AXIS F2180-TE Thermal Sensor

Discreet thermal sensor for temperature monitoring

This thermal sensor unit can be used to remotely monitor temperatures and trigger temperature-based events. Based on Axis modular camera concept, it can be placed up to 30 m away from the main unit, and only the small sensor is externally visible. It's designed for use with AXIS F91 Mk II main units, and when used with AXIS F9114-R Mk II, up to four sensor units can be used simultaneously, both thermal and visual. There's also a variety of accessories available for wall and recessed mounting. Furthermore, this sensor unit is available with 95° or 57° horizontal field of view.

- > 57° or 95° horizontal field of view
- > Trigger temperature-based alerts
- > Temperature deviation detection
- > Configurable polygonal detection areas
- > For installation in machinery, vehicles, and tight spaces

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Camera

Image sensor
Uncooled VOx microbolometer 160x120 pixels
Pixel size 12 µm
Spectral range: 8–14 µm

Lens
Athermalized
Horizontal field of view: 95° or 57°
Minimum focus distance: 0.12 m (0.4 ft) with 95°HFoV or 0.3 m (1.0 ft) with 57° HFoV

Sensitivity
NETD < 50 mK @25C, F1.1

Thermometry

Object temperature range
-10 °C to 450 °C (14 °F to 842 °F)

Temperature accuracy
10 °C to 140 °C (50 °F to 284 °F): ±5 °C (±9 °F) accuracy[1]
140 °C to 450 °C (284 °F to 842 °F): ±10% accuracy[1]

Detection range
We recommend the size of a monitored object to cover at least 10x10 pixels in 160x120.

General
Spot temperature meter
Up to 4 polygonal temperature detection areas

Approvals

Product markings
UL/cUL, CE, FCC, KC, VCCI, RCM

Supply chain
TAA compliant

EMC
CISPR 35, CISPR 32 Class A, ECE R10 rev.06, EN 55035, EN 55032 Class A, EN 61000-6-1, EN 61000-6-2
Australia/New Zealand: RCM AS/NZS CISPR 32 Class A
Canada: ICES(A)/NMB(A)
Japan: VCCI Class A
Korea: KS C 9835, KS C 9832 Class A
USA: FCC Part 15 Subpart B Class A
Railway: IEC 62236-4

Safety
CAN/CSA C22.2 No. 62368-1 ed. 3,
RCM AS/NZS 62368.1:2022, IEC/EN/UL 62368-1 ed. 3,
UL recognized component, UN ECE R118

Environment
IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-64, IEC 60068-2-78, IEC 60721-3-5 Class 5M3 (Vibration, Shock), IEC/EN 60529 IP66/IP67, ISO 20653 IP6K9K

Cybersecurity

Documentation
AXIS OS Hardening Guide
Axis Vulnerability Management Policy
Axis Security Development Model
AXIS OS Software Bill of Material (SBOM)
To download documents, go to *axis.com/support/cybersecurity/resources*
To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

Casing
IP66[2]-, IP67[2]-, and IP6K9K[2]-rated
Aluminum casing
Color: black NCS S 9000-N

Power
Max 1.6 W

Connectors
SMA connector

Operating conditions
Temperature monitoring: -10 °C to 60 °C (14 °F to 140 °F)
Humidity: 10–100% RH (condensing)

1. *Based on an ambient temperature of 25 °C (77 °F).*
2. *In combination with a cable that has the same IP-rating*

Storage conditions
Temperature: -40 °C to 65 °C (-40 °F to 149 °F)
Humidity: 5–95% RH (non-condensing)

Dimensions
For the overall product dimensions, see the dimension drawing in this datasheet.

Weight
47 g (0.1 lb)

Box content
Sensor, installation guide

Required hardware
AXIS F91 Mk II Main Unit
AXIS TU6004-E Cable, AXIS TU6005 Plenum Cable, or AXIS TU6007-E Cable

System tools
AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator
Available at *axis.com*

Languages
English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese

Warranty
5-year warranty, see *axis.com/warranty*

Export control
This product is subject to export control regulations, and you should always comply with all applicable national and international export or re-export control regulations.

Part numbers
Available at *axis.com/products/axis-f2180-te-thermal-sensor#part-numbers*

Optional accessories

AXIS TF2001-E Dual Mount Bracket, AXIS TU6002 Right-angle SMA adaptor
For more accessories, go to *axis.com/products/axis-f2180-te-thermal-sensor#compatible-products*

Sustainability

Substance control
PVC free, BFR/CFR free in accordance with JEDEC/ECA Standard JS709
RoHS in accordance with EU RoHS Directive 2011/65/EU and 2015/863, and standard EN IEC 63000:2018
REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*

Materials
Renewable carbon-based plastic content: 30% (carbon capture based)
Screened for conflict minerals in accordance with OECD guidelines
To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*

Environmental responsibility
axis.com/environmental-responsibility
Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

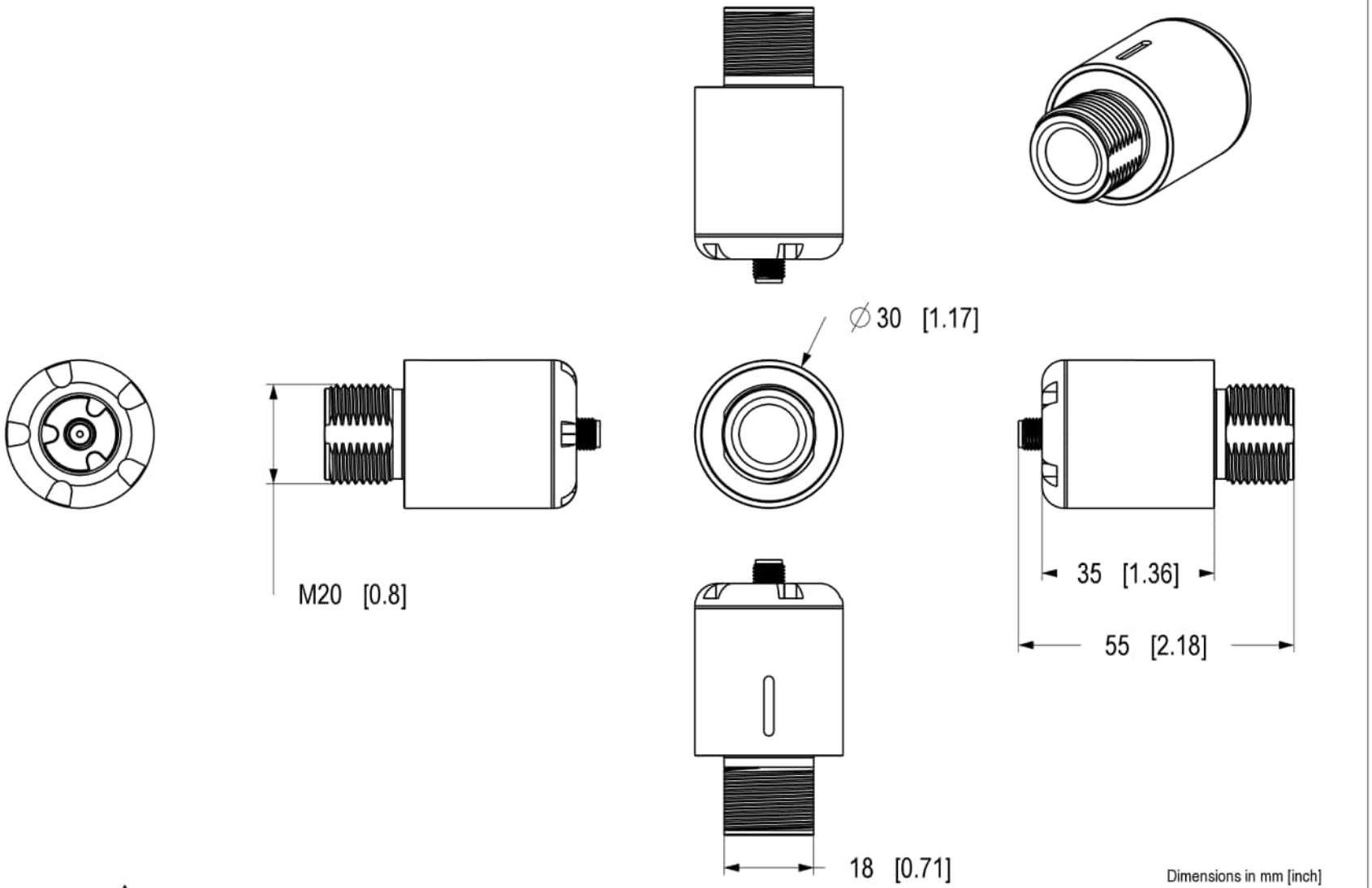
Detect, Recognize, Identify (DRI)

AXIS F2180-TE (95° HFoV)		
	Definition	Distance
Detect	1.5 pixels	Human: 50 m (160 ft) Vehicle: 140 m (459 ft)
Recognize	6 pixels	Human: 12 m (39 ft) Vehicle: 35 m (110 ft)
Identify	12 pixels	Human: 6 m (20 ft) Vehicle: 19 m (62 ft)

AXIS F2180-TE (57° HFoV)		
	Definition	Distance
Detect	1.5 pixels	Human: 80 m (260 ft) Vehicle: 220 m (722 ft)
Recognize	6 pixels	Human: 20 m (66 ft) Vehicle: 60 m (200 ft)
Identify	12 pixels	Human: 10 m (33 ft) Vehicle: 30 m (98 ft)

We used Johnson's criteria to calculate the theoretical values shown in the table. Human and vehicle sizes were assumed to be 1.8 x 0.5 m and 4.0 x 1.5 m, respectively.

Thoroughly evaluate your scene using, for example, AXIS Site Designer. Consider factors like weather conditions when determining actual detection distances.



Dimensions in mm [inch]

Date	Version	Scale
2026 Jan-26	M1.3	1:1
Drawing Number	Size	Sheet
3500149	A4	1(1)

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T10225921/EN/M2.2/202604

Highlighted capabilities

Thermometry

Thermal cameras detect objects using the infrared radiation (heat) emitted by all objects. Temperature-calibrated thermal cameras, called thermometric cameras, can measure absolute temperatures, while surveillance-optimized thermal cameras show relative temperatures. All types of thermal cameras have excellent object detection capabilities regardless of light conditions – even in total darkness.