

FLIR ThermiRail

The world's first intelligent thermal sensor for rail transport safety



ThermiRail is an integrated thermal camera and detector for obstacle detection in a public transport environment. ThermiRail does not need light to operate, but uses the thermal energy emitted from obstacles. This enables the sensor to detect vehicles, people and large animals in the darkest of nights, over a long range and in the most difficult weather conditions. The result is reliable, 24/7 detection for a wide range of applications.

LEVEL CROSSING OBSTACLE DETECTION

ThermiRail can be used to prevent collisions by detecting vehicles that are stuck on the level crossing and blocking the passage of an approaching train. The intelligent ThermiRail sensor will transmit its detection information over contact closures or over a TCP/IP network to a control & operations room where the detection event and live thermal video is shown.

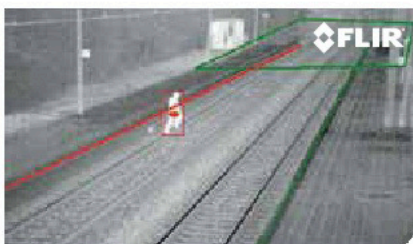
PLATFORM, TUNNEL AND TRACK SAFETY

ThermiRail is a cost-effective solution for the detection of people falling off a platform, people entering a tunnel and people that walk on the rail tracks. Again, contact closures and TCP/IP messages are sent upon detection of a person in a user-configurable detection zone to an operator for immediate action.

ThermiRail uses thermal imaging to detect people in between the different movements of trains and trams going through the detection field of view. Next to suppressing train movement, ThermiRail can also ignore small animals from its detection.



Level crossing obstacle detection



Platform, tunnel and track safety

KEY BENEFITS:

- CAMERA AND DETECTOR INTEGRATED INTO ONE UNIT
- SIMPLE AND QUICK INSTALLATION
- FIELD PROVEN DETECTION PERFORMANCE
- 24-HOUR DETECTION, AT NIGHT AND IN THE MOST DIFFICULT WEATHER CONDITIONS
- NO NEED FOR ADDITIONAL LIGHTING

Imaging Specifications

System Overview		ThermiRail			
Detection functionalities	Vehicle, person and animal detection				
# detection zones	1 vehicle stop detection zone 2 people and animal detection zones				
Camera					
Resolution	VGA (640 x 480)				
Frame rate	9 FPS				
Type	Long wave Infrared (7 – 14 μm)				
Compression	H.264, MPEG-4, MJPEG (dual stream)				
	Part number	Focal distance	Field of view	Functionality	Distance (vehicle presence)
ThermiRail ETH/BPL 690s	ETH: 10-7060 BPL: 10-7050	7.5 mm	Horizontal: 90° Vertical: 69°	Vehicle, person and animal detection	0 - 35 m
ThermiRail ETH/BPL 669s	ETH: 10-7061 BPL: 10-7051	9 mm	Horizontal: 69° Vertical: 56°	Vehicle, person and animal detection	10 - 45 m
ThermiRail ETH/BPL 645s	ETH: 10-7062 BPL: 10-7052	13 mm	Horizontal: 45° Vertical: 37°	Vehicle, person and animal detection	15 - 80 m
ThermiRail ETH/BPL 632s	ETH: 10-7063 BPL: 10-7053	19 mm	Horizontal: 32° Vertical: 26°	vehicle, person and animal detection	25 - 110 m
Housing					
Material	Aluminum				
Dimensions (incl. mounting bracket)	Vertically mounted 45cm x 16cm x 12cm Horizontally mounted 41cm x 18cm x 12cm				
Sunshield	Optional				
Power, outputs, communications					
Contact closures	3 for ETH versions, direct or via optional ETH interface (PN 10-6075) 16 for BPL versions, via TI x-stream BPL (PN 10-6085)				
Ethernet	For communication of output state events, configuration & monitoring (streaming video)				
Input Power	12-42VDC, 12-30VAC				
Current Consumption	< 150mA @ 24VDC (< 200mA @ 24VDC peak at start-up)				
Power Consumption	≤ 3,6W (≤ 4,8W peak at start-up)				
PC tool for set-up	Traficon Configuration Tool (TCT)				
Regulatory					
EU Directives	EMC 2004/108/EC				
RoHS 2011/65/EU	0-95% relative				
Environmental					
Shock & Vibration	NEMA II specs				
Materials	All weatherproof (UV-resistant)				
Protection Grades	Housing = IP68, Connectors = IP67				
Temperature Range	From -34°C to +80°C (-29°C to 165°F)				
FCC	FCC part 15 Class A				

PORTLAND
Corporate Headquarters
FLIR Systems, Inc.
27700 SW Parkway Ave.
Wilsonville, OR 97070
USA
PH: +1 866.477.3687

BELGIUM
FLIR Systems Trading
Belgium BVBA
Luxemburgstraat 2
2321 Meer
Belgium
PH: +32 (0) 3665 5100

FLIR ITS
Hospitaalweg 1B
B-8510 Marke
Belgium
PH: +32 (0)56 37 22 00

www.flir.com
NASDAQ: FLIR

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SWEDEN
FLIR Systems AB
Antennvägen 6,
P.O. Box 7376
SE-187 66 Täby
Sweden
PH: +46 (0)8 753 25 00

SANTA BARBARA
FLIR Systems, Inc.
70 Castilian Drive.
Goleta, CA 93117
USA
Ph: +1 866.477.3687

UK
FLIR Systems UK
2 Kings Hill Avenue
Kings Hill
West Malling - Kent
ME19 4AQ
United Kingdom
PH: +44 (0)1732 220 011