



**ITAIA**

ELECTRONICS  
RESEARCH  
DEVELOPMENT

## ROADSIDE LIGHTING CONTROL



Litostrojska cesta 44/d, SI-1000 Ljubljana

T +386 (1) 514 18 00, F +386 (1) 514 18 04

[info@itaia.si](mailto:info@itaia.si), [www.itaia.si](http://www.itaia.si)

## SELECTION GUIDE

MODEL	FM-1	FM-4	FM-6	FG-8	FS-1	FS-20	FX-100
Measurement	L <sub>20</sub> (Cd/m <sup>2</sup> )	L <sub>20</sub> (Cd/m <sup>2</sup> )	L <sub>20</sub> (Cd/m <sup>2</sup> )	L <sub>seq</sub> (Cd/m <sup>2</sup> )	L (Lux)	L (Lux)	L (Lux)
Aperture (fva) / Correction	20°	20°	20°	56,8° CIE 88:2004	130° / cosine	180° / cosine	180° / cosine
Basic Accuracy	3 %	3 %	3 %	3 %	7 %	3 %	1 %
Measuring Range <small>*Custom Ranges Available</small>	* / 0 - 6.500 Cd/m <sup>2</sup> 0 - 10.000 Cd/m <sup>2</sup>	* / 0 - 6.500 Cd/m <sup>2</sup> 0 - 10.000 Cd/m <sup>2</sup>	* / 0 - 6.500 Cd/m <sup>2</sup> 0 - 10.000 Cd/m <sup>2</sup>	* / 0 - 6.500 Cd/m <sup>2</sup> 0 - 10.000 Cd/m <sup>2</sup>	0 - 20.000 Lux	* / 0 - 100 Lux 0 - 20.000 Lux	* / 0 - 100 Lux 0 - 20.000 Lux
Current Output	4-20 mA	/	4-20 mA	4-20 mA	/	4-20 mA	/
Voltage Output	0-10 V	/	0-10 V	0-10 V	/	0-10 V	0-5 V
Frequency Output	/	/	1-10.000 Hz	1-10.000 Hz	/	1-10.000Hz	/
Communication Port	RS 485/232	RS 485/232	RS 485/232	RS 485/232	/	RS 485/232	RS 232
230 V AC Out/(A) <small>*24 V AC Optional</small>	4	4	6	6	2	4	/
Field of Use	mid-length and long tunnel	underpasses, short and mid-length tunnel	Underpasses, short and mid-length tunnel	mid-length and long tunnel	open road lighting control	mid-length and long tunnel, open road lighting control	high accuracy reference illumination probe
	standalone / PLC lighting control	standalone lighting control	standalone / PLC lighting control	advanced PLC lighting control to CIE-88:2004	standalone lighting control	standalone control / PLC connection	luminaries installation inspection
Accessories & Options	pole bracket / stainless steel housing, wiper-washer, 24 V AC version	pole bracket / stainless steel housing, wiper-washer, 24 V AC version	pole bracket / stainless steel housing, wiper-washer, 24 V AC version	pole bracket / stainless steel housing, wiper-washer, 24 V AC version	stainless steel housing, 24 V AC version	stainless steel housing, 24 V AC version	/

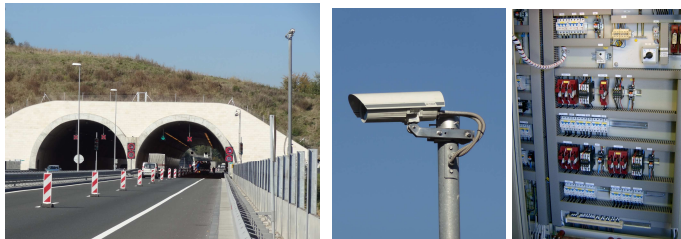
## FM-1



### SI Cenkova / Outside FM-1 / In-tunnel Reference FM-1 / SIEMENS SIMATIC Controll Unit

SIMATIC SCADA automatically controls light in tunnel threshold cone based on outside FM-1. If tunnel illumination measured with inside reference FM-1 does not reach pre-specified level, light-chain combination is moved up to next level. Light conditions are monitored and supervised from highway-control center over the ethernet connection.

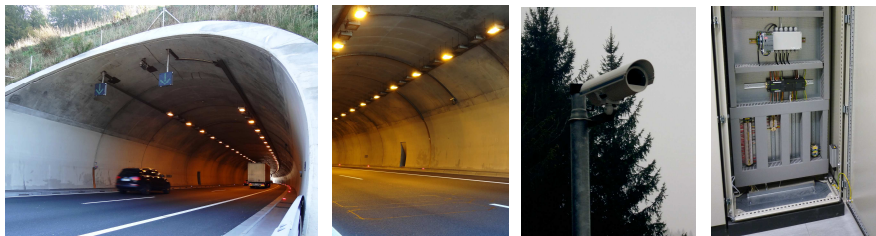
## FM-4



### SI Vodole / Outside FM-4 -Standalone Light Control

FM-4 switches luminaires chains due to outside lightning conditions. If fire button is pressed in the tunnel, all available light is switched on.

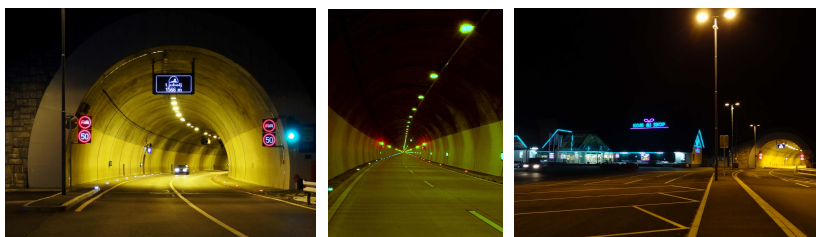
## FM-6



### SI Malečnik / Outside FM-6 -Standalone Light Control / Traffic Center Supervision

FM-6 switches luminaires chains due to outside lightning conditions. Analog output is connected to web server and provides monitoring from remote road-control center.

## FG-8



### SI – AUT Ljubelj / Outside FG-8 / In-tunnel Reference FM-1 / SIEMENS S2000 Controll Unit

Outside ligh conditions are detected with FG-8 photometer. S2000 calculates and switches luminaire-chains based on FG-8 data, inside reference FM-1, traffic density and other conditions. Internet connection it provides remote monitoring and supervision from three, internationally time-shared controll centers.

## FS-1



### SI Ljubljana South-East Highway / FS-1 Open Road Lighting Control

Road lighting is switched in 2-levels depending to outside light conditions. Reduction is applied at low traffic night hours.

## FS-20



### SI Godovič / Outside FM-1 / In-tunnel Reference FS-20 / SIEMENS Control Unit

FM-1 controls tunnel lighting due to outside light conditions. Level shifting is provided based on inside FS-20 measurement. Analog outputs are connected to web server for remote monitoring.

## FX-100



### Light & Visibility Monitoring Durring In-tunnel Fire Exercise.

Dens smoke blockes light in tunnel in the event of fire. Ventilation, lighting and other systems must provide sofficiant visibility for evacuation. Light profile over the tunnel tube is measured using several FX-100 and computer.

