alarm (Smart models)	24 V / 150 mA; adjustable setpoints, deadband, normally open/closed settings

Power Supply	12 - 24 VDC ±20% (Standard models)
	24 VDC ±10% (Smart models)

General Specifications

Environmental Rating	IP65 (IEC529)

Ambient Temperature

without cooling	0 to 70°C
with air cooling	up to 120°C
with water cooling	up to 175°C
with ThermoJacket ™	up to 315°C

Storage Temperature	-18 to 85°C
Relative Humidity	10 to 95%, non-condensing
Shock	IEC 68-2-27, 50 G, 11 ms, any axis
Vibration	IEC 68-2-27, 3 G, any axis, 11 – 200 Hz

Dimension	187 mm L x 42 mm diameter
with cooling jacket	187 mm L x 60 mm diameter

Weight	330 g
with cooling jacket	595 g

Measurement Specifications

Temperature/Spectral Ranges

LT/LTP (Low Temp.)	-18 to 500°C	8 to 14 μm
MT (Medium Temp.)	200 to 1000°C	3,9 μm
HT (High Temp.)	500 to 2000°C	2,2 μm
G5 (Glass)	250 to 1650°C	5,0 μm
P7 (Plastic)	10 to 360°C	7,9 μm

Optical Resolution[1]

LT, MT, G5, P7	33 : 1
LTP	15 : 1 (Fresnel optics)
HT	60 : 1

System Accuracy	±1% or ±1,4°C [2, 3]
Repeatability	±0,5% or ±0,7°C [3]

Temperature Resolution

LT	0,1°C
all other models	1°C

System Response Time[4]

HT	100 ms
all other models	165 ms

Emissivity	adjustable: 0,10 to 1,00

Signal Processing

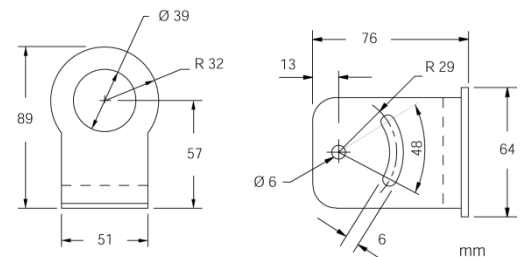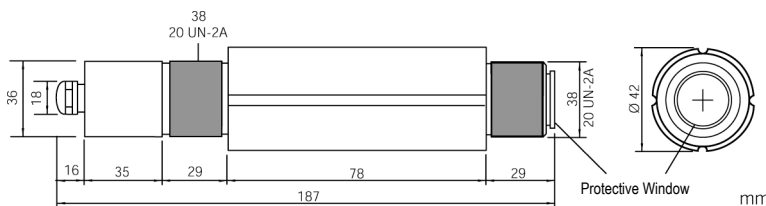|	
Standard model	emissivity
Smart model	emissivity, °C/°F, advanced peak / valley hold, averaging, background radiation compensation

[1] 90% energy, standard focus optics
[2] at ambient temperature 23°C ± 5°C
[3] whichever is greater
[4] 95% value

Sensor and Fixed Bracket

Each sensor comes with a fixed bracket, a mounting nut, and an operator's manual. All models have 4 to 20 mA output.

Fixed Bracket (XXXTXXACFB)

Options

Options must be specified at time of order.
- Manufacturer's calibration certificate based on NIST/DKD probes (XXXTXCERT)
- Intrinsically-Safe Ratings
  EX II 2G Ex ib IIC T4 Gb (gases/vapors)
  EX II 2D Ex ibD IIIC T135°C Db (dusts)
  TXS models (…IS4), TXS models in stainless steel (…IS5)
- Water/Air Cooled Housing incl. Air Purge Collar (...W), optional in stainless steel

Accessories

- Sighting Viewer Tool (XXXTXXACSV)
- Protective Window according to spectral range (XXXTXACTW…)
- ThermoJacket: extra rugged cast metal housing for thermal/mechanical environmental protection (RAYTXXTJ3M), see also ThermoJacket datasheet

Adjustable Bracket (XXXTXXACAB)

Air Purge Collar (XXXTXXACAP)

Right Angle Mirror for measuring targets at right angles to sensor axis (XXXTXXACRA)

Optical Specifications

Standard Focus: LTP models

Spot Dia. S [mm]
14   42   71   135   171   207
100 mm @ 1520 mm *
Distance D: Sensor to Object [mm]
Focus point D:S = 15:1   Far field D:S = 14:1

Close Focus Option CF	
D (mm)	S (mm)
0	10
50	**7,5***
500	115

D:S = 7:1, Far Field = 4:1

*focus point

Standard Focus: LT, MT, G5, P7 models

Spot Dia. S [mm]
18   27   36   60   77   94
45 mm @ 1520 mm *
Distance D: Sensor to Object [mm]
Focus point D:S = 33:1   Far field D:S = 30:1

Close Focus Option CF1	
D (mm)	S (mm)
0	16
76	**2,5***
500	92

D:S = 30:1, Far Field = 5:1

Close Focus Option CF2	
D (mm)	S (mm)
0	17
200	**6,4***
450	32

D:S = 32:1, Far Field =10:1

*focus point
Close Focus not available for G5 and P7

Standard Focus: HT models

Spot Dia. S [mm]
12   16   20   36   48   63
25 mm @ 1520 mm *
Distance D: Sensor to Object [mm]
Focus point D:S = 60:1   Far field D:S = 42:1

Close Focus Option 1	
D (mm)	S (mm)
0	11
76	**1,3***
500	66

D:S = 60:1, Far Field = 7:1

Close Focus Option 2	
D (mm)	S (mm)
0	11
200	**3,4***
450	22

D:S = 60:1, Far Field =14:1

*focus point

Remote Communication Kit

Required for smart models, the kit (XXXTXACRCK) includes the HART/RS232 adapter and the Windows DataTemp Multidrop software package. One kit serves multiple sensors. Requires RS232 serial port and Windows 2000/XP/Vista/Win7.