Overview

Hardware Features

Figure 1 - GLT Relay

The GLT is a **G**uard **L**ocking with **T**ime-delay safety relay. This safety relay is designed to use time-delayed outputs for use in Stop Category 1 and to unlock a safety gate when the time expires. It also provides a lock command to lock a safety gate before the starting of the hazard.

The GLT safety relay can be operated with other safety relays in the GSR family, by use of the single wire safety (SWS) connection. When GLT safety relay receives an SWS signal from other GSR relays, the GLT safety relay issues an Unlock command. When the GLT safety relay turns ON its safety output, it also turns ON its SWS output for use by other GSR safety relays.

Functions

The GLT safety relay can be configured to operate in one of two types of safety functions, both of which involve time-delayed safety signals.

Function 1 - Guard Locking

Function 1 is used for guard locking applications. During production, the safety gate is locked in the closed position by a guard locking interlock. To request access through the safety gate, the operator presses the Unlock Request button. The GLT safety relay initiates a stop and unlocks the safety gate after the time expires.

Specifications

General

Attribute	440R-GL2S2T
Dimensions, W x H x D	22.5 x 119.14 x 113.6 mm (0.88 x 4.69 x 4.47 in.)
Shipping Weight, approx.	150 g (0.33 lb)
Wire Size	0.2…2.5 mm^2 (24…14 AWG)
Wiring Category	Copper that withstands 75 °C (167 °F)
Terminal Screw Torque	0.4 N•m (4 lb•in)
Power Supply Voltage Range	24V DC PELV/SELV 0.85…1.1 x rated voltage
Power Consumption	2 W
Fuse	4 A gG (slow blow)
Case Material	Polyamide PA 6.6
Terminal Protection	IP20
Enclosure Protection	IP40 (NEMA 1)

Environmental

Attribute	440R-GL2S2T
Operating Temperature	-5…+55 °C (23…131 °F)
Relative Humidity	90%
Vibration	10…55 Hz, 0.35 mm
Shock	10 g, 16 ms
Pollution Level	2

Inputs IN1

Attribute	440R-GL2S2T
Input Signals (Active High)	S12, S22
Input Simultaneity	Infinite
ON Voltage, Max	26.4V
ON Voltage, Min	11V
OFF Voltage, Max	5V
OFF Current, Max	2 mA
ON Current at 24V DC, Max	11 mA
ON Current at 26.4V DC, Max	11.1 mA
Galvanic Isolation: I/O from Logic	No
Overvoltage Protection	Yes
Test Out Pulse Duration	700 µs
Test Out Pulse Period	17 ms
Off Pulse accepted for OSSD setting without declaring the input as OFF	Min = 0 µs Max = 700 µs
Reverse Voltage Protection	Yes
Input Capacitance	10 nF

Lock Unlock Request

Attribute	440R-GL2S2T
Input Signals (Active High)	S44, S54
ON Voltage, Max	26.4V
ON Voltage, Min	11V
OFF Voltage, Max	5V
OFF Current, Max	2 mA
ON Current at 24V DC, Max	11 mA
ON Current at 26.4V DC, Max	11.1 mA
Galvanic Isolation: I/O from Logic	No
Overvoltage Protection	Yes
Input Capacitance	10 nF
Duration	0.5…3.0 s

Retrigger

Attribute	440R-GL2S2T
Input Signal (Active High)	B2
ON Voltage, Max	26.4V
ON Voltage, Min	11V
OFF Voltage, Max	5V
OFF Current, Max	2 mA
ON Current at 24V DC, Max	11 mA
ON Current at 26.4V DC, Max	11.1 mA
Galvanic Isolation: I/O from Logic	No
Overvoltage Protection	Yes
Input Capacitance	10 nF

Outputs

Attribute	440R-GL2S2T
Number of Outputs	4
Output Signals (Active High)	S11, S21, 14, and 24
Continuous Output Current	0.5 A
Aggregate Current of Outputs per Module, Max	1.8 A
Surge Output Current, Max	1.5 A
Surge Output Current Duration, Max	5 ms
Residual Voltage (Drop from Power Supply), Max	0.2V
Max Load Capacitance	1 µF
Off State Leakage Current, Max	< 0.1 mA
Short Circuit Protection	Yes
Galvanic Isolation: I/O from Logic	No
Pulse Test Duration	≤700 µs
Pulse Test Period	≤13000 ms (less than 15 s)
Maximum Resistance for the Auto Detection of a Coil	10k
Maximum Resistance for the Auto Detection of an LL Device	10k

Lock Unlock Signals

Attribute	440R-GL2S2T
Output Signals	51 & L61
Continuous Output Current, Max	0.3 A
High Side Voltage, Max	26.4V
High Side Voltage, Min	15V
Low Side Voltage, Max	3V
Surge Output Current, Max	3 A
Surge Output Current Duration, Max	10 µs
Load Capacitance, Max	1 µF
Off State Leakage Current, Max	< 0.1 mA
Short Circuit Protection	Yes

Auxiliary Signal

Attribute	440R-GL2S2T
Output Signals	Y32
Continuous Output Current, Max	50 mA
ON State Voltage Drop (P/S to +), Max	0.2V
Surge Output Current, Max	700 mA
Surge Output Current Duration, Max	5 ms
Load Capacitance, Max	—
Off State Leakage Current, Max	< 0.1 mA
Short Circuit Detection	No
Short Circuit Protection	Yes
Galvanic Isolation: I/O from Logic	No

Single Wire Safety Input Signal

Attribute	440R-GL2S2T
Input Signals	L12
ON Voltage, Max	26.4V
ON Voltage, Min	11V
OFF Voltage, Max	5V
OFF Current, Max	2 mA
ON Current at 24V DC, Max	11 mA
ON Current at 26.4V DC, Max	11.1 mA
Galvanic Isolation: I/O from Logic	No
Overvoltage Protection	Yes
Reverse Voltage Protection	Yes
Input Capacitance	10 nF