

DRY Contact Output Modules

DRY5 Series

DRY5, DRY12, DRY15, DRY24

Standard I/O

Overview

DRY5 Series Dry Output modules offer true DRY CONTACT switching of AC/DC large and small signals. Direct compatibility with industry standard I/O mounting racks and high reliability make this series ideal for harsh industrial control applications. The active-low input is directly compatible with open-collector driver circuits. Models for 5V operation are also compatible with TTL and CMOS logic.

The versatile DRY CONTACT output has zero OFF-state leakage current offering direct compatibility to control solid state input circuits. This series employs a HI-REL reed relay with excellent cycle life (100 million mechanical operations), low ON-state resistance, high power factor switching and can control large and small signals, eliminating the need for separate AC and DC module types. This series offers both FORM 1A (N.O.) and FORM 1B (N.C.) types which can pre-configured select I/O points for default power-down states. Standard models are normally open.

Available in 5V, 12V, 15V & 24V Logic Voltages.

Recommended Operating Parameters

SYMBOL	PARAMETER	LIMITS			UNIT	CONDITION
		MIN	TYP	MAX		
Vcc	Supply Voltage (DRY5) (DRY12) (DRY15) (DRY24)	2.75 9.5 12.0 20.0		5.25 14.0 18.0 28.0	Vdc	Pins 3 & 5 Pins 3 & 4 S4 Types
Icc	Supply Current		11	16	mAdc	
TA	Ambient Temp.	-40		+85	°C	Operating
Ion	Pick-up Time (operate)		0.5	1	mSEC	
toff	Dropout Time (release)		0.25	1	mSEC	
VIL	Input Logic Voltage Low		1.0	0.8	V	DRY5
VIH	Input Logic Voltage High	3.0	2.4		V	1 DRY5
RI	Insulation Resistance	10 ¹⁰				OHMS @ 20°C
IIL	Input Logic Low Current			-500	µA	DRY5, Notes 1,2

Notes:

1. Input logic low current specifications are for 5 pin models. Use 'supply current' for this parameter for four pin models (S4) suffix.
2. No Input High current is required. Unit may be driven from open-collector logic.

3. Internal relay coil is suppressed with clamping diode (not shown).
 4. "S4" models do not have pin 5.
 5. DRY5 Series are not suitable for use applications with high magnetic fields present. Use high current models.
- ** Refer to warranty section for limited warranty details.

I/O Compatibility

0.6" Standard I/O

Classic I/O types

70 types



M-DRY5 Types

M-DRY5, M-DRY12, M-DRY15, M-DRY24

SM-DRY5 Types

SM-DRY5, SM-DRY12, SM-DRY15, SM-DRY24

I/O Compatibility

M-Type I/O

SM-Type I/O

70M types



Product Features

- ▶ AC/DC Switching
- ▶ Fits Standard I/O Racks
- ▶ Operating Temp -40°C to +85°C
- ▶ 1 mS Switching Time (max)
- ▶ Black I/O Case
- ▶ High Reliability
- ▶ Captive #4-40 Screw (0.6" types)
- ▶ Encapsulated Design
- ▶ 3 Year Limited warranty**
- ▶ (N.O.) FORM 1A Standard
- ❖ (N.C.) FORM 1B (-B suffix)
- ❖ 4 pin version available (all types)

DRY5 Series

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M-DRY5 Types

M-DRY5, M-DRY12, M-DRY15, M-DRY24

SM-DRY5 Types

SM-DRY5, SM-DRY12, SM-DRY15, SM-DRY24

*Absolute Maximum Ratings

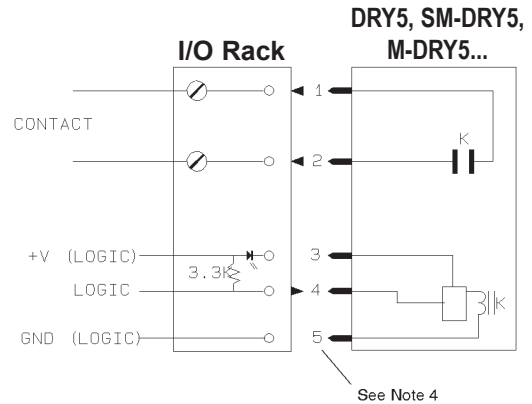
Supply Voltage (pins 3 & 5)	0 to Vcc (max)
Logic Input (pins 4 & 5)	-0.5V, Vcc + 5V
Ambient Operating Temperature	-40° to +85°C

*NOTE: STRESSES ABOVE THOSE LISTED UNDER ABSOLUTE MAXIMUM RATINGS MAY CAUSE PERMANENT DEVICE DAMAGE. OPERATION AT THESE RATINGS FOR EXTENDED PERIODS MAY AFFECT RELIABILITY.

Output Contact Ratings

PARAMETER	STANDARD FORM 1A	-B Option FORM 1B	UNITS
Switching Voltage	175/250	140/200	ac/dc Volts
Switching Current	1	0.5	Amps
Carry Current	2	1	Amps
VA Rating	20	10	VA
Initial Contact Resistance	0.15	0.15	Ohms

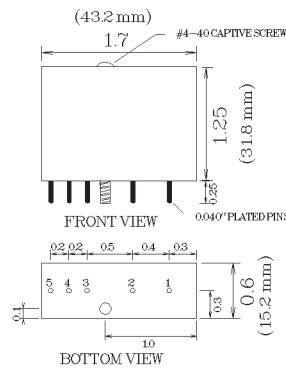
Connection Diagram



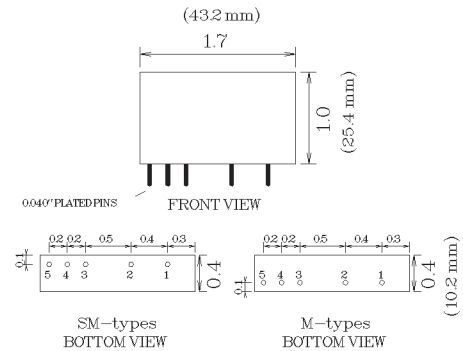
Operation

The **DRY5 Series** Dry Output Modules combine rugged industry standard I/O packaging with a high reliability reed relay contact. Operation of these units is logically identical to industry standard SSR output modules. When pin 4 is asserted low, the relay coil is energized (on-state). Standard models, with the exception of 4 pin "S4" types, include a current amplifier (control input is pin 4) which is compatible with standard logic families; 5 volt models can be controlled directly by TTL and CMOS logic. Upon receiving a low input signal, the current amplifier switches the full relay current through pins 3 & 5. An internal pull-up resistor is included thus making these units compatible with open-collector control signals. For four pin "S4" models, the relay coil is connected directly from pins 3 (+) and 4 (-) eliminating the need for the current amplifier. When pin 4 is NOT asserted low or no power is applied (off-state), the coil is de-energized; FORM 1A (N.O.) contacts are open and FORM 1B (N.C.) contacts are closed.

Dimensions

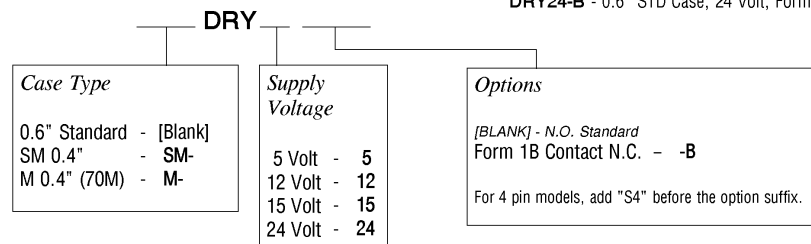


Units are in inches unless noted otherwise.



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Part Numbering



Examples:

- DRY5 - 0.6" STD Case, 5 Volt, 20VA Contact
- DRY12S4 - 0.6" STD Case, 12 Volt, 4 pin, 20VA
- DRY24-B - 0.6" STD Case, 24 Volt, Form B