FLIR AX8 9 Hz

P/N: 71201-0101

Copyright

© 2014, FLIR Systems, Inc.

All rights reserved worldwide. Names and marks appearing herein are either registered trademarks or trademarks of FLIR Systems and/or its subsidiaries. All other trademarks, trade names or company names referenced herein are used for identification only and are the property of their respective owners.

Document identity

Publ. No.: 71201-0101
Release:
Commit: 20956
Language: en-US
Modified: 2014-11-24
Formatted: 2014-11-25

Corporate Headquarters

FLIR Systems, Inc.
27700 SW Parkway Ave.
Wilsonville, OR 97070
USA
Telephone: +1-503-498-3547

Website

http://www.flir.com

Customer support

http://support.flir.com

Disclaimer

Specifications subject to change without further notice. Camera models and accessories subject to regional market considerations. License procedures may apply. Products described herein may be subject to US Export Regulations. Please refer to exportquestions@flir.com with any questions.

General description
The FLIR AX8 camera/sensor offers an affordable and accurate temperature measurement solution for anyone who needs to solve problems that need built in “smartness” such as analysis, alarm functionality, and autonomous communication using standard protocols. The FLIR AX8 camera/sensor also has all the necessary features and functions to build distributed single- or multi-camera solutions utilizing standard Ethernet hardware and software protocols.
The FLIR AX8 camera/sensor also has built in support to connect to industrial control equipment such as PLCs, and allows the sharing of analysis and alarm results and simple control using the Ethernet/IP and Modbus TCP field bus protocols.
Key features:
• Support for the EthernetIP field bus protocol (analyze, alarm, and simple camera control). • Support for the Modbus TCP field bus protocol (analyze, alarm, and simple camera control). • Built-in analysis functionality. • Alarm functionality, as a function of analysis and more. • Built-in web server for control and set up. • MJPEG/MPEG4/H.264 image streaming. • PoE (Power over Ethernet). • General purpose I/O. • 100 Mbps Ethernet (100 m cable). • On alarm: file sending (FTP) or email (SMTP) of analysis results or images.
Typical applications:
• Electrical and mechanical condition-monitoring applications where temperature or temperature trends can be an indication of a potential risk of failure. • Simple process control applications.

Imaging and optical data	
IR resolution	80 × 60 pixels
Thermal sensitivity/NETD	< 0.10°C @ +30°C (+86°F) / 100 mK
Field of view (FOV)	48° × 37°
Minimum focus distance	0.1 m (0.33 ft.)
Depth of field	0.1 m (0.33 ft.), infinity

FLIR AX8 9 Hz

P/N: 71201-0101
© 2014, FLIR Systems, Inc.
#71201-0101; r. /20956; en-US

Imaging and optical data	
Focal length	1.54 mm (0.061 in.)
Spatial resolution (IFOV)	11.1 mrad
F-number	1.1
Image frequency	9Hz
Focus	Fixed

Detector data	
Detector type	Focal Plane Array (FPA), uncooled microbolometer
Spectral range	7.5–13 µm
Detector pitch	17 µm
Detector time constant	Typical 12 ms

Visual camera	
Built-in digital camera	640 × 480
Digital camera, FOV	Max 66°, Adapts to the IR lens
Sensitivity	Minimum 10 Lux without illuminator

Measurement	
Object temperature range	–10 to +150°C (14 to +302°F)
Accuracy	±2°C (±3.6°F) or ±2% of reading (+10 to +100C@ +10 to +35 amb)

Measurement analysis	
Spotmeter	6
Area	6 boxes with max./min./average/position
Automatic hot/cold detection	Max/Min temp. value and position shown within box
Measurement presets	Yes
Measurement option	Schedule response: File sending (ftp), email (SMTP)
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	Automatic alarms on any selected measurement function, by means of Digital In, Camera temperature, timer. A maximum of 5 alarms can be set.
Alarm output	Digital Out, log, store image, file sending (ftp), email (SMTP), notification

FLIR AX8 9 Hz

P/N: 71201-0101
© 2014, FLIR Systems, Inc.
#71201-0101; r. /20956; en-US

Set-up	
Color palettes	Color palettes (BW, BW inv, Iron, Rain)
Set-up commands	Date/time, Temperature°C/°F
Web interface	Yes

Storage of images	
Storage media	Built-in memory for image storage
Image storage mode	IR, visual, MSX
File formats	JPEG+FFF

Image streaming	
Image streaming formats	• Motion JPEG stream MJPEG Baseline Process Encoder Baseline ISO/IEC 10918-1 JPEG compliance • MPEG stream Stream format MPEG-4 ISO/IEC 14496-2 Simple Profile level 2 • H.264 stream Stream format H.264 Baseline Profile level 2.0
Image streaming resolution	640 × 480
Image modes	• Thermal • Visual • MSX
Manual image adjustment	Level/span/max/min
Multi Spectral Dynamic Imaging (MSX)	IR-image with enhanced detail presentation

Ethernet	
Ethernet	Control, result and image
Ethernet, type	100 Mbps
Ethernet, standard	IEEE 802.3
Ethernet, connector type	M12 8-pin X-coded
Ethernet, communication	TCP/IP socket-based FLIR proprietary
Ethernet, video streaming	Yes
Ethernet, power	Power over Ethernet, PoE IEEE 802.3af class 0.
Ethernet, protocols	Ethernet/IP, Modbus TCP, TCP, UDP, SNTP, RTSP, RTP, HTTP, ICMP, IGMP, sftp, SMTP, DHCP, MDNS (Bonjour)

Power system	
External power operation	12/24 VDC, 2 W continously/ 3.1 W absolute max
External power, connector type	M12 8-pin A-coded (Shared with digital I/O)
Voltage	Allowed range 10.8–30 VDC

Environmental data	
Operating temperature range	–0°C to +50°C (+32°F to +122°F)
Storage temperature range	–40°C to +70°C (–40°F to +158°F) according to IEC 68-2-1 and IEC 68-2-2
Humidity (operating and storage)	IEC 60068-2-30/24 h 95% relative humidity +25° C to +40°C (+77°F to +104°F)/ 2 cycles
EMC	• EN 61000-6-2:2001 (Immunity) • EN 61000-6-3:2001 (Emission) • FCC 47 CFR Part 15 Class B (Emission)

P/N: 71201-0101
© 2014, FLIR Systems, Inc.
#71201-0101; r. /20956; en-US

Environmental data	
Encapsulation	IP 67 (IEC 60529)
Bump	25 g (IEC 60068-2-29)
Vibration	2 g (IEC 60068-2-6)

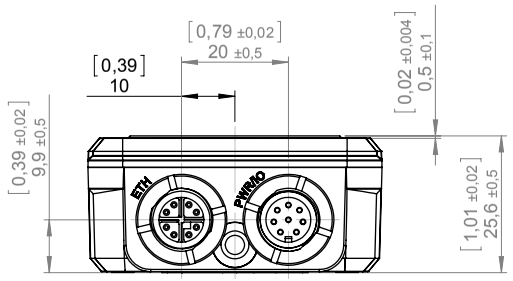
Physical data	
Weight	0.125 kg (0.28 lb.)
Camera size (L × W × H)	54 × 25 × 79 mm without connectors 54 × 25 × 95 mm with connectors mm
Base mounting	4× mounting hole depth max 4.8 mm for screw type Delta PT 22 (ø2.2 mm)
Housing material	PA6 with 30% GF (glass fiber reinforced)

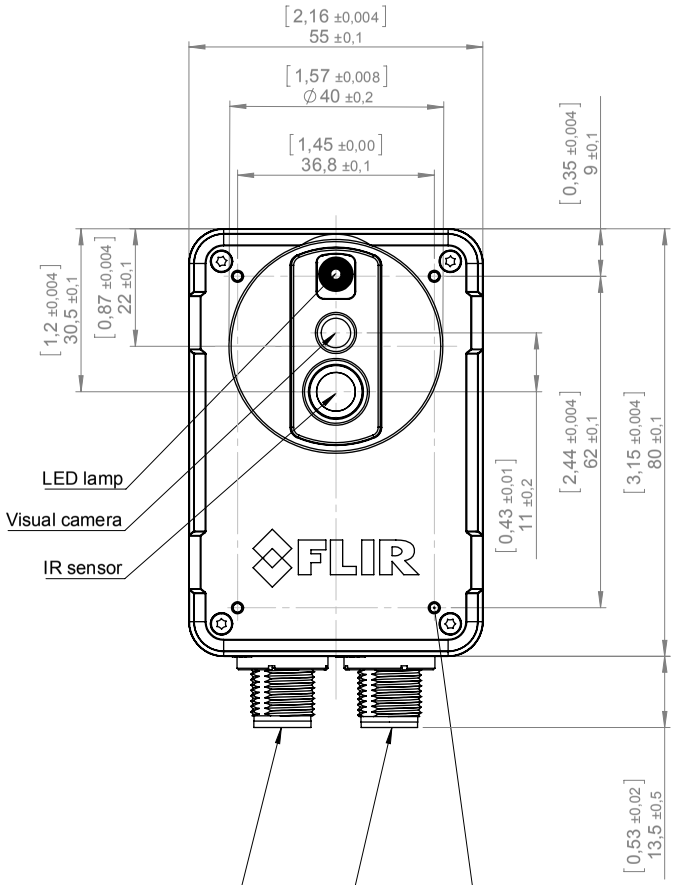
Shipping information	
Packaging, type	Cardboard box
List of contents	• Infrared camera with lens • Cardboard box • Printed documentation • User documentation CD-ROM
EAN-13	4743254001725
UPC-12	845188009373
Country of origin	Estonia

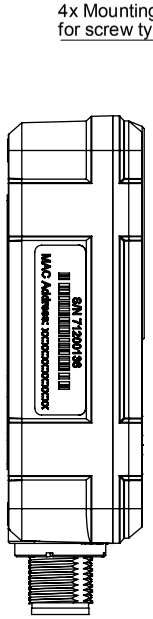
Supplies & accessories:

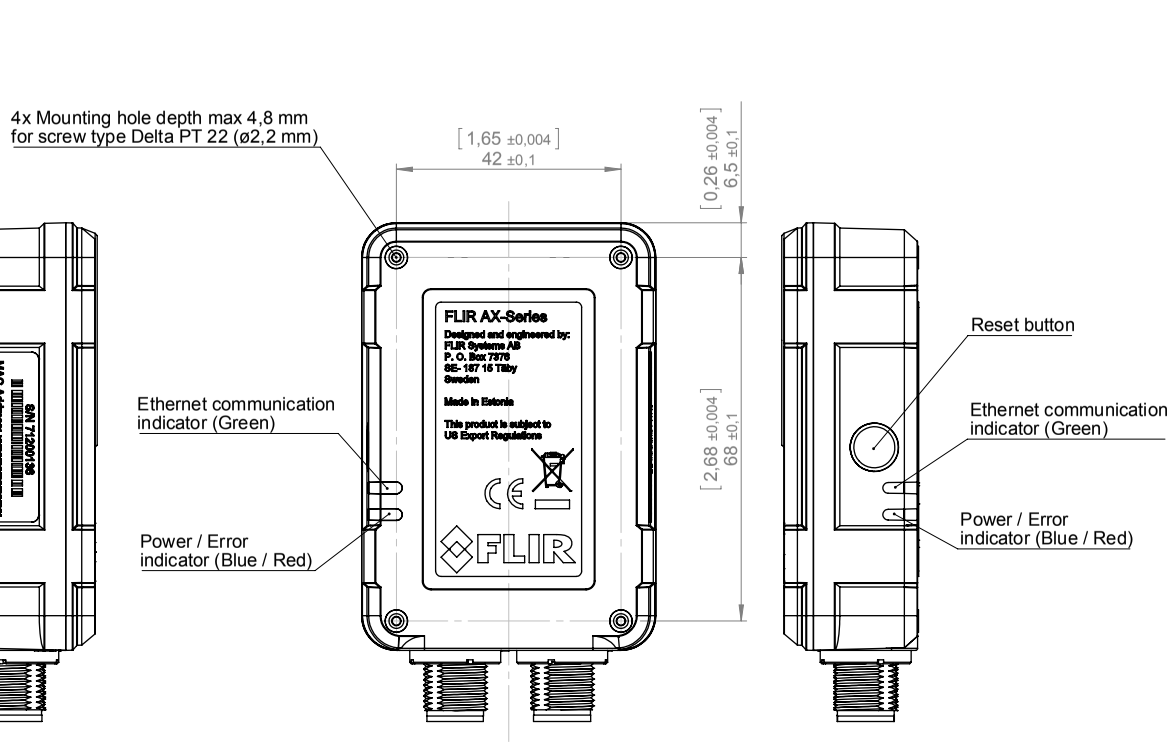
- T198348; Cable kit Mains (UK,EU,US)
- T911112; PoE injector
- T128391ACC; Cable, M12 to pigtail (FLIR AX series)
- T128390ACC; Ethernet cable, M12 to RJ45

This document must not be communicated or copied completely or in part, without our permission. Any infringement will lead to legal proceedings.
FLIR SYSTEMS AB









Konstr/Drawn: P. MARCUS	Datum/Date: 2014-08-27	Kontr/Check: MABR	Material: -
Ändrad av/Modified by: P. MARCUS	Ändrad/Modified: 2014-10-22	Ytjämnhet/Roughness: Ra µm	Ytbehandling/Surface treatment

Där ej annat anges/Unless otherwise stated
Gen tol ISO 2768-mK
Utdrag ur/Excerpt from ISO 2768-m

0,5-6	±0,1	Hålkälsradier
(6)-30	±0,2	Fillet radii
(30)-120	±0,3	
(120)-400	±0,5	Kanter brutna
(400)-1000	±0,8	Edges broken

Benämning/Denomination

Basic dimensions AX-series

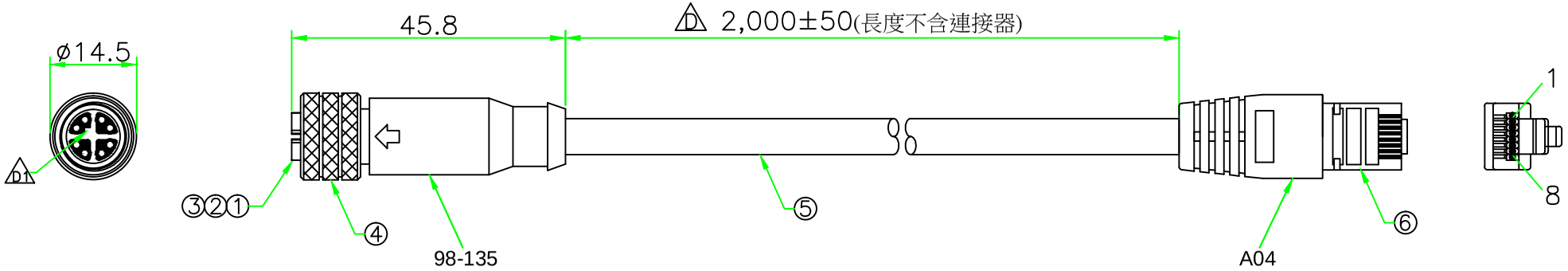
Skala/Scale: 1:1			Blad/Sheet: 1(1)
ArtNo.			Size: A3
Ritn nr/Drawing No: T128360			Rev: C

Denna handling får ej delges annan, kopieras i sin helhet eller delar utan vårt medgivande. Överträdelse härav beivras med stöd av gällande lag.
FLIR SYSTEMS AB

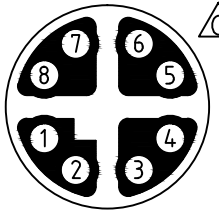
RoHS

IP67

REV.	DESCRIPTION	DATE
A	ISSUE	Dec/23/2013
B	Modify the wire diagram.	Dec/25/2013
C	Modify M12 Pin Assignment.	Dec/25/2013
D	Modify cable length.	Dec/25/2013
D1	Correct key direction.	Jan/22/2014
E	Add note.	Mar/30/2014
F	Modify P/N.	Sep/25/2014



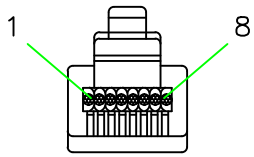
C



Pin Assignment
Front View
(前視圖)

B Wiring Diagram

M12			RJ45
1	Orange/White	(橙/白)	1
2	Orange	(橙)	2
3	Green/White	(綠/白)	3
4	Green	(綠)	6
5	Blue	(藍)	7
6	Blue/White	(藍/白)	8
7	Brown/White	(棕/白)	5
8	Brown	(棕)	4



Pin Assignment
Front View
(前視圖)

No.	PART NAME	DESCRIPTION	COLOR	Q'TY	REMARKS
6	RJ45 PLUG	RJ45 8P8C PLUG.		1	78018P8C30A
5	CABLE	CAT5E FTP 24AWG x 4 PAIR + AL/MY + Drain wire, OD:6.0mm.	BLACK	1	WAC2B0026
4	RING NUT	Brass, Nickel Plated.		1	M12F-RN
3	O-RING	Viton.	BLACK	1	M12-O-VK
2	CONTACT	Brass , Female pin ,6 u" Gold plated .		8	AASPF-1008-0.8
1	CONNECTOR	M12 X-coding Female connector insert. Nylon+GF.	BLACK	1	M12X-08F

UNIT: mm

SCALE 1:1

UNLESS OTHERWISE SPECIPED TOLERANCES:
x ± 0.25 xx ± 0.1
xxx ± 0.05 ANGLE ± 1°

REV. F

SHEET 1/1

TITLE: M12 X-Coding Female Molded Cable Ass'y

P/N: K129351004

DWG.NO: T128390 F

DR.

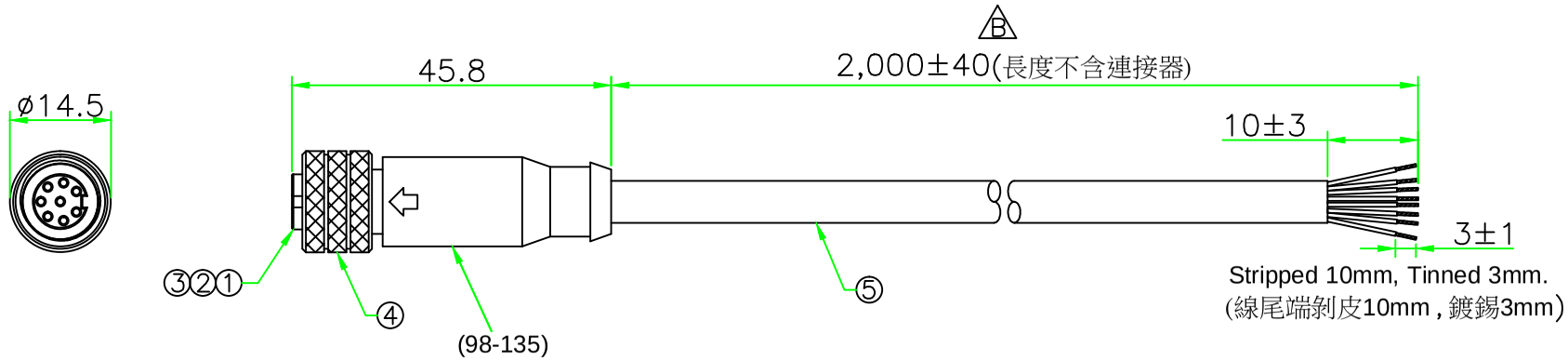
CH.

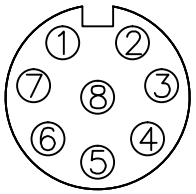
AP.

RoHS △C

IP67

REV.	DESCRIPTION	DATE
A	ISSUE	Dec/23/2013
B	Modify cable length.	Dec/25/2013
C	Add note.	Mar/20/2014
D	Modify P/N.	Sep/25/2014





Pin Assignment
Front View
(前視圖)

Wiring Diagram

1	Orange/White	(橙/白)
2	Orange	(橙)
3	Green/White	(綠/白)
4	Green	(綠)
5	Blue	(藍)
6	Blue/White	(藍/白)
7	Brown/White	(棕/白)
8	Brown	(棕)

No.	PART NAME	DESCRIPTION	COLOR	Q'TY	REMARKS
5	CABLE	CAT5E FTP 24AWG x 4 PAIR + AL/MY + Drain wire, OD:6.0mm.	BLACK	1	WAC2B0026
4	RING NUT	Brass, Nickel Plated.		1	M12F-RN
3	O-RING	Viton.	BLACK	1	M12-O-VK
2	CONTACT	Brass , Female pin ,6 u" Gold plated .		8	AASPF-1008-0.8
1	CONNECTOR	M12 A-coding Female connector insert. Nylon+GF.	BLACK	1	M12A-08F

UNLESS OTHERWISE SPECIPED TOLERANCES:
x ± 0.25 xx ± 0.1
xxx ± 0.05 ANGLE ± 1

UNIT: mm
SCALE 1:1
REV. D
SHEET 1/1

TITLE: M12 A-Coding 8P Female Molded Cable Ass'y
P/N: K129351003
DWG.NO: T128391 △D
DR.
CH.
AP.