

Watchdog Timer Modules

Gx2™-Series I/O

Gx2-WDT5
Gx2-WDT12
Gx2-WDT15
Gx2-WDT24

Overview

Gx2™ Watchdog Timer Modules use the same patented timing technology to monitor control system integrity as the G-Series, but with additional contact configurations, such as FORM 1C, 2A, 2B, 1A/1B (refer to **Connection Diagram**). Packaging provides direct plug-in compatibility for **Brentek's** single DIN socked (p/n DIN-102R) or in all **Brentek** I/O Racks (Universal and High-density HDX™ types). Timeouts are available ranging from 0.1 seconds to 60 seconds fixed or in adjustable range models

Gx2™ Watchdog Timers monitor activity from the control system by detecting off/on transitions with an edge-triggered input. While the internal timer is reset by control line activity, the DRY Contact Outputs are energized. Upon timeout, output contacts de-energize, indicating "loss of control".

Loss of Control caused by CPU failure, control system faults and loss of power are detected. The DRY contact outputs can be used to ALARM, SHUTDOWN or RESET a system or process. Other applications may include switching communications, control signals, audio, etc.

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

Recommended Operating Parameters

SYMBOL	PARAMETER	LIMITS			UNIT	CONDITION
		MIN	TYP	MAX		
Vcc	Supply Voltage (Gx2-WDT5) (Gx2-WDT12) (Gx2-WDT15) (Gx2-WDT24)	4.5 10.8 13.5 21.6		5.25 14.0 18.0 28.0	Vdc	Pins 3 & 5
Icc	Supply Current		12	18	mAdc	Note 1
TA	Ambient Temp.	-40		+85	°C	Operating max.
f _{max}	RESET (WDI) Toggle Frequency	1/timeout		50	KHz	
T _{in}	RESET (WDI) Period	20		T	µSec	Edge to Edge
T	Standard Timeout	1.60	2	2.40	Sec	Gx2-WDT5
V _{IL}	Input Logic Voltage Low		1.0	0.8	V	Gx2-WDT5
V _{IH}	Input Logic Voltage High	3.0	2.4		V	Gx2-WDT5
R _i	Insulation Resistance	10 ¹⁰				OHMS @ 20°C

* Output relay de-energizes for all fault conditions.

** Refer to warranty section for limited warranty details.

I/O Compatibility

Gx2-Series



Product Features

- ▶ System Fail-Safe*
- ▶ "Loss of Control" Detection
- ▶ Multi DRY Contact Outputs
- ▶ 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
- ❖ Adjustable Time-out (Optional)

Notes:

1. Current is specified for each energized contact. Total maximum supply current for 2 FORM A and 2 FORM B types is 36mA and 100mA for models with -5A option.
2. No Logic High Input Current is required. Unit may driven from Open-Collector logic.
3. 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



Watchdog Timer Modules

*Absolute Maximum Ratings

Supply Voltage (between pins 3 & 5).... See Vcc Max.
 RESET (WDI) Input (pins 4 & 5)..... ± 40V
 Contact Ratings See Output Contact Ratings
 Ambient Operating Temperature -40 to +85°C

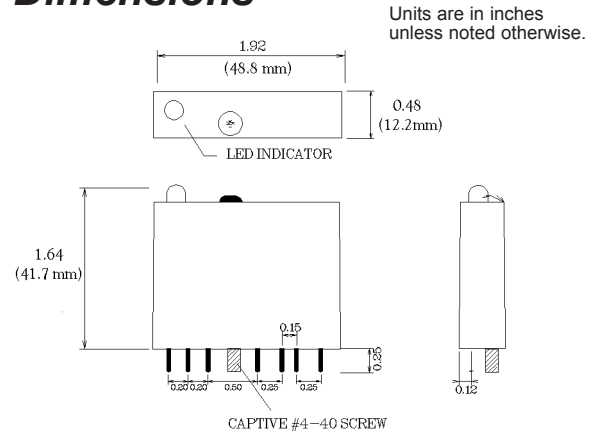
***NOTE:** STRESSES ABOVE THOSE LISTED UNDER ABSOLUTE MAXIMUM RATINGS MAY CAUSE PERMANENT DEVICE DAMAGE. OPERATION AT THESE RATINGS FOR EXTENDED PERIODS MAY AFFECT RELIABILITY.

Output Contact Ratings

PARAMETER	2 FORM A (-2A) [FAIL-OPEN]	FORM B & C [FAIL-CLOSED]	5Amp Option (-5A) [FAIL-OPEN]	UNIT
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.

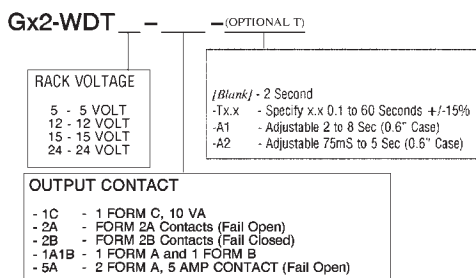
Dimensions



Operation

The Gx2 Watchdog Timer Modules are reset on the negative-going edge 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 Gx2-WDT5 is reset, the output relay remains energized. Loss of control (WDI input latched high, low or open) or loss of power, is indicated by the DRY Contact outputs thus providing a very high level of control system integrity.

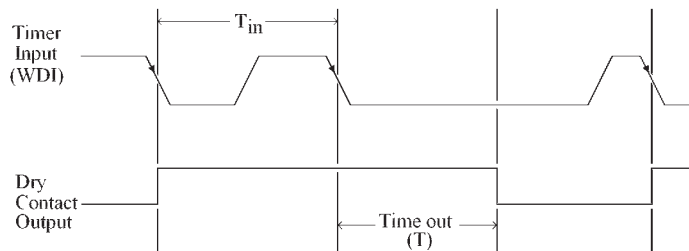
Part Numbering



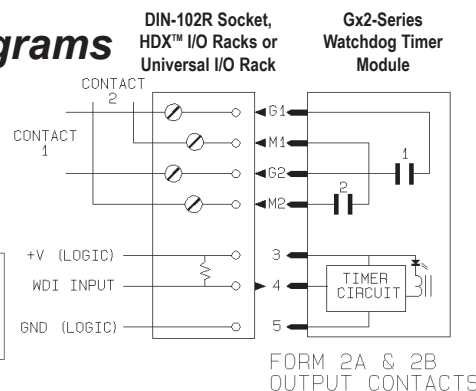
EXAMPLE(S):

Gx2-WDT5-2A [FAIL OPEN 2 FORM A, 2 SEC, 6V LOGIC]
 Gx2-WDT24-C-T8.0 [FORM C, 8 SEC, 24 VOLT LOGIC]

Timing Diagram



Connection Diagrams



NOTE: A maximum difference of potential between pins M1 & G2 is normally 30 volts for UL standard #508. If a common circuit feed is used, it is recommended that these pins be tied as common. Otherwise a 0.030" surface spacing requirement will apply.

