

ProgramaCube® KRPD Series Dual Function Time Delay Relay

3



US Patent 6708135



- Choose 1 of 12 Standard Dual Functions
- Special Time Ranges and Functions Available
- Factory Programmed
- Microcontroller Circuitry, +/-0.5% Repeat Accuracy
- Isolated 10 A SPDT Output Contacts
- Input Voltage from 12 ... 240 V in 2 Ranges
- Delays from 100 ms ... 1000 h in 9 Ranges

Approvals:

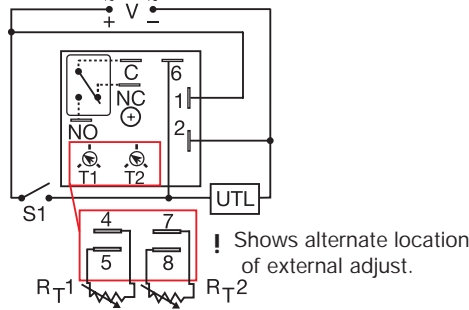
Accessories

- A** External adjust potentiometer
P/Ns:
P1004-95 (fig A)
P1004-95-X (fig B)
- B** Versa-knob
P/N: P0700-7
- Female quick connect P/N:
P1015-64 (AWG 14/16)
- Quick connect to screw adaptor
P/N: P1015-18
- DIN rail P/Ns:
017322005 (Steel)
C103PM (Al)
- DIN rail adaptor
P/N: P1023-20
See accessory pages for specifications.

Description

The KRPD Series is a factory programmed time delay relay available with 1 of 12 standard dual functions. The time delays can be factory fixed, externally or onboard adjustable or a combination of fixed and adjustable. Modules are manufactured without the function assigned. When an order is received, the function software is added, making the modules complete. This approach provides fast delivery on all part numbers. The SPDT output relay contacts offer a full 10 A rating with complete isolation. Its microcontroller timing circuit provides excellent repeat accuracy and stability. Encapsulation protects against shock, vibration, and humidity. The KRPD Series is a cost effective approach for OEM applications that require small size, isolation, accuracy, and long life. Special time ranges and functions are available; contact Technical Assistance (see below) for more information.

Connection



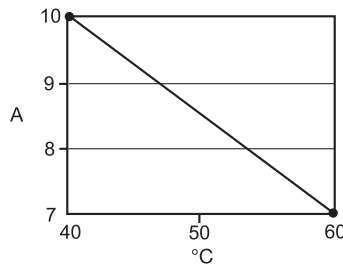
V = Voltage C = Common, Transfer Contact
NC = Normally Closed NO = Normally Open
S1 = Initiate Switch UTL = Untimed Load

A knob is supplied for adjustable units or R_T terminals for external adjust. The untimed load is optional. S1 is not used for some functions. Dashed lines are internal connections.

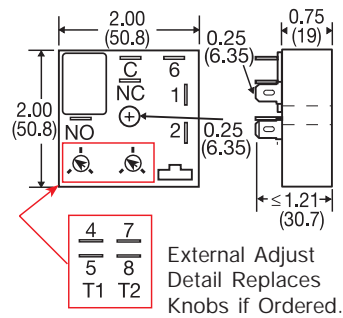
External Resistance vs Time Delay

For details on external R_T see the external resistance vs. time delay chart at beginning of this section.

Output Current/Ambient Temperature



Mechanical View



Inches (Millimeters)

**Function Chart

Function	Code
Delay On Make/Delay on Break	MB
Delay On Make/Recycle (ON Time First, Equal Times)	MRE
Delay On Make/Interval	MI
Delay On Make/Single Shot	MS
Interval/Recycle (ON Time First, Equal Times)	IRE
Delay On Break/Recycle (ON Time First, Equal Times)	BRE
Single Shot/Recycle (ON Time First, Equal Times)	SRE
Recycle (Both Times Adjustable, ON Time First)	RXE
Recycle (Both Times Adjustable, OFF Time First)	RXD
Interval/Delay On Make	IM
Accumulative Delay On Make/Interval	AMI
Single Shot Lockout	SL

For a Complete List of Functions with Descriptions, See Timer Function Section.

KRPD Series	X Input
	-A - 24 ... 240 V AC/DC
	-D - 12 ... 48 V DC

X First Adjustment (T1 or R _{T1})	X First Time Delay*
-1 - Fixed	-1 - 0.1 ... 10 s
-2 - Onboard Adjust	-2 - 1 ... 100 s
-3 - External Adjust	-3 - 10 ... 1000 s
	-4 - 0.1 ... 10 m
	-5 - 1 ... 100 m
	-6 - 10 ... 1000 m
	-7 - 0.1 ... 10 h
	-8 - 1 ... 100 h
	-9 - 10 ... 1000 h

X Second Adjustment (T2 or R _{T2})	X Second Time Delay*
-1 - Fixed	-1 - 0.1 ... 10 s
-2 - Onboard Adjust	-2 - 1 ... 100 s
-3 - External Adjust	-3 - 10 ... 1000 s
	-4 - 0.1 ... 10 m
	-5 - 1 ... 100 m
	-6 - 10 ... 1000 m
	-7 - 0.1 ... 10 h
	-8 - 1 ... 100 h
	-9 - 10 ... 1000 h

X Function**
- Specify Function (Refer to Function Chart for Code)

*If Fixed Delay is selected, insert delay [0.1 ... 999] followed by (S) secs., (M) mins., or (H) hrs.

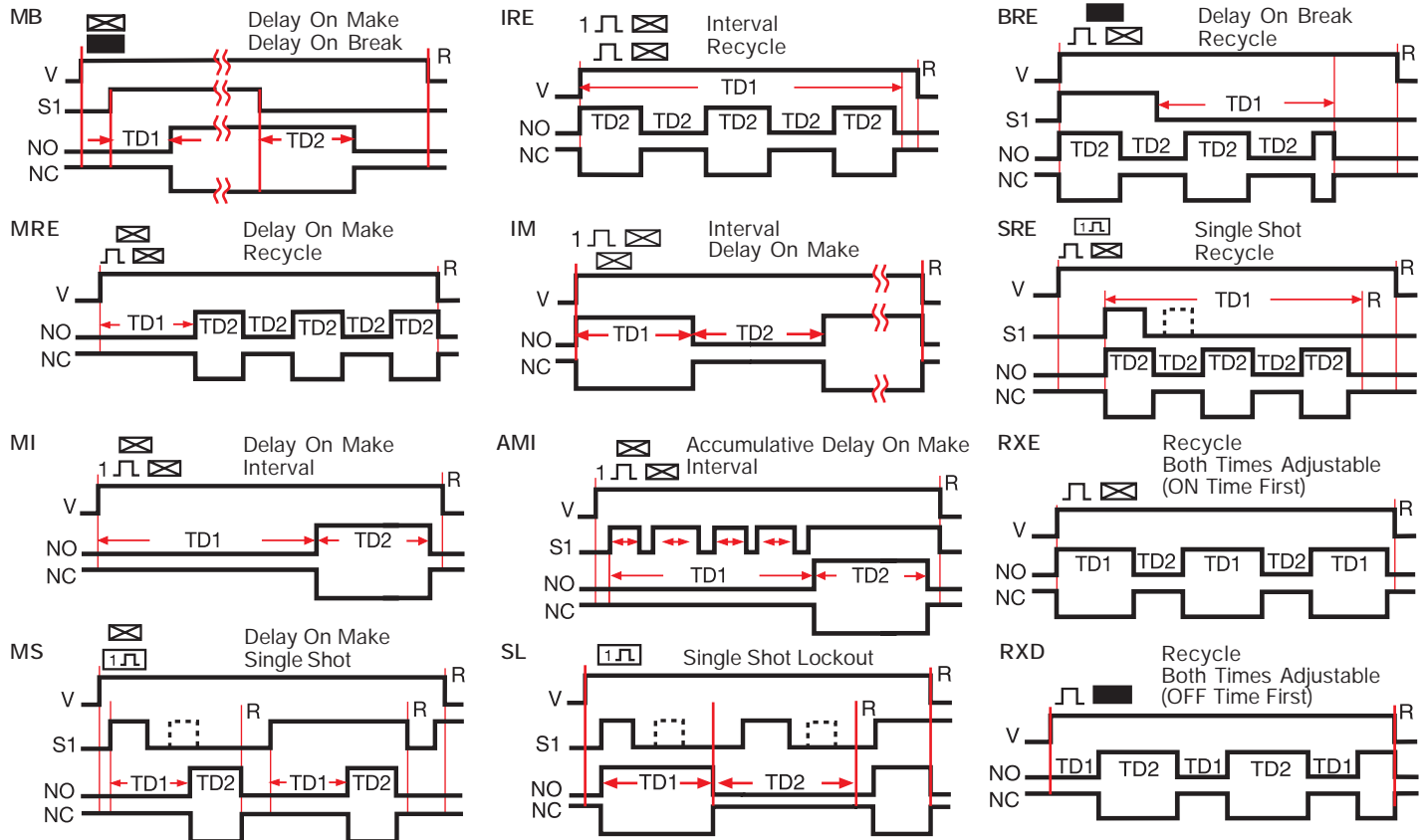
Example P/N: **KRPDA2525MRE** Fixed - **KRPDD10.5S110SMB**

ProgramaCube® KRPD Series Dual Function Time Delay Relay

Technical Data

Time Delay Type Range Repeat Accuracy Tolerance (Factory Calibration) Reset Time Initiate Time Time Delay vs Temp. & Voltage	Microcontroller circuitry 0.1 s ... 1000 h in 9 adjustable ranges or fixed (to 999) +/-0.5% or 20 ms, whichever is greater ≤ +/-2% ≤ 150 ms ≤ 40 ms; 750 operations per minute ≤ +/-2%	Protection Circuitry Isolation Voltage Insulation Resistance Polarity	Encapsulated ≥ 1500 V RMS input to output ≥ 100 MΩ DC units are reverse polarity protected
Input Voltage Tolerance AC Line Frequency/DC Ripple Power Consumption	12 ... 48 V DC; 24 ... 240 V AC/DC -15% ... +20% 24 ... 240 V AC/DC -20% ... +10% 50 ... 60 Hz/≤ 10% AC ≤ 2 VA; DC ≤ 2 W	Mechanical Mounting Package Termination	Surface mount with one #10 (M5 x 0.8) screw 2 x 2 x 1.21 in. (50.8 x 50.8 x 30.7 mm) 0.25 in. (6.35 mm) male quick connects
Output Type Form Rating (at 40°C) Max. Switching Voltage Life (Operations)	Isolated relay contacts Single pole double throw, SPDT 10 A resistive at 125 V AC 5 A resistive at 230 V AC & 28 V DC 1/4 hp at 125 V AC 250 V AC Mechanical - 1 x 10 ⁷ ; Electrical - 1 x 10 ⁵	Environmental Operating Temperature Storage Temperature Humidity Weight	-40°C ... +60°C -40°C ... +85°C 95% relative, non-condensing ≅ 2.6 oz (74 g)

Function Diagrams For a Complete List of Functions with Descriptions, See Timer Function Section.



Legend

V	Voltage	t	Incomplete Time Delay
R	Reset	NO	Normally Open
S1	Initiate Switch	NC	Normally Closed
TD1, TD2	Time Delay	—	Undefined time

Note: If S1 is closed when input voltage is applied, the function starts and the time delay begins. (MB, MS, BRE, SRE, AMI, SL)