

# FR1020

## DC INPUT, FIELD RANGEABLE DUAL ALARM LATCHING OR NON-LATCHING

### FEATURES

- Allows Inputs to  $\pm 256$  V or  $\pm 100$  mA
- 16 mV or 0.8 mA Minimum Input Span
- Red and Green LED Alarm Status Indicators
- Adjustable Deadband
- Provides Relay Contact Closures at Preset DC Input
- Configure Alarms as HI/HI; HI/LO; LO/LO
- Alarms Normal or Reverse Acting
- Configure as Latching Alarm
- Fully Labeled Jumper Positions for Easy Range and Configuration Settings
- Choice of Power Options
- Size, Pinouts and Performance Identical to MM1020
- Permanent Warranty

### DESCRIPTION

The FR1020 monitors a DC input signal and provides two sets of SPDT, 5 A alarm relays with two independently adjustable setpoints. Each setpoint has a set of red/green LEDs to indicate alarm status. The configuration of each alarm relay is user-settable as follows:

**High or Low** - High selects alarm on an increasing signal. Low selects alarm on a decreasing signal.

**Normal or Reverse** - Normal position selects fail-safe operation (loss of

power will result in alarm condition). The relays are energized in the non-alarm condition. When the setpoints are exceeded, the relays de-energize. Selecting the reverse position reverses this logic.

**Deadband or Latching** - Deadband selects two independently adjustable deadband controls. Deadband for each alarm is adjustable from 0.1% to 100% of the input span. The deadband is symmetrical about the setpoint. With latching selected the alarms will latch

when a setpoint is exceeded, and can not be reset unless the input no longer exceeds a setpoint. Reset may be accomplished by remote contact closure or by momentary power interruption. (Several reset inputs may be tied to one reset contact, but note that all negative inputs will be tied together.) All Wilkerson products are designed with RFI filters and lightning protection to reduce susceptibility to electrical noise and damage by lightning.

### SPECIFICATIONS

#### INPUT

##### Limits

select any voltage between  
-256 and +256 VDC

select any current between  
-100 and +100 mA

##### Span (Selectable Ranges)

Voltage	Current
16-32 mV	.8-1.6 mA
32-64 mV	1.6-3.2 mA
64-128 mV	3.2-6.4 mA
128-256 mV	6.4-12.8 mA
256-512 mV	12.8-25 mA
.5-1 V	25-50 mA
1-2 V	50-100 mA
2-4 V	
4-8 V	
8-16 V	
16-32 V	
32-64 V	
64-128 V	
128-256 V	

#### INPUT OFFSET

$\pm 0, 25, 50, 75, 100\%$  of F.S.

#### INPUT IMPEDANCE

Voltage  
1 megohm  
Current  
20 ohms

#### SETPOINT

0 to 100% of span

#### DEADBAND

0.1% to 100% of span

#### LATCHING ALARM

Reset by remote contact closure  
or by momentary power  
interruption

#### RELAY CONTACTS

Two spdt  
Resistive Load  
5 A max, 150 W max,  
240 VAC max, 30 VDC max  
Inductive Load  
 $\frac{1}{8}$  HP max at 120/240 VAC

#### RESPONSE TIME

20 ms typical

#### ACCURACY

$\pm 0.1\%$  of span

#### COMMON MODE REJECTION

120 dB, DC to 60 Hz

#### OPERATING TEMPERATURE

14°F to 140°F/-10°C to 60°C

#### TEMPERATURE STABILITY

$\pm(0.02\%$  of span +30  $\mu$ V)/°C  
max

#### POWER

115 VAC  $\pm 10\%$ , 50 or 60 Hz  
(2.5 W max)  
230 VAC  $\pm 10\%$ , 50 or 60 Hz  
(2.5 W max)  
24 VAC  $\pm 10\%$ , 50 or 60 Hz  
(2.5 W max)  
115/230 VAC selectable  
(DC Power Option)  
24 VDC (limits 21-32 VDC)  
12 VDC (limits 10-16 VDC)  
(2.5 W max)  
Isolation, DC power supply to  
input common: 100 megohm

**ORDERING INFORMATION**

**POWER**

- 115 VAC, 50/60 Hz Power
- 230 VAC, 50/60 Hz Power
- 24 VAC, 50/60 Hz Power
- 24 VDC, Power, Transformer Isolated
- 12 VDC, Power, Transformer Isolated

**INPUT**

**Select Units**

- VDC  mADC

**Enter Input**

Zero Scale

Full Scale

**ALARMS**

**Alarm Type**

- High/Low
- High/High
- Low/Low

**Alarm Logic**

- Normal - De-energize On Alarm
- Reverse - Energize On Alarm

**Enter Setpoint Input Level**

Setpoint 1

Setpoint 2

**Latching Mode**

- Latching  Non-Latching

**OPTIONS**

- Conformal Coating

**TAGS**

**Specify Tag Numbers**

Tag number is typed on product label at no charge.

**Enter Tag Number(s)**

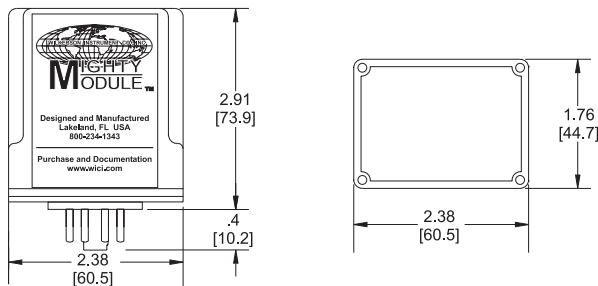
**ACCESSORIES**

**FR1020**

DR1	DIN-Rail, 35 mm Symmetrical, 39 inches (1 meter)	Qty_____
MP011	Plastic Socket, 11-Pin, fPanel Mount or PVC Snap Track	Qty_____
TRK48	PVC Snap-Track, 4 ft, for MP008, MP011, & DMP8500	Qty_____
DMP011	DIN-Rail Mounting Socket, 11-Pin, 35 mm Symmetrical Rail	Qty_____
CLP1	Holddown Assembly for MP008 and MP011	Qty_____
HKB-HK2D-11	Explosion-Proof Housing with MP011 Installed	Qty_____

**DIMENSIONS**

Inches [mm]



**CONNECTIONS**

- PIN 1 Power AC L1 or DC +
- PIN 2 Latch Reset
- PIN 3 Power AC L2 or DC -
- PIN 4 Input +
- PIN 5 Input -
- PIN 6 Relay Set 1 NO
- PIN 7 Relay Set 1 C
- PIN 8 Relay Set 1 NC
- PIN 9 Relay Set 2 NO
- PIN 10 Relay Set 2 C
- PIN 11 Relay Set 2 NC