Logic
Modular Safety Relays
MSR245P

Description

The MSR245P is a display module for the modular Minotaur MSR200 family of monitoring safety relays. The MSR245P Display Module is interfaced to an MSR200 system through an MSR240P Communication Module, using the RS232 interface, with a two-core shielded cable. The display is refreshed approximately every six seconds.

Using the four-line LCD display and the three function key-switches, the configuration of external circuits, and the on-off status of all inputs of the system can be checked and interrogated.

The microprocessor, in the base module, scans all the inputs starting with the base module and working its way to the left. The first scanned input is "base module input 1." The last scanned input would be input two of the module furthest from the base module.

The display shows the lowest scanned input that de-energized the safety outputs (safety outputs open). After the lowest scanned input is cleared, the display will refresh and show the next input which is open. In this way, each open input circuit can be troubleshot and closed. When all inputs are closed, the user can scroll through the display.

The MSR245P requires 24V DC supply voltage. The power supply input as well as the RS232 are galvanically isolated from the MSR200 system, but can be connected non-isolated if required.

The messages in the MSR245 are capable of being customized with application specific text. The first three lines of the display can be changed to describe each of the inputs (3 x 20 characters). The text language can be selected and written in either English or German.

For programming, a PC running under Windows™ must be connected to the nine-pole sub-miniature D connector on the back of the MSR245 using a standard serial data interface cable.

The program allows the user to generate and transfer the text blocks into the nonvolatile memory of the MSR245.

The software for text programming and the manual is available for download on the Rockwell Automation safety website at *www.ab.com/safety*.

Features

- Recalls and displays system information
- Simple menu selection
- Stores details of last registered stop occurrence
- Clearly readable backlit display
- Back-lit four-line alphanumeric display
- RS232 interface

Specifications

Safety Ratings	
Standards	IEC/EN 60204-1, ISOTR 12100
Certifications	CE Marked for all applicable directives

Power Supply	
Input Power Entry	24V DC
Power Consumption	0.5 W

Environmental and Physical Characteristics	
Enclosure Type Rating/ Terminal Protection	IP40 (NEMA 1)/ IP20
Operating Temperature [C (F)]	-5…+55 ° (23…131 °)
Vibration	10…55 Hz, 0.35 mm
Shock	10 g, 16 ms, 100 shocks
Mounting	Panel or 35 mm DIN Rail (option)
Weight [g (lbs)]	210 (0.46)
Conductor Size, Max.	0.2…2.5 mm² (24…14 AWG)

Example Messages

Bold = standard text

Not Bold = text depending on function

System menu:

Manual/auto **reset**

Output active/deactivated

Monitoring active/device ready

EDM active/deactivated (feedback circuit)

Input configuration:

Input Module 4

MSR220 emergency off

Input 1: 2-channel

Input 2: 1-channel

Functions/Interruption messages:

Input Module 4

Input 2 causes interrupt

safety mats or cross-fault causes interrupt

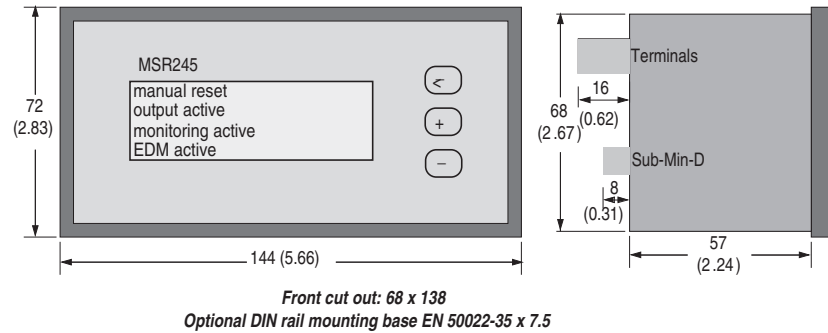transmission fault

fault EDM loop
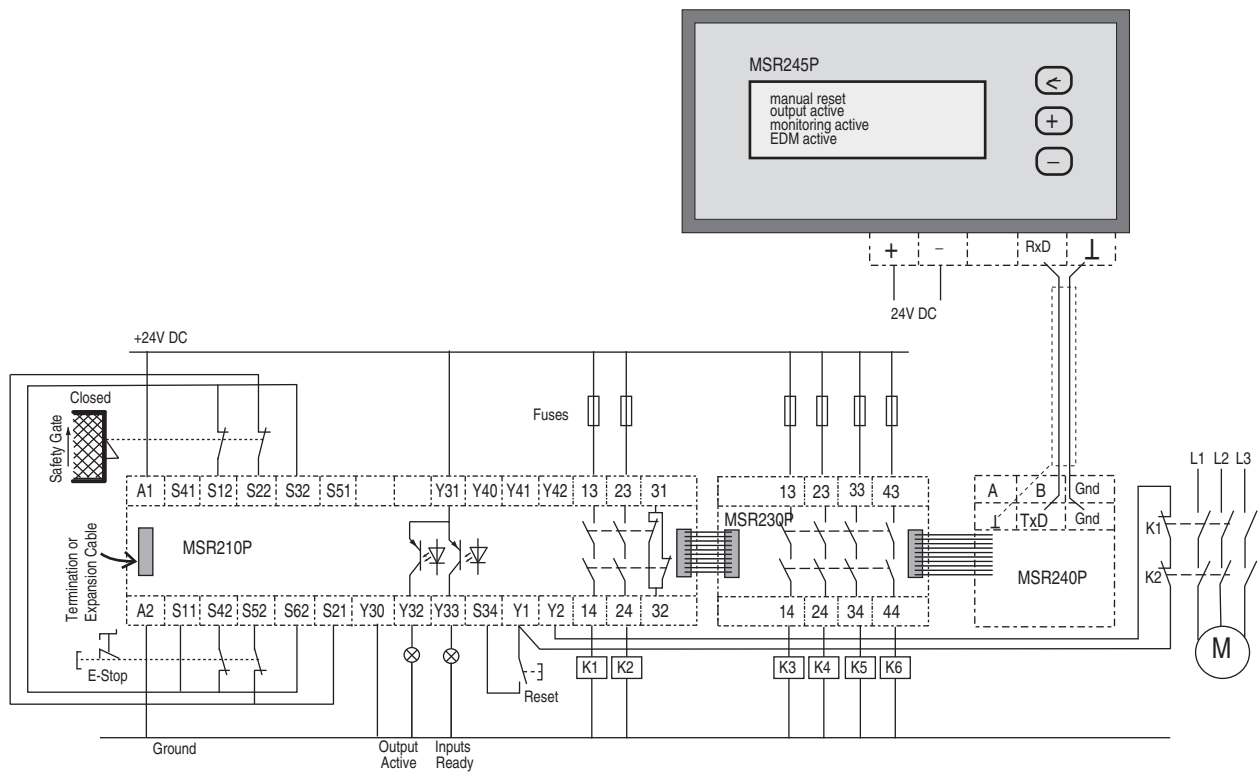
fault Y40 loop

malfunction

Output active/inactive

AB *Allen-Bradley*

Guard*master*®

Product Selection

Description	Cat. No.
Display module	440R-H23184
DIN Rail Base Adapter Kit	440R-H23185

Approximate Dimensions

Dimensions are shown in mm (in.). Dimensions are not intended to be used for installation purposes.

MSR245

manual reset
output active
monitoring active
EDM active

72
(2.83)

144 (5.66)

Terminals

Sub-Min-D

68
(2.67)

16
(0.62)

8
(0.31)

57
(2.24)

Front cut out: 68 x 138
Optional DIN rail mounting base EN 50022-35 x 7.5

Typical Wiring Diagrams

Input Module Selection

# of inputs \ Groups	Group 1	Group 2	Group 3
1 2	MSR320	MSR320	MSR320
3 4	MSR320	MSR320	MSR320
5 6	MSR320	MSR320	MSR320
7 8	MSR320	MSR320	MSR320
9 10	MSR320	MSR320	MSR320
11 12	MSR320	MSR320	MSR320
13 14	MSR320	MSR320	MSR320
15 16	MSR320	MSR320	MSR320
17 18	MSR320	MSR320	MSR320
19 20	MSR320	MSR320	MSR320

				<=10 modules
Example 1: Total System: MSR310/MSR312 +	1	2	3	<=10 modules
Example 2: Total System: MSR310/MSR312 +	2	1	4	<=10 modules

Note: If a muting module is required in the application, it counts as one of the ten input modules.

Visit our website: www.ab.com/catalogs
Publication S117-CA001A-EN-P

Allen-Bradley
Guardmaster®

Output Module Selection

Groups / # of outputs	Immediate Group 1	Immediate Group 2	Immediate Group 3	Delayed Group 1	Delayed Group 2	Delayed Group 3
1 2 3	W23221	W23222	W23223	W23224	W23225	W23226
4 5 6	W23221	W23222	W23223	W23224	W23225	W23226
7 8 9	W23221	W23222	W23223	W23224	W23225	W23226
10 11 12	W23221	W23222	W23223	W23224	W23225	W23226
13 14 15	W23221	W23222	W23223	W23224	W23225	W23226
16 17 18	W23221	W23222	W23223	W23224	W23225	W23226

	+	+	+	+	+	<=6 modules

							Total
Example 1: 2 Group 1 Immediate Outputs, 1 Group 2 Immediate Outputs, 2 Group 3 Immediate Outputs:	2	1	2	0	0	0	5
Example 2: 1 Group 1 Immediate Outputs, 2 Group 3 Immediate Outputs, 1 Group 1 Delayed Outputs:	1	0	2	1	0	0	4
Example 3: 1 Group 2 Immediate Outputs, 2 Group 3 Immediate Outputs, 3 Group 3 Delayed Outputs:	0	1	2	0	0	3	6

Total Modules

Allen-Bradley
Guardmaster®

Visit our website: www.ab.com/catalogs
Publication S117-CA001A-EN-P

5-101

5-Safety Relays