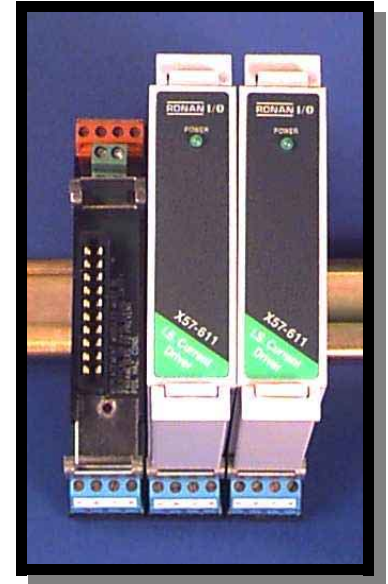# Basic Safety & Operational Specifications for Active Barriers

X57-611(S) Current Driver for Hazardous Area Load devices (solenoids, LED's, Horns, etc.)

- **For I.S. certified Load Devices or "Simple Apparatus"**
- **Plug-in Style - Simple Installation, Commissioning, and Maintenance**
- **Accepts Dry Contact, Transistor, or Voltage Input**
- **Optional Solid-State Switch Output (X57-611S)**
- **DIN Rail or Multi-barrier Surface mount Chassis Options**

DESCRIPTION: The Ronan Model X57-611 provides intrinsically safe voltage to a hazardous area which can be utilized for driving a variety of load devices. The hazardous area voltage is activated by a dry contact closure, an open collector transistor, a solid state switch, or a live voltage applied in the safe area. The module includes current limiting that prevents the fuse from blowing if the output terminals are shorted. The X57-611 is also available with an optional solid-state relay output to the hazardous area. The solid-state relay output is ideal for providing remote control signals to hazardous area devices. Typical uses would be to perform a remote reset on an I.S. counter or to provide dry contact type on/off control signal to I.S. devices that are self-powered or independently powered.

SPECIFICATIONS:

Type: active galvanic isolation
Chassis: plug-in single or multi-barrier chassis
Mounting: surface mount (single/multiple barrier) or single DIN rail mount
Wiring: all wiring and grounding connects to terminals on the chassis
Wire Size: up to #12 awg (1.5 mm^2)
Size: 3.6"H X 0.88"W X 4.75"D (without chassis) (91.44mm X 22.35mm X 120.65 mm)
Weight: 6 oz (168 gm) (without chassis)
Power Supply: 24 VDC (21 to 35 VDC)
Power Consumption: < 2.8 watts (output shorted) or Input power = Vin(Iload+.036mA)
Inputs: live voltage (+5 to +15 vdc), or open collector transistor (Vce >30 VDC; Ic > 10 mA), or dry contact or solid-state switch (rated 30 VDC@10 mA)
Outputs: Iout=26VDC/(Rload+320) [limited to about 40 mA]
Vout = 26 X Rload/(Rload+320)
LED power indicator
Solid-state Switch (X57-611S): Vmax = 250VDC or peak AC; Imax = 225 mADC or 450 mAAC
(switch capacity exceeds what is normal for IS applications)
Input/Output Isolation: 2500 Vrms
Response Time: 25 msec (0-99% of final value)
Maximum Switching Frequency: 20 Hz
Operating Temp.: -4°F to 131°F (-20ºC to +55ºC)
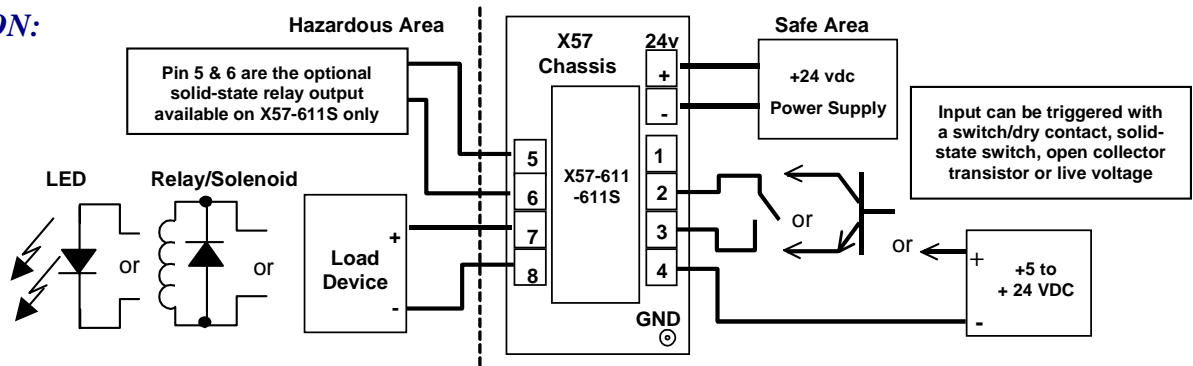**Storage Temp.:** -40°F to 176°F (-40ºC to +80ºC)

Specifications apply at 23 +/- 2•C (74 +/- 2•F) unless otherwise specified, and are subject to change without notice,

Note: Safety values for Output at pins 5 & 6 (X57-611S only) are shown in brackets ( )

SAFETY PARAMETERS:				Ca (µF)			La (mH)		
for pins 7 & 8 and (5 & 6)	Voc/ Vmax/Uz	Isc (mA)	Rmin (ohms)	Groups A/B	Groups C, E	Groups D,F,G	Groups A/B	Groups C, E	Groups D,F,G
FM	28.5 (0)	100 (0)		0.14(10K)	0.41(10K)	1.1(10K)	3.8(1K)	15.0(1K)	29.6(1K)
CSA	28 (0)	100 (0)	300(300)	0.13 (10K)	0.39(10K)	1.04(10K)	2.0(1K)	6.0(1K)	16.0(1K)
UL	Pending								
CENECLEC	Pending								

APPLICATION:

Hazardous Area

Pin 5 & 6 are the optional solid-state relay output available on X57-611S only

LED   Relay/Solenoid

or   or

Load Device + −

X57 Chassis

24v
+
−

X57-611 -611S

5
6
7
8

1
2
3
4

GND

Safe Area

+24 vdc Power Supply

Input can be triggered with a switch/dry contact, solid-state switch, open collector transistor or live voltage
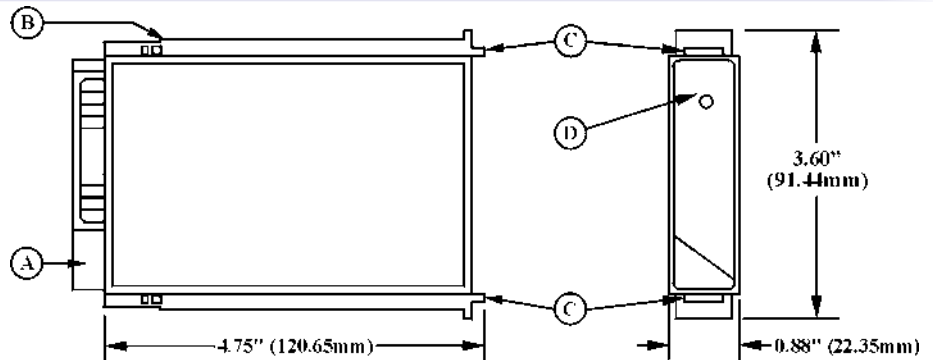
+5 to + 24 VDC
+ −

Important Note: I.S. ground is not required.

MECHANICAL DETAIL:

A = connector protection/ alignment shroud
B = chasses locking ears
C = quick release tabs
D = Power "ON" LED

3.60" (91.44mm)

4.75" (120.65mm)

0.88" (22.35mm)

ORDERING INFORMATION:

Barriers:

    X57-611 ....for hazardous area load devices classified as "Simple Apparatus"
                 or I.S. certified devices with proper entity numbers

Chassis Options:

    X57-PDIN-32 .... single barrier chassis for 32 mm "G" style DIN rails
    X57-PDIN-35.......... single barrier chassis for 35 mm "U" style DIN rails

    X57SM-1 .... single barrier surface mount chassis
    X57SM-1-3-4 .... single barrier surface mount chassis with optional ground bar and four ground clamps
    X57SM-4-(?)-(??)-(???) .... four (4) barrier surface mount chassis (gnd. bars & clamps optional)
    X57SM-10-(?)-(??)-(???) .... ten (10) barrier surface mount chassis (gnd. bars & clamps optional)
    X57SM-16-(?)-(??)-(???) .... sixteen barrier surface mount chassis (gnd. bars & clamps optional)
    X57SM-20-(?)-(??)-(???) .... twenty barrier surface mount chassis (gnd. bars & clamps optional)

? ➔   1= optional ground bar on safe side; 2= optional gnd. bar on haz. side; 3= gnd. bars on both sides; omit if not needed
?? ➔   Qty of gnd. clamps on safe side gnd bar. (max qty.= 16 for SM-4, 40 for SM-10, 64 for SM-16; 80 for SM-20) or omit
??? ➔   Qty of gnd. clamps on haz. side gnd bar. (max qty.= 16 for SM-4, 40 for SM-10, 64 for SM-16; 80 for SM-20) or omit

Accessories:

    X57-GC .... ground clamps
    X57-BLK .... blank panel for unused chassis position
    D1-32x15 .... 32 mm X 15mm "G" style DIN rail (order by the foot)
    D2-35x7.5 .... 35 mm X 7.5 mm "U" style DIN rail (order by the foot)

32 mm "G" Style

35 mm "U" Style