

Watchdog Timer Modules

M-WDT5
SM-WDT5

Standard I/O

Overview

M-WDT5 and SM-WDT5 types are members of the **WDT5 Series** family of Watchdog Timer Modules offering a smaller module footprint. They are identical in function and use the same patented timing technology to monitor control system integrity. Packaging provides direct plug-in compatibility with “M” or “SM” Industry Standard I/O racks and sockets. Adjustable and Fixed timeouts are available (*standard timeout is 2 seconds*). (See *Dimensions for model-specific pin locations*).

Loss of Control caused by CPU latch-up, control system faults, as well as communications problems and power failures can be detected. A versatile DRY contact output de-energized upon “Loss of Control” which can be used for ALARM, SHUTDOWN or RESET.

M-WDT5 and SM-WDT5 type Watchdog Timer Modules monitor activity from the control system by detecting on/off transitions with an edge-triggered input. During normal operation, the internal timer is reset by control line activity and the DRY contact output remains energized. When control is lost, the timer times out and de-energizes the output contact, indicating “Loss of Control”.

I/O Compatibility

M-Type I/O

SM-Type I/O

70M types



Product Features

- ▶ System Fail-Safe*
- ▶ “Loss of Control” Detection
- ▶ Versatile DRY Contact Output
- ▶ Fits “M” or “SM” Standard I/O
- ▶ Blue I/O Case
- ▶ High Reliability
- ▶ Operating Temp -40°C to +85°C
- ▶ 3 Year Factory Warranty**
- ▶ Fully Encapsulated
- ▶ 1 Amp, 20VA Contact (Standard)
- ❖ Adjustable Time-out (Optional)

Recommended Operating Parameters

SYMBOL	PARAMETER	LIMITS			UNIT	CONDITION
		MIN	TYP	MAX		
Vcc	Supply Voltage	2.95		5.25	Vdc	Pins 3 & 5
Icc	Supply Current		12	15	mAdc	K1 Energized
TA	Ambient Temp.	-40		+85	°C	Operating
fmax	RESET (WDI) Toggle Frequency	1/timeout		50	KHz	
Tin	RESET (WDI) Period	20		T	µSec	Edge to Edge
T	Standard Timeout	1.60	2	2.40	Sec	
V _{IL}	Input Logic Voltage Low		1.0	0.8	V	
V _{IH}	Input Logic Voltage High	3.0	2.4		V	
Ri	Insulation Resistance	10 ¹⁰			OHMS	@ 20°C

Note: No Logic High Input Current is required. Unit may driven from Open-Collector logic.

* Output relay de-energizes for all fault conditions.
** Refer to warranty section for limited warranty details.

***Absolute Maximum Ratings**

Supply Voltage (between pins 3 & 5).... See Vcc Max.
 RESET (WDI) Input (pins 4 & 5)..... ±40V
 Contact Ratings (pins 1 & 2)..... See Output Contact Ratings
 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.

Operation

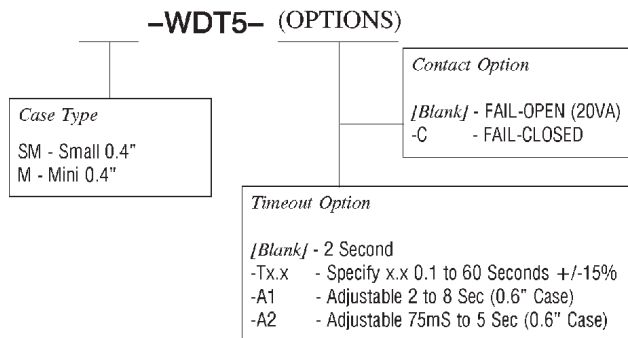
The WDT5 Series Watchdog Timer Modules are reset on negative-going edges of the WDI input (pin 4). Timeout occurs only when the WDI input does not detect a negative-going transition within the fixed timeout period. While the WDT5 is reset, K1 remains energized maintaining a closed DRY contact output (pins 1 & 2) on standard types (FAIL-OPEN). The "-C" option provides a FAIL-CLOSED output. Loss of control (WDI input latched high, low or open) or loss of power is indicated by the DRY Contact output, providing a very high level of control system integrity.

Output Contact Ratings

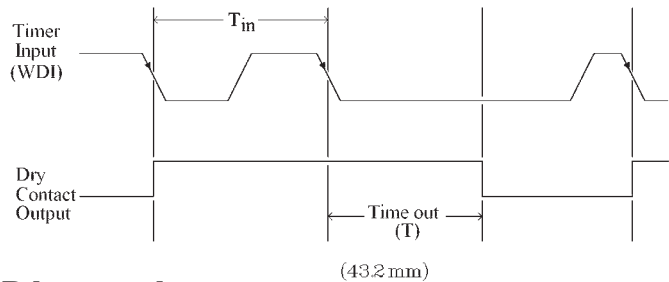
PARAMETER	STANDARD [FAIL-OPEN]	-C Option [FAIL-CLOSED]	UNITS
Switching Voltage	175/250	140/200	ac/dc Volts
Switching Current	1	0.5	Amps
Carry Current	2	1	Amps
VA Rating	20	10	VA
Initial Contact Resistance	0.15	0.15	Ohms

Note: Inductive loads should be suppressed to eliminate "inductive-kick" by using an appropriate method. (i.e. - MOV, diode, RC snubber, etc.) For application assistance, please contact Brentek International Technical Support. 1-800-BRENTEK.

Part Numbering

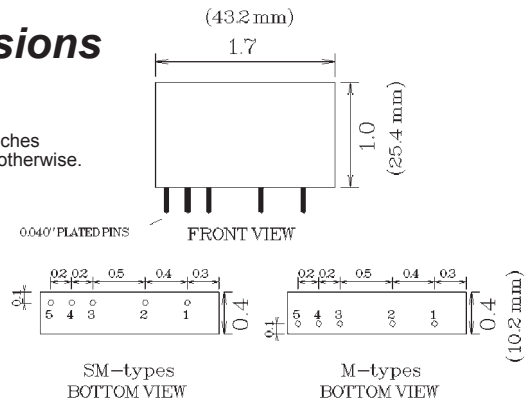


Timing Diagram

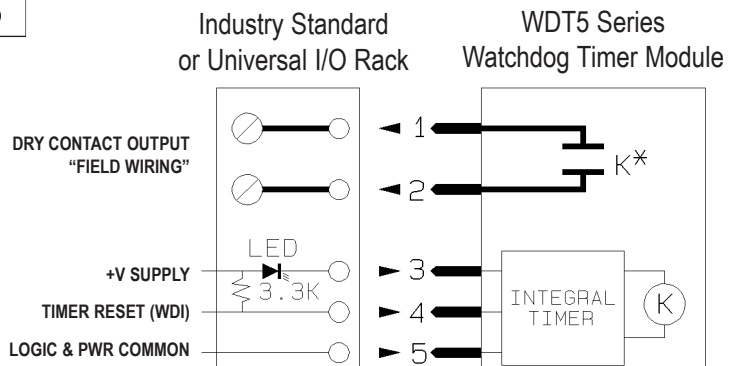


Dimensions

Units are in inches unless noted otherwise.



Connection Diagram



Example Part Numbers:

M-WDT5 [5V logic, FAIL-OPEN, 2 Seconds, fits "M" or "70M" type I/O]
SM-WDT5-C-T10 [5V logic, FAIL-CLOSED, 10 Seconds, fits "SM" type I/O]
M-WDT5-A1 [5V logic, FAIL-OPEN, Adjustable 2 to 8 Seconds, fits "M" or "70M" type I/O]