

# Schmersal PROTECT SELECT Programmable Safety Relays



**PROTECT-SELECT-CC-AD**

The PROTECT SELECT compact safety module offers greater flexibility during installation and integration of safety systems into machine functions. Thanks to the four preloaded safety programs, programming skills are not required as with conventional safety PLCs. These programs can be selected and further modified via the rocker switch and screen. Program information, device status, warnings, and errors are shown on the graphic color display in plain text for quick and easy diagnostics.

The module provides monitoring of all common safety sensors:

- Emergency stop
- Safety light curtains
- Safety switches
- Four-wire safety mats
- Two-hand control

This saves time and money during project planning, wiring, programming, functional testing and maintenance.

## Features

- Simple and flexible parameter setting
- No programming skills required
- Up to 18 safety inputs (9 pairs) for redundant inquiry of all common safety sensors
- 4 safety semiconductor outputs
- 2 safety relay outputs
- Replaces up to 8 safety monitoring modules up to PLe/SIL 3
- Error and status messages in plain text
- Multilingual menu navigation via color display

### Safety Data Values per EN ISO 13849-1, EN 62061, IEC 61508

Performance Level	Up to e
MTTF(d)	>100 years
DC Average	High
SIL CL	Up to 3
HFT (Hardware Failure Tolerance)	1
SFF	>90
PFH(D)	1.78x10 <sup>-8</sup> (valid for dual channel and 60% load)

### Schmersal PROTECT SELECT Selection Chart

Part Number	Price	Number of Configurations	Safety Input Type	Outputs	Status Outputs	Connection	Drawing
<b><u>PROTECT-SELECT-CC-AD</u></b>	\$477.00	4 programs	18 digital	2 NO and 4 OSSD (2 pairs and 2 singles)	4 status outputs	Removable cage terminals	<a href="#">PDF</a>
<b><u>PROTECT-SELECT-SK-AD</u></b>	\$465.00	4 programs	18 digital	2 NO and 4 OSSD (2 pairs and 2 singles)	4 status outputs	Removable screw terminals	<a href="#">PDF</a>

### Schmersal PROTECT SELECT Specifications

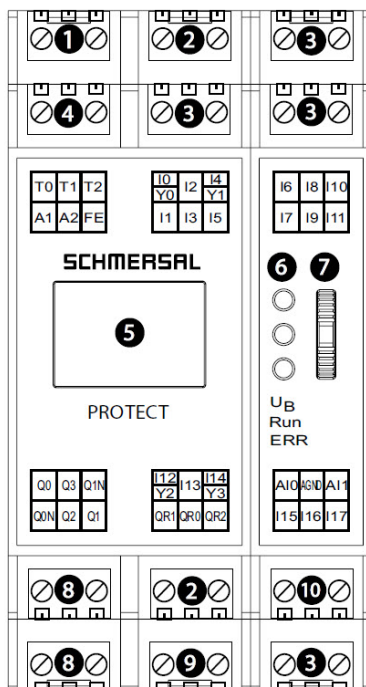
Input/Output Specifications	
Operating Temperature	-25°C [-13°F] to 55°C [131°F]
Vibration Resistance	Tested to EN 60068-2-6
Degree of Protection	IP20
Housing	Polyamide / V0
Weight	300g [10.6 oz]
Agency Approvals	CE, UL (listed number E57648)
Wire Fixing	Plug-in terminals
Cable Section Min/Max	0.25 mm <sup>2</sup> [24 AWG] - 2.5 mm <sup>2</sup> [14 AWG]
Operating Voltage Range	19.2 to 28.8 VDC
Maximum Consumption	Max 500mA (plus load of semiconductor outputs)
Input/Output Specifications	
Digital Inputs	Up to 18 single channel; up to 9 dual channel
Test Outputs	3
Safe Semiconductor Outputs	2 pairs and 2 single channel
Safe Relay Outputs	2
Signaling Outputs	Up to 4
Switching Frequency (Max)	0.1 Hz
Overvoltage Protection	Category III
Operate Delay	Semiconductor inputs: 30ms Relay outputs: 50ms
Release Delay	Semiconductor inputs: 45ms Relay outputs: 65ms
Nominal Output Voltage	24VDC

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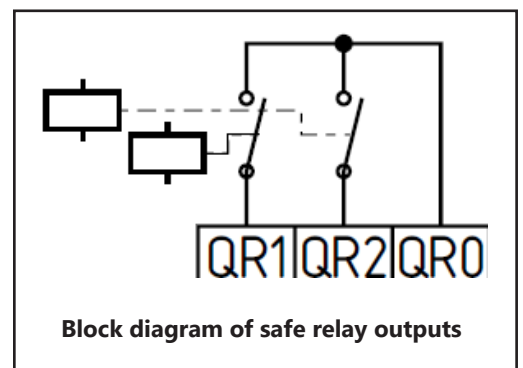


Terminal Descriptions		
Voltage	A1	+24VDC
	A2	0VDC
	FE	Functional ground connection
Inputs	I0 - I17	Safety digital inputs
Outputs	Q0, Q0N	Safe semiconductor output p/n switching
	Q1, Q1N	Safe semiconductor output p/n switching
	Q2	Safe semiconductor output p-switching
	Q3	Safe semiconductor output p-switching
	QR0	Supply of safe relay output
	QR1	Safe relay outputs
	QR2	Safe relay outputs
	Y0-Y3	Operational outputs (signalling output)
	T0-T2	Clock outputs for the supply of safe digital inputs for short-circuit recognition

## Connection and operating elements



- 1 Cycle outputs T0...T2
- 2 Safe inputs / optional signalling outputs
- 3 Safe inputs
- 4 Supply voltage
- 5 Graphic colour display
- 6 Status LEDs
- 7 Rocker switch
- 8 Safe semi-conductor outputs
- 9 Safe relay outputs
- 10 Safe analog inputs

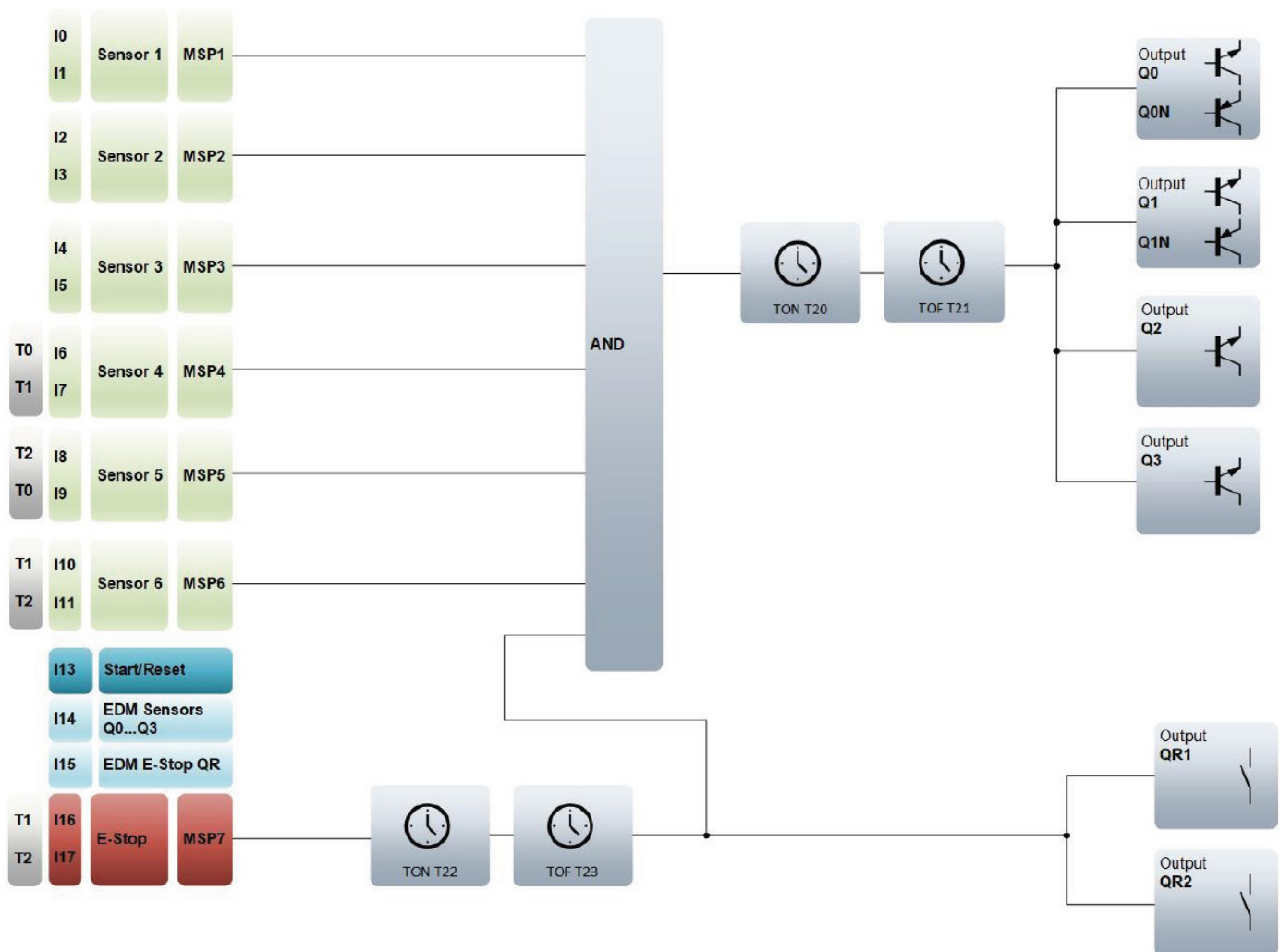


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## Program 1 Functional Diagram

Collector module for six configurable safety devices with global E-Stop functionality



### MSP = Multifunctional Sensor Processor

A parameter assigned by a 3-digit hexadecimal number. The first digit describes the sensor. The second digit describes the additional function, and the third digit describes the contact properties. For further information, refer to the manual.

### TON = Timer ON delay

Switching ON delay

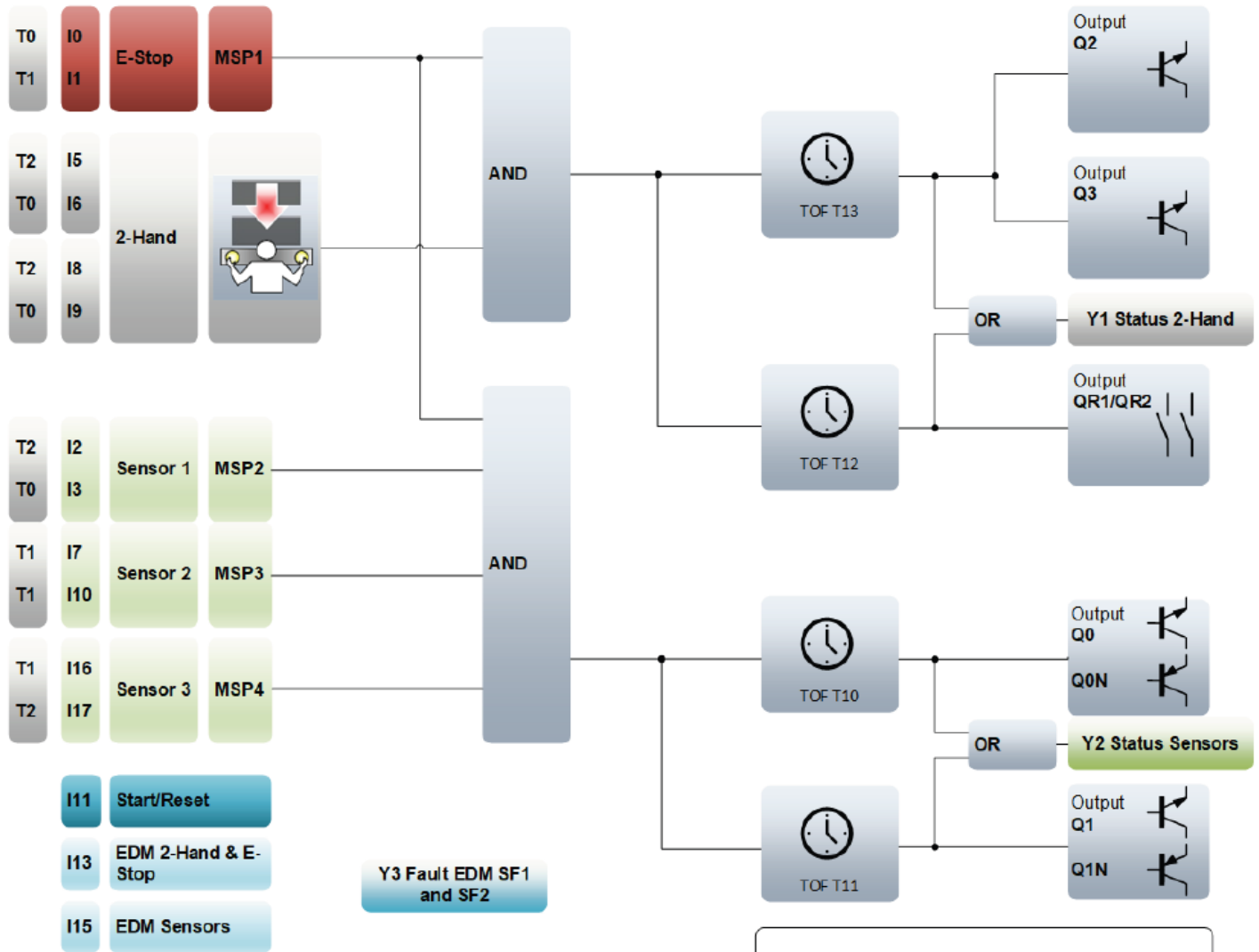
### TOF = Timer OFF delay

Switching OFF delay

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## Program 2 Functional Diagram



**MSP = Multifunctional Sensor Processor**

A parameter assigned by a 3-digit hexadecimal number. The first digit describes the sensor. The second digit describes the additional function, and the third digit describes the contact properties. For further information, refer to the manual.

**TON = Timer ON delay**

Switching ON delay

**TOF = Timer OFF delay**

Switching OFF delay

**OFF:** SF switched OFF      **Y1 Status 2-Hand**

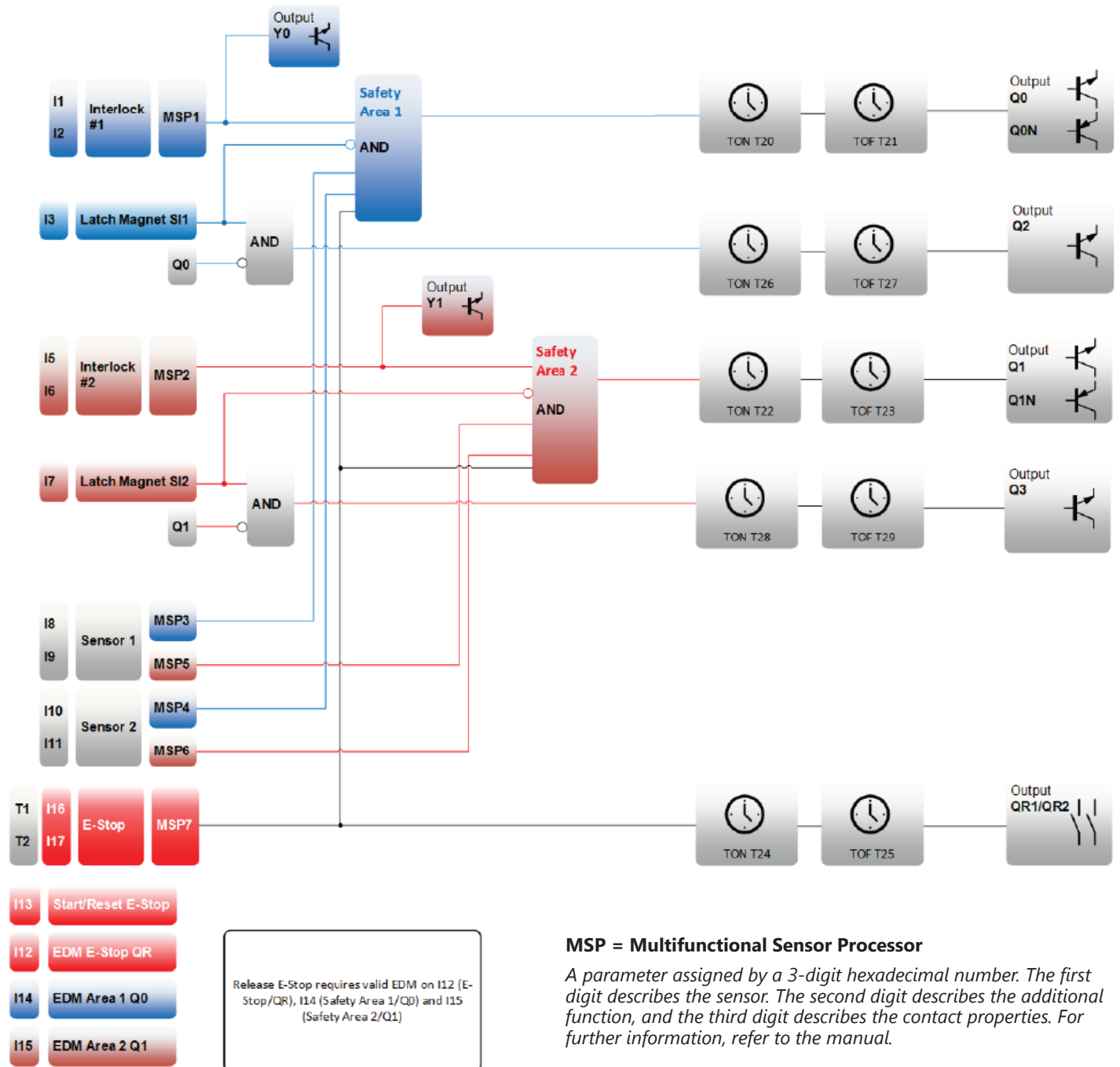
**Blinking:** Reset required      **Y2 Status Sensors**

**ON:** SF switched ON

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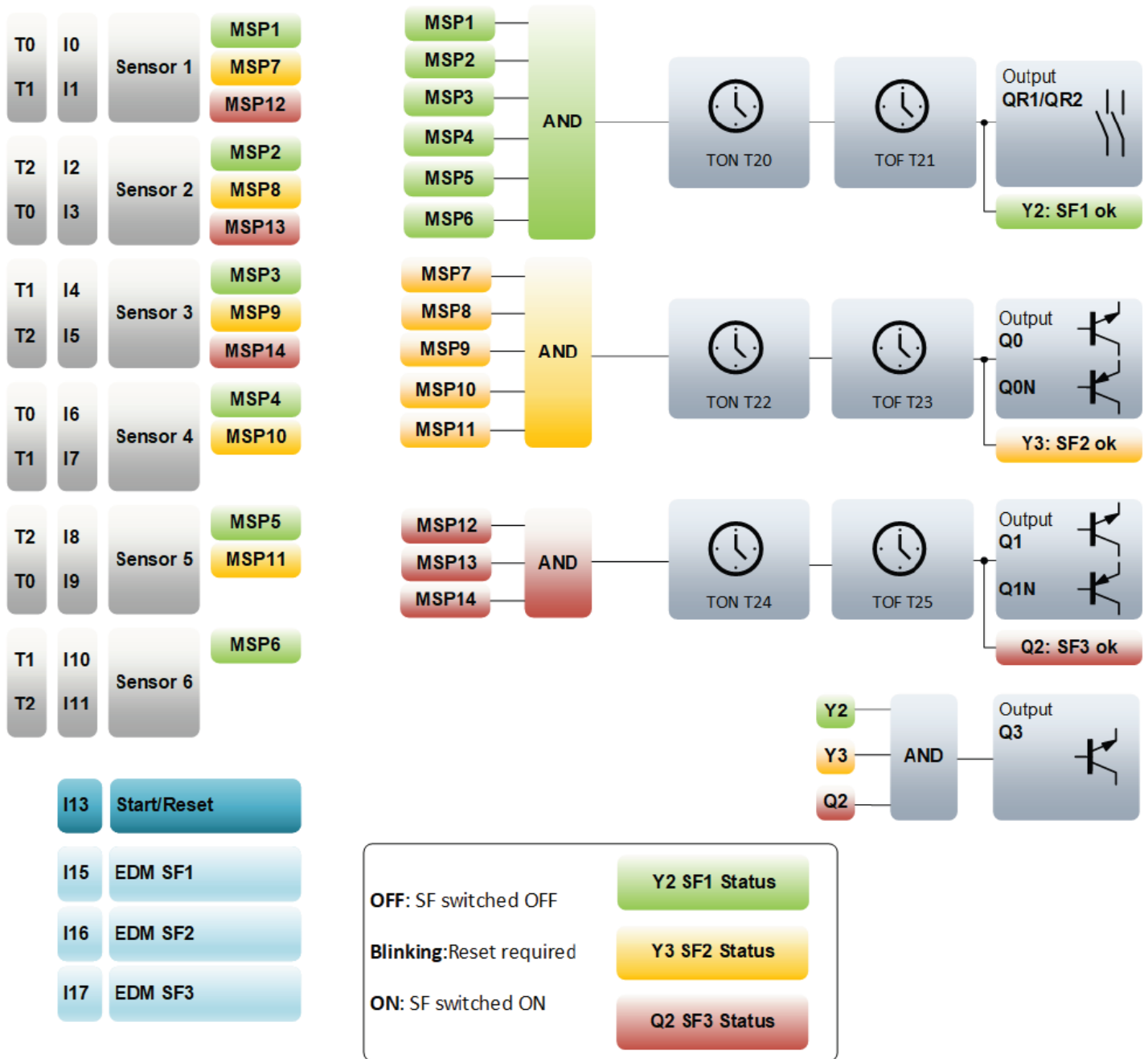
## Program 3 Functional Diagram



# Schmersal PROTECT SELECT Programmable Safety Relays



## Program 4 Functional Diagram



### MSP = Multifunctional Sensor Processor

A parameter assigned by a 3-digit hexadecimal number. The first digit describes the sensor. The second digit describes the additional function, and the third digit describes the contact properties. For further information, refer to the manual.

### TON = Timer ON delay

Switching ON delay

### TOF = Timer OFF delay

Switching OFF delay

# Safety Products



*Warning: Safety products sold by AutomationDirect are Safety components only. The purchaser/installer is solely responsible for the application of these components and ensuring all necessary steps have been taken to assure each application and use meets all performance and applicable safety requirements and/or local, national and/or international safety codes as required by the application. AutomationDirect cannot certify that our products, used solely or in conjunction with other AutomationDirect or other vendors' products, will assure safety for any application. Any person using or applying any products sold by AutomationDirect is responsible for learning the safety requirements for their individual application and applying them, and therefore assumes all risks, and accepts full and complete responsibility, for the selection and suitability of the product for their respective application.*

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