



SSI STANDARD

DPR-4 HIGH SPEED DIVIDING PULSE RELAY

DESCRIPTION

The DPR-4 is a microcontroller-based high speed dividing pulse relay designed to provide two sets of isolated “dry” 2-wire Form A contacts (K & Y) from a field selectable 2-wire Form A pulse input which have been divided by a user-selected count number. The divider’s ratio of input pulses to output pulses may be set between 1 and 10,000. Selection of the desired division ratio is made by a setting a BCD rotary selection switch (0-9) and the appropriate multiplication jumper, either X10, X100 or X1000. The output may be configured as either toggle or pulse. In toggle mode, the output changes to the opposite state when the input preset count is reached. In pulse mode, a 100mS output pulse is generated when the preset count is reached. Pulse count is stored in non-volatile EEPROM memory so that any power failure will not lose the current pulse count. In the event that the divider ratio is low and pulse rate is high in the pulse output mode, the microcontroller will store up to 255 output pulses waiting to be output. This output pulse number is also stored in EEPROM memory, so that no pulses are lost.



The DPR-4 microcontroller checks the input pulse for valid timing, and counts the input pulses for division only when valid pulses occur, thus assuring a high degree of noise rejection. Bright red and green LED lamps indicate the input and output status, respectively, all times thus allowing a rapid visual check-out of the system’s performance without requiring any additional test equipment.

The input and output circuits’ terminal strip are “Euro” type connectors. The K leads of each of the DPR-4’s isolated outputs are fused to prevent damage to the relays under almost any condition a user might subject it to such as excessive current, voltage, or incorrect wiring. The DPR-4 provides a “pulled up” sense voltage of approximately +13 VDC on the Y and Z terminals of the input to the external sending contacts. The K terminal is system ground allowing the use of standard electro-mechanical, dry contact switches or solid-state open-collector transistor or MOS-FET pulse initiators. The DPR-4 has built-in MOV transient protection for the solid-state relay contacts that eliminates the need for external or off-the-board transient suppressors. All component parts of the DPR-4, which have power applied to them with the exception of the input/ output terminal strips and the divider switches, are enclosed in a polycarbonate cover for maximum user protection. The mounting base plate is also made of polycarbonate and offers excellent electrical insulation. Mounting tabs on the base plate allow the DPR-4 to be mounted in an appropriate enclosure for the application and the operating environment.

FUNCTIONAL SUMMARY

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TYPE

FORM

	IN	OUT
	1	2
	2 Wire	2 Wire
	A	A

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SPECIFICATIONS

ELECTRICAL

Power Input:	120,208-277 VAC; Burden:10 mA at 120 VAC
Pulse Input Voltage:	+13VDC "pulled-up" on Yin and Zin terminal. Common return is Kin terminal.
Pulse Output:	Two sets of dry Form "A" contacts (K & Y) for time or energy pulses. The contacts are solid-state relays rated at 250VAC/VDC @ 100 mA MAX. The maximum rating of the contacts is 800 mW. Factory fused at 1/10 amp. (3AG)
Contact Resistance:	25 ohms maximum, 18 ohms typical
Operate and Release Time:	5 milliseconds max. operate (turn-on) 5 milliseconds max. release (turn off)
Input/Output Isolation Voltage:	2500Vrms

MECHANICAL

Mounting:	Any position.
Size:	3.27" wide, 5.65" high, 1.50" deep
Weight:	12 ounces

TEMPERATURE

Temperature Range:	-38° C to +70° C, -36.4° F to +158° F
Humidity:	0 to 98% non-condensing

AVAILABLE OPTIONS

Input Voltages:	Contact Factory
Enclosure:	NEMA 3R or 4X

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