

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



AXIS F2180-TE Thermal Sensor

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) accuracy¹
140 °C to 450 °C (284 °F to 842 °F): ±10% accuracy¹

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

IP66²-, IP67²-, and IP6K9K²-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

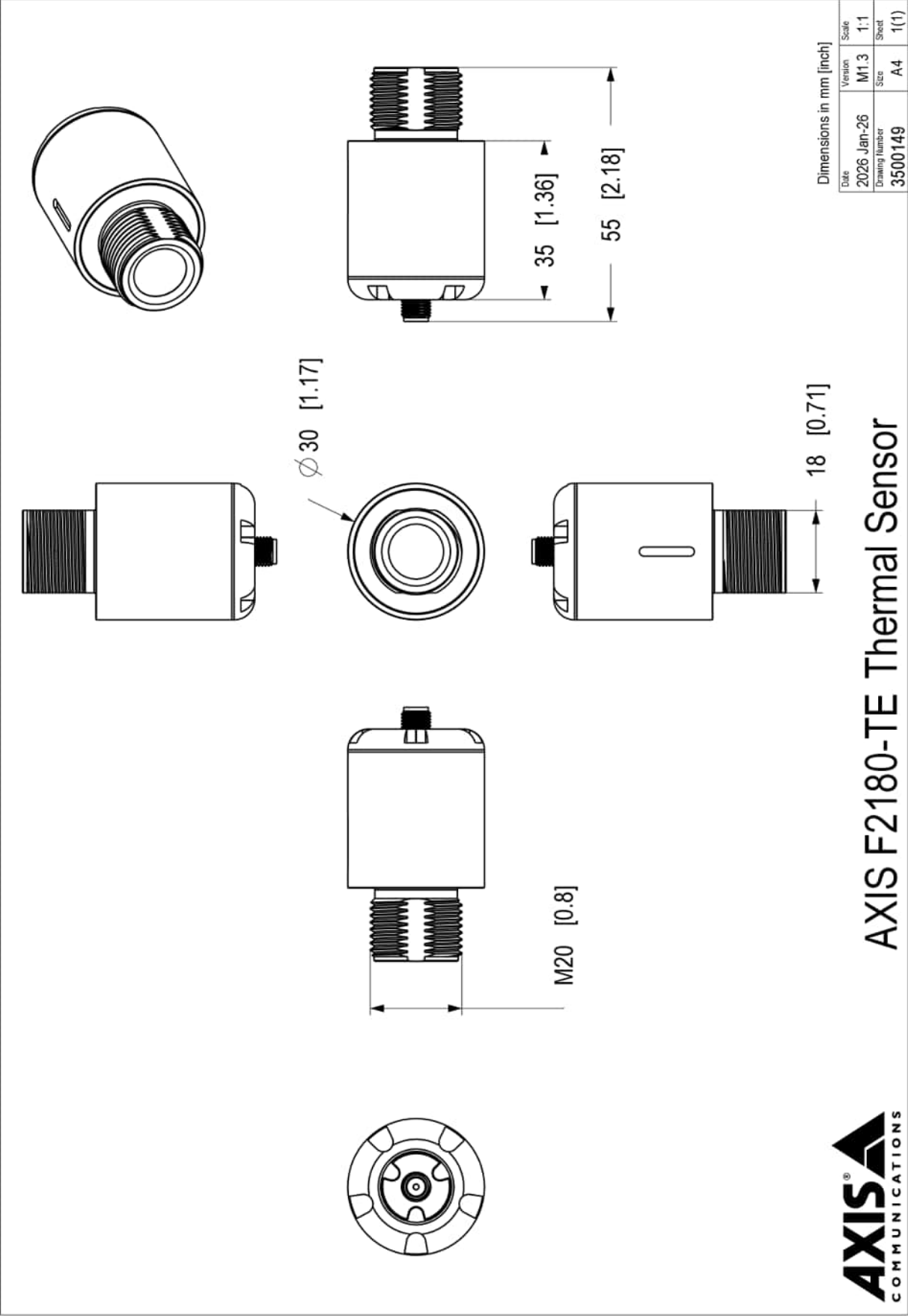
Detect, Recognize, Identify (DRI)

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.



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.