

P/N: 71001-1103

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Introduction

The FLIR A310 ex is an ATEX-proof solution, with a thermal imaging camera mounted in an enclosure—making it possible to monitor critical and other valuable assets in explosive atmospheres. Process monitoring, quality control, and fire detection in potentially explosive locations are typical applications for the FLIR A310 ex.

- Thermographic monitoring and early fire detection in an explosion-hazard area.
- Enclosures for infrared cameras in Ex zones 1, 2, 21, and 22.
- ATEX certified.
- Protection class IP67.
- Plug-and-play installation with the enclosure delivered ready for use.
- Available with additional options.

The certification covers the entire system, which includes the enclosure as well as all components inside of it, such as the infrared camera, heater, and integrated controller. This means that no additional certification is required for operation.

The integrated controller is equipped with two fiber optic and two Ethernet ports. This enables a flexible network integration in star ring topologies.

In addition, the integrated controller features several digital I/O channels and sensors for temperature, humidity, and pressure. Among other functions, the I/O channels enable the user to switch on/off the camera and the heater via remote control. Access is through an integrated web interface or Modbus TCP/IP.

Explosion-proof housing

General data	
Ambient temperature range for operation	-20°C to +40°C
Protection class	IP67
Weight	6.7 kg (without camera and lens)
Empty volume	5.06 l
External dimensions (without sun shield)	D = 170 mm, L = 408 mm
Housing material	Nickel-plated aluminium
Surface	Powder coated
Protection window	Germanium, double-sided AR Coated, externally with additional hard-carbon layer
Maximum power of the additional heater	16 W
Operating voltage	24 V DC
Maximum electric connection power	60 W
Power cable	Helukabel 37264
Length of power cable	4 m (13 ft.)
Power cable configuration	Pigtail

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General data	
Integrated controller	4-port switch with 2 × fiber-optic LC 100Base-FX or 2 × RJ45(10/100) up-links, ring-topology support for reduced cabling effort, 2 × internal temperature sensors, air humidity and pressure sensor, digital output module controllable via Modbus TCP/IP or web interface to enable turning the heater on/off
Ethernet medium	Multi-mode breakout fiber AT-V(ZN)Y(ZN)Y 4G50/125 OM2
Length of Ethernet cable	4 m (13 ft.)
Ethernet configuration	Pigtail with FC connector

Explosion protection-specific data	
For use in EX zone	1, 2, 21, and 22
Ignition protection category	Flame-proof enclosure "d"
Maximum surface temperature (according to temperature class T6)	Maximum 85°C
ATEX certification (version -AXC)	EX-Protection Gas: II 2G Ex d IIC T6 Gb, EX-Protection Dust: II 2D Ex tb IIIC T85° Db
Verification certificate	ZELM 12 ATEX 0485 X

Camera system

Imaging and optical data	
IR resolution	320 × 240 pixels
Thermal sensitivity/NETD	< 0.05°C @ +30°C (+86°F) / 50 mK
Field of view (FOV)	25° × 18.8°
Minimum focus distance	0.4 m (1.31 ft.)
Focal length	18 mm (0.7 in.)
Spatial resolution (IFOV)	1.36 mrad
Lens identification	Automatic
F-number	1.3
Image frequency	30 Hz
Focus	Automatic or manual (built in motor)
Zoom	1–8× continuous, digital, interpolating zooming on images

Detector data	
Detector type	Focal Plane Array (FPA), uncooled microbolometer
Spectral range	7.5–13 μm
Detector pitch	25 μm
Detector time constant	Typical 12 ms

Measurement	
Object temperature range	<ul style="list-style-type: none"> –20 to +120°C (–4 to +248°F) 0 to +350°C (+32 to +662°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading

Measurement analysis	
Spotmeter	10
Area	10 boxes with max./min./average/position



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Measurement analysis	
Isotherm	1 with above/below/interval
Measurement option	Measurement Mask Filter Schedule response: File sending (ftp), email (SMTP)
Difference temperature	Delta temperature between measurement functions or reference temperature
Reference temperature	Manually set or captured from any measurement function
Atmospheric transmission correction	Automatic, based on inputs for distance, atmospheric temperature and relative humidity
Optics transmission correction	Automatic, based on signals from internal sensors
Emissivity correction	Variable from 0.01 to 1.0
Reflected apparent temperature correction	Automatic, based on input of reflected temperature
External optics/windows correction	Automatic, based on input of optics/window transmission and temperature
Measurement corrections	Global and individual object parameters
Alarm	
Alarm functions	6 automatic alarms on any selected measurement function, Digital In, Camera temperature, timer
Alarm output	Digital Out, log, store image, file sending (ftp), email (SMTP), notification
Set-up	
Color palettes	Color palettes (BW, BW inv, Iron, Rain)
Set-up commands	Date/time, Temperature°C/°F
Storage of images	
Storage media	Built-in memory for image storage
File formats	Standard JPEG, 16-bit measurement data included
Ethernet	
Ethernet	Control, result and image
Ethernet, type	100 Mbps
Ethernet, standard	IEEE 802.3
Ethernet, configuration	Pigtail with FC-connector (fiber)
Ethernet, communication	TCP/IP socket-based FLIR proprietary
Ethernet, video streaming	MPEG-4, ISO/IEC 14496-1 MPEG-4 ASP@L5
Ethernet, image streaming	16-bit 320 × 240 pixels @ 7-8 Hz • Radiometric
Ethernet, protocols	Ethernet/IP, Modbus TCP, TCP, UDP, SNMP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP



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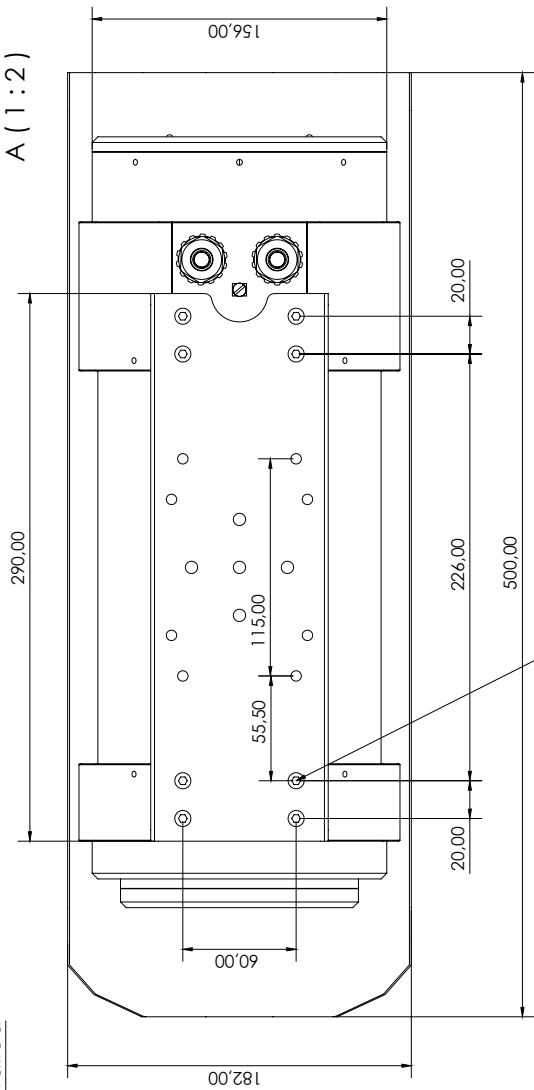
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Shipping information	
Packaging, type	Cardboard box
List of contents	<ul style="list-style-type: none">• Infrared camera with lens, in explosion-proof housing• Printed documentation• User documentation CD-ROM• Utility CD-ROM
Packaging, weight	
Packaging, size	495 × 370 × 192 mm (19.5 × 14.6 × 7.6 in.)
EAN-13	7332558008355
UPC-12	845188008703
Country of origin	Sweden

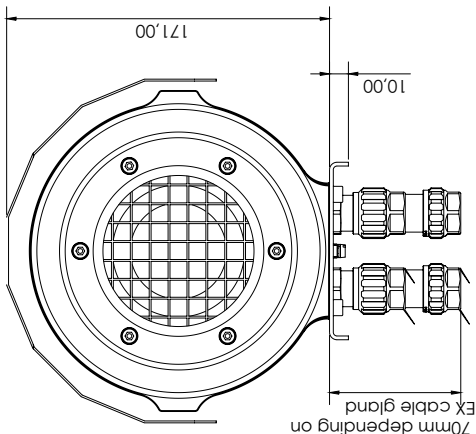
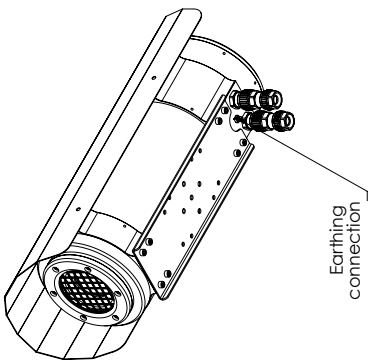
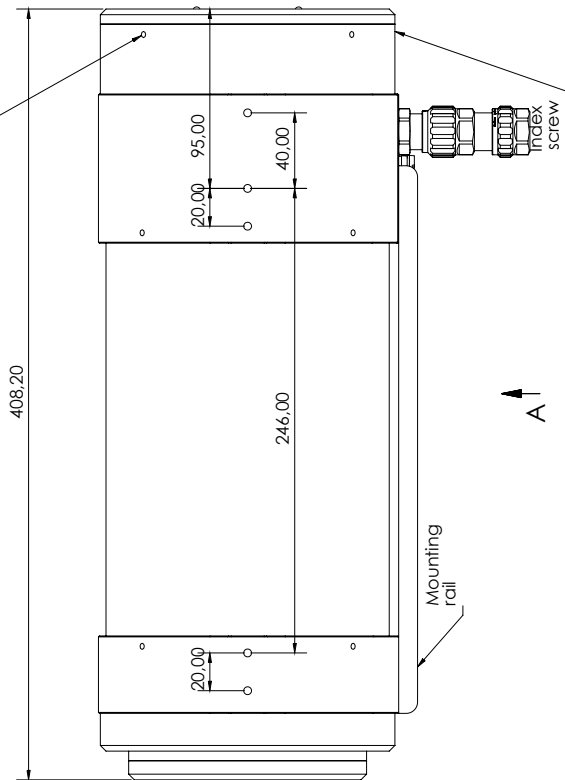
Overview with Sunshield installed



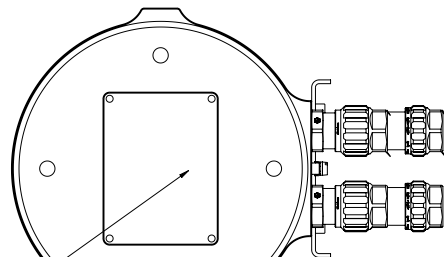
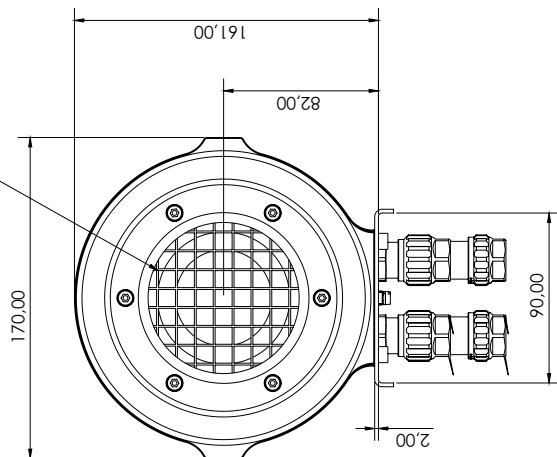
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Drawing without Sunshield

8x Mounting holes with M5x8 deep for Mounting rail or mounting plate



Protective grid



Hole for installation wrench

Type label

All dimensions in mm