

# Watchdog Timer Modules

G-Type I/O

G-WDT5  
G-WDT12  
G-WDT15  
G-WDT24

## Overview

**G-Series** Watchdog Timer Modules use patented timing technology to monitor control system integrity. Packaging provides direct plug-in compatibility with Industry Standard I/O racks and sockets.

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.

**G-Series** 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".

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

## I/O Compatibility

G-Series  
'G4' types  
'C4' types  
'G5' types



## Product Features

- ▶ System Fail-Safe\*
- ▶ "Loss of Control" Detection
- ▶ DRY Contact Output
- ▶ Fits Standard "G4" I/O Racks
- ▶ Blue I/O Case
- ▶ High Reliability
- ▶ Captive #4-40 Screw
- ▶ LED Output Indicator
- ▶ Operating Temp -40°C to +85°C
- ▶ 3 Year Limited warranty\*\*
- ▶ Encapsulated Design
- ▶ 1 Amp, 20VA Contact (Standard)
- ❖ 5 Amp Contact (Optional)
- ❖ Adjustable Time-out (Optional)

## Recommended Operating Parameters

SYMBOL	PARAMETER	LIMITS			UNIT	CONDITION
		MIN	TYP	MAX		
Vcc	Supply Voltage (G-WDT5) (G-WDT12) (G-WDT15) (G-WDT24)	4.50 10.80 13.50 21.60		5.25 14.00 18.00 28.00	Vdc	Pins 3 & 5
Icc	Supply Current		12	18	mA <sub>dc</sub>	K1 Energized
TA	Ambient Temp.	-40		+85	°C	Operating
f <sub>max</sub>	RESET (WDI) Toggle Frequency	1/timeout		50	KHz	
T <sub>in</sub>	RESET (WDI) Period	20		T	µSec	Edge to Edge
T	Standard Timeout	1.60	2	2.40	Sec	G-WDT5
V <sub>IL</sub>	Input Logic Voltage Low		1.0	0.8	V	G-WDT5
V <sub>IH</sub>	Input Logic Voltage High	3.0	2.4		V	G-WDT5
R <sub>i</sub>	Insulation Resistance	10 <sup>10</sup>			OHMS	@ 20°C

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

### Notes:

1. No Logic High Input Current is required. Unit may driven from Open-Collector logic.
2. Available by special order, units may be factory configured with an internal Pull-Down resistor ("-PD" option) for use in sourcing logic applications, such as PLC's. Consult factory. See also PLC Compatible Watchdog Timer and Supervisory Modules in this catalog.

## Adjustable Types



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G-WDT24

# Watchdog Timer Modules

## \*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

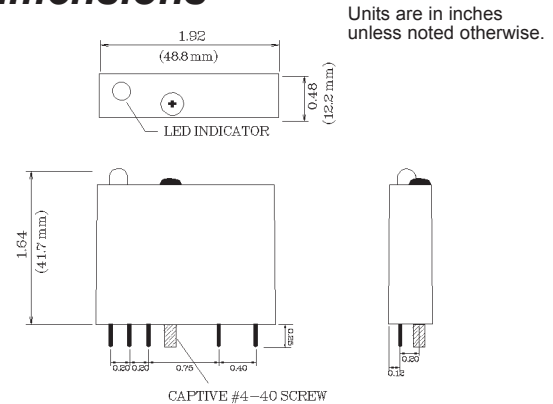
**\*NOTE:** STRESSES ABOVE THOSE LISTED UNDER ABSOLUTE MAXIMUM RATINGS MAY CAUSE PERMANENT DEVICE DAMAGE. OPERATION AT THESE RATINGS FOR EXTENDED PERIODS MAY AFFECT RELIABILITY.

## Output Contact Ratings

PARAMETER	STANDARD [FAIL-OPEN]	-C Option [FAIL-CLOSED]	-5A Option [FAIL-OPEN]	UNITS
Switching Voltage	175/250	140/200	250/30	ac/dc Volts
Switching Current	1	0.5	5	Amps
Carry Current	2	1	5	Amps
VA Rating	20	10	1250	VA
Initial Contact Resistance	0.15	0.15	0.03	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.

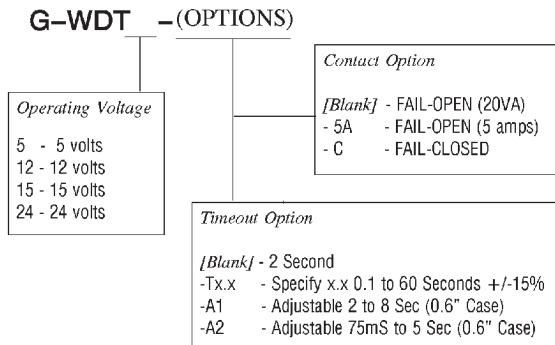
## Dimensions



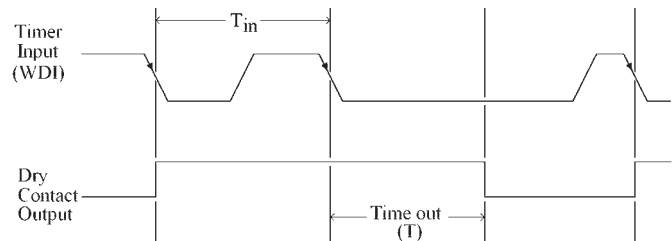
## Operation

The G-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 timeout period. While the module is reset, output relay K remains energized maintaining a closed DRY contact (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.

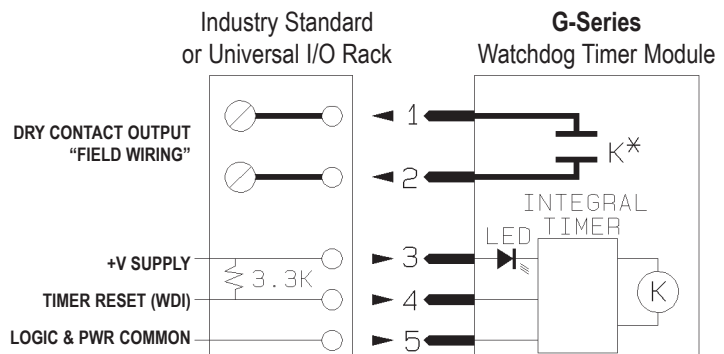
## Part Numbering



## Timing Diagram



## Connection Diagram



## Example Part Numbers:

G-WDT5 [5V logic, FAIL-OPEN, 2 Seconds]  
 G-WDT5-C-T10 [5V logic, FAIL-CLOSED, 10 Seconds]  
 G-WDT5-A1 [5V logic, FAIL-OPEN, 2-8 Seconds Adj.]  
 G-WDT24-5A [24V logic, FAIL-OPEN, 5 Amp, 2 Seconds]