FIESSLER ELEKTRONIK

FMSC System-family

Technical data

Techical specification	**FMSC Master** **FMSC Slave**
scope of application	Programmable controller for safe and non safe applications
Safety design of hardware	SIL 3 (IEC61508), pl e EN ISO 13849-1

Electrical specification	**FMSC Master** **FMSC Slave**
Power supply	24V DC
Tolerance range	18 ... 30,0 V DC max. 10% ripple
Current consumption	typ. 20 mA
Fuse for power supply	T 20 A extern
Terminal connection	screw- or spring type
power supply	max. 2,5 mm^2
input level	max. 1,5 mm^2
output level	max. 2,5 mm^2
Interface	Mirco USB for programming, hardware diagnosis and Debug-Mode

Inputs	**FMSC Master** **FMSC Slave**
Number of inputs	6 (24V) and 6 (24V oder 5V)
Galvanic isolation	no
Signal level at log "0"	0 ... 8V DC at 24V 0 ... 1,5V DC at 5V
Signal level at log "1"	15 ... 28V DC at 24V 3,5 ... 6V DC at 5V
Input current	4 mA (at 24V)
min impulse duration	0,5 ms
Status displayed via	LED

Outputs - safe	**FMSC Master** **FMSC Slave**
Number of outputs - safe	4
Galvanic isolation	no
Output current at log "1"	max. 4 A
Short circuit protection	electronically
Status displayed via	LED

Outputs - Standard	**FMSC Master** **FMSC Slave**
Number of outputs - standard	5
Galvanic isolation	no
Output current at log "1"	max. 0,5 A
Short circuit protection	electronically
Status displayed via	LED

Mechanical specification	FMSC Master FMSC Slave
Design size (hxbxt) without connectors	114,5 x 22,5 x 99 mm
Installation on top hat rail	according to DIN 50 022
Protection class housing	IP 20
Protection class terminals	IP 20
Weight	130 gr / 170 gr with connectors

Environmental conditions	FMSC Master FMSC Slave
Operating temperature range	0 ... + 55° C
Storage temperature range	-25° C ... +70° C
Relative humidity	10% ... 95% RH
Creep distance	DIN EN 50 178
Oscillation	DIN EN 60 068-2-6
EMC	DIN EN 61 000-6-2
Condensation	not allowed

Technical data	FMSC Master FMSC Slave
Number of counter inputs	2
Typ of sensors	Linear encoder Rotary encoder
Signal voltage	5V or 24V
Resolution linear encoder	1 - 1000 μm
Resolution rotary encoder	1 - 36000 Pulses
The smallest possible speed with linear encoder	>= 1 mm/s
The smallest possible speed with rotary encoder	>= 1 U/min
Number of pulse counter	2

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technical data

electrical data	FMSC Slave Modbus Slave
power supply	24V DC
	18 ... 30,0 V DC
current draw	typ. 20 mA
Fuse	T 1 A external
connection type	
voltage supply	screw plug connector / Sub-D connector
output	max. 2,5 mm^2 max. 2,5 mm^2

mechanical data	FMSC Slave Modbus ASCII
size (HxDxW) without connector	114,5 x 22,5 x 99 mm
mounting on top-hat trail	according to DIN 50 022
protection method housing	IP 20
protection method connector	IP 20
weight	100 gr / 120 gr with connector

enviromental conditions	FMSC Slave Modbus ASCII
operating temperatur	0 ... + 55° C
storage temperatur	-25° C ... +70° C
relativ humidity	10% ... 95% RH
leakage current	DIN EN 50 178
Vibrations	DIN EN 60 068-2-6
EMC	DIN EN 61 000-6-2
condensation	prohibited

technical data	FMSC Slave Modbus ASCII
interfaces	RS485 : screw plug connector BLxT Prog : screw plug connector RS232 : SUB-D 9-pin

Outputs - standard	FMSC Slave Modbus ASCII
quantity	1
galvanical isolation	no
output current at log "1"	max. 0,5 A
short circuit protection	electronical

Overview about FMSC function elements

- Emergency stop
- Safety gate monitoring
- Operating mode selector switch
- Operating console evaluation
- Valve monitoring dynamically or static
- Safety light curtain evaluation
- Two hand control monitoring
- Fiessler AKAS evaluation
- Fiessler BLVT programming
- Safety foot pedals
- Fiessler AKAS muting system
- Overrun distance measurement via counter
- Direction and stop monitoring
- Brake ramp monitoring
- PSDI mode (1 up to 4 breaks)
- various muting applications

- AND - NAND
- OR - NOR
- XOR Inverter
- R- S- Flip- Flop
- Ton and Toff delay
- Monoflop rising or falling edge
- Timer Counter upward
- Decimal / binaryr or Binary / Decimal converter

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Technical data

Hardware overview	**FMSC Master FMSC ECO**	**FMSC Master FMSC BASIC**	**FMSC Master FMSC ADVANCED**	**FMSC Master FMSC PROFI**
I/O configuration	12 inputs 4 safe outputs 5 standard outputs	12 inputs 4 safe outputs 5 standard outputs	12 inputs 4 safe outputs 5 standard outputs	12 inputs 4 safe outputs 5 standard outputs
Expandable with...	- - - - -	... up to 4 slaves	... up to 8 slaves	... up to 16 slaves
Switch-off delay safe outputs in error mode	- - - - -	configurable	configurable	configurable
Fast shut down function 0,5 ms reaction time	- - - - -	- - - - -	configurable	configurable
Safe monitored number of axis	- - - - -	- - - - -	1 Axis / Master	1 Axis / Master up to 17 Axis complete system
Software overview	**FMSC Master FMSC ECO**	**FMSC Master FMSC BASIC**	**FMSC Master FMSC ADVANCED**	**FMSC Master FMSC PROFI**
PSDI - mode	- - - - -	- - - - -	implemented	implemented
Muting - application	- - - - -	- - - - -	implemented	implemented
BLVT - application	- - - - -	- - - - -	with communication Slave	with communication Slave
Connection overview		**FMSC Slave FMSC BASIC**	**FMSC Slave FMSC ADVANCED**	**FMSC Slave FMSC PROFI**
Connection to Master type of slaves		FMSC Basic Master FMSC Advanced Master FMSC Profi Master	FMSC Advanced Master FMSC Profi Master	FMSC Profi Master

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Type overview

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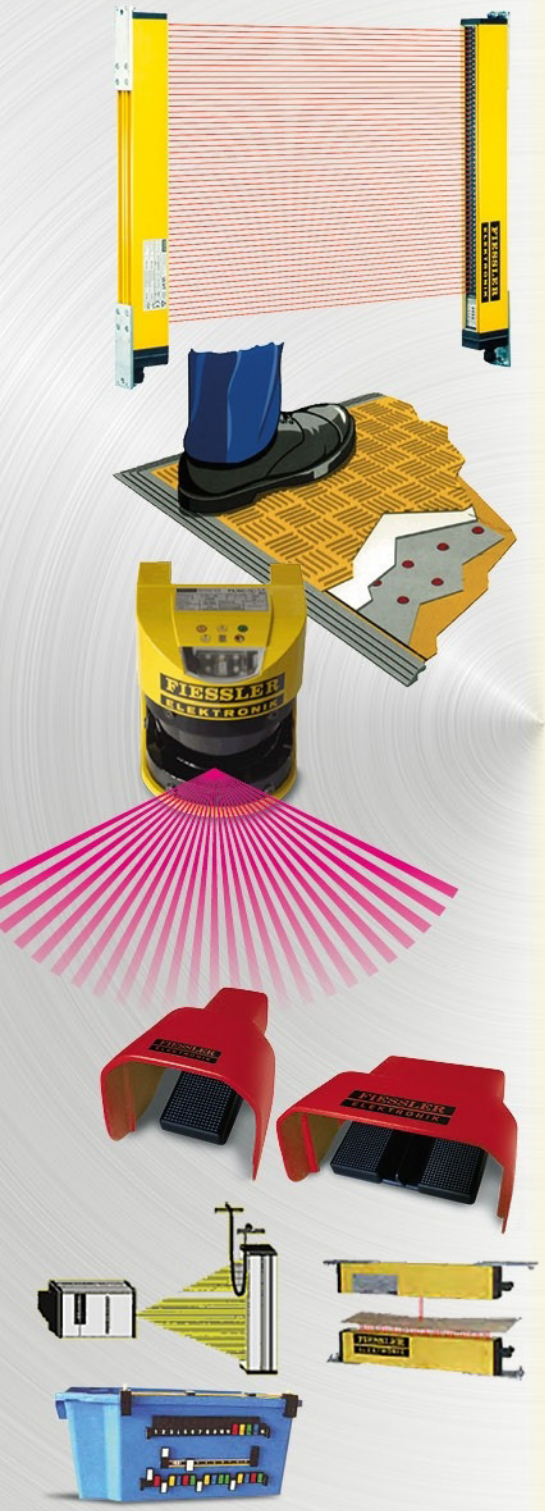
The delivery programme



Innovative solutions

Safety light curtains
Cat 4, SIL 3, PL e
Protective field height up to 2,500 mm
High range up to 60 m
Finger or hand protection
Very short response time as of 2 ms
Switching device integrated
Blanking and cascading

Safety foot mats
Type 3, SIL 2, PL d
individual sizes and shapes
Series connection of up to ten mats
Surface in plastic, aluminium or stainless steel
Capacity of up to 2,000 N
High safety through closed-circuit protection

Safety laser scanner
Cat 3, SIL 2, PL d
Simple assembly
Protective field 4 m, range 7 m
Warning field 15 m
Measuring field 50 m range
Several areas programmable

Safety foot-switch
single or double pedal

Control, measure, regulate
Measuring light curtains
Hole detection devices
Directional counting light barriers
Loop sensors
Encoding strips

FIESSLER ELEKTRONIK

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