FLIR A310 ex

Fully Compliant With ATEX Regulations

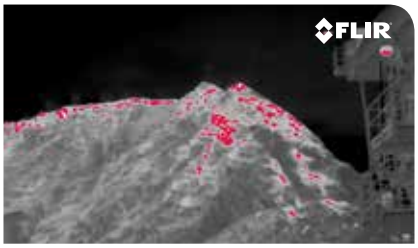
Explosive atmospheres need to be protected from ignition sources. Selecting equipment and protective systems which meet the requirements of the ATEX Product Regulations or similar regulations is essential.

FLIR A310 ex is an ATEX compliant solution, with a thermal imaging camera mounted in an enclosure, making it possible to monitor critical and other valuable assets also in explosive atmospheres. Typical applications for the A310 ex include process monitoring, quality control, and fire detection in explosive locations. Because the FLIR A10 ex is rated IP 67, it can be installed in dusty environments.

The Flame-Proof Enclosure "d" prevents any explosion transmission from the inside of the enclosure to the outside.

FLIR A310

The thermal imaging camera inside the FLIR A310 ex is a FLIR A310. This camera is equipped with both measurement and alarm functionalities. For a more detailed description of the FLIR A310 thermal imaging camera, ask for FLIR A310 product leaflet or consult FLIR.com.



Hot spots in wood chip pile.

Flare detection

INTEGRATED CONTROLLER

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. The access is accomplished through an integrated web interface or Modbus TCP/IP.

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

HEATER

FLIR A310 ex comes with a heater which effectively prevents fogging and freezing of the protection window.

VERIFICATION CERTIFICATE ZELM 12 ATEX 0485 X

The FLIR A310 ex is ATEX-certified. It can be installed in classification zones 1, 2, 21 and 22. The certification comprises the whole system, which includes the enclosure, as well as all components inside, such as the thermal imaging camera, heater and integrated controller.

Your authorized FLIR distributor:

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Technical specifications FLIR A310 ex

General Data	FLIR A310 ex
Ambient temperature range for operation	–20°C to +40°C (-4°F to 104°F)
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 / Surface	Nickel-plated aluminium / 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 / Power cable configuration	Helukabel 37264 / Pigtail
Length of power cable	4 m (13 ft.)
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 IIC T85° Db
Verification certificate	ZELM 12 ATEX 0485 X
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) / Focal length	25° × 18.8° with 18 mm (0.7 in.) lens or 45° × 33.8° with 9.66 mm (0.38 in.) lens
Minimum focus distance	0.4 m (1.31 ft.)
Spatial resolution (IFOV)	1.36 mrad with 25° lens or 2.59 mrad with 45° lens
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	–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
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 / standard	100 Mbps / 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, SNTP, RTSP, RTP, HTTP, ICMP, IGMP, ftp, SMTP, SMB (CIFS), DHCP, MDNS (Bonjour), uPnP
Shipping information	
Infrared camera with lens, in explosion-proof housing, cardboard box, Printed documentation, User documentation CD-ROM, Utility CD-ROM	

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