ELECTRONICS
RESEARCH
DEVELOPMENT

ROADSIDE LIGHTING CONTROL

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SELECTION GUIDE

MODEL	FM-1	FM-4	FM-6	FG-8	FS-1	FS-20	FX-100
Measurement	L_{20} (Cd/m^2)	L_{20} (Cd/m^2)	L_{20} (Cd/m^2)	L_{seq} (Cd/m^2)	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 *custom ranges available	*/ 0 - 6.500 Cd/m^2 0 - 10.000 Cd/m^2	*/ 0 - 6.500 Cd/m^2 0 - 10.000 Cd/m^2	*/ 0 - 6.500 Cd/m^2 0 - 10.000 Cd/m^2	*/ 0 - 6.500 Cd/m^2 0 - 10.000 Cd/m^2	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) *24 V AC optional	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 Control Unit

SIMATIC SCADA automaticaly controls light in tunnel treshold 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 luminaire chains due to outside lightning conditions. If the fire button is pressed in the tunnel, all available lights are switched on.

FM-6



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

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

FG-8



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

FG-8 photometer detects outside light conditions. S2000 calculates and switches luminaire chains based on FG-8 data, inside reference of FM-1, traffic density and other conditions. Internet connection provides remote monitoring and supervision from three internationaly time-shared control centers.

FS-1


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

Road lightning is switched in 2 levels depending on 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

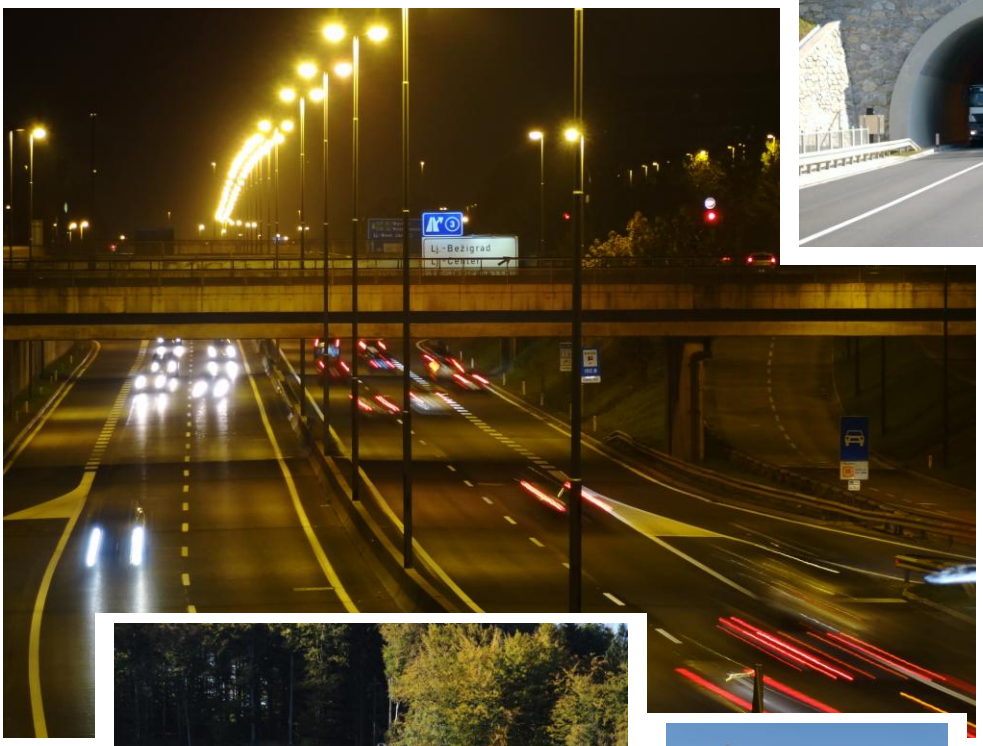
FM-1 controls tunnel lighting due to outside light conditions. Level shifting is provided based on inside FS-20 measurement. Analog outputs are connected to a web server for remote monitoring.

FX-100



Light & Visibility Monitoring Durring In-tunnel Fire Exercise.

Dense smoke blocks light in a tunnel in the event of fire. Ventilation, lighting and other systems must provide sufficient visibility for evacuation. Light profile through the tunnel tube is measured using several FX-100 and a computer.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