

SECTION 4



TIME DELAY RELAYS

5 TO 15 AMPERES



821

TDRPRO

TDRSOX

TDRSRX

211

222

388KNOB

388

388TRUE

67

246/247

831

235

236

PRODUCT



821

MANUFACTURED UNDER
ISO 9002



TDRPRO



TDRSOX / TDRSRX

MANUFACTURED UNDER
ISO 9002 QS 9000

L X W X H (INCHES)

3.54 x 0.692 x 2.56

1.87 x 1.87 x 2.86

2.63 x 1.40 x 1.73

FEATURES

- ✦ UNIVERSAL INPUT
- ✦ 10 TIMING FUNCTIONS
- ✦ WIDE TIME RANGE
- ✦ DIN MODULE

- ✦ 5 FUNCTIONS
- ✦ UNIVERSAL INPUT
- ✦ WIDE TIME RANGE
- ✦ THUMB WHEEL ADJUSTMENT

- ✦ WIDE TIME RANGE
- ✦ DUAL FUNCTIONS
- ✦ AC OR DC DUAL VOLTAGE
- ✦ FITS ALL STANDARD SOCKETS

TIMING		UNITS			
Functions Available:			10 (see product pages)	3 or 5(see product pages)	2-On delay/interval or Off delay/ Retriggerable One Shot
Time Scales:			10	7	8
Time Range:			0.1 second to 10 days	0.1 second to 9990 hours	0.1 second to 10 hours
INPUT					
Standard Voltages:	VAC 50/60Hz VDC		12 to 240 12 to 240	24 to 240 12 to 240	12,24,120, 240 12 to 120
Power Consumption:			3 VA / 1.7 W	2.5 VA / 2. W	5 VA / 2.5 W
Reverse Polarity Protection:			Yes	Non-polarity sensitive	Non-polarity sensitive
OUTPUT					
Contact Configuration:			SPDT	SPDT, DPDT	DPDT
Contact Rating AC Amperes (AC1):	VAC 50/60Hz		15 amps resistive @ 240	12 amps resistive @240	12 amps resistive @240
Contact Rating DC Amperes (DC1):	VDC		15 amps resistive @ 24	12 amps resistive @ 30	12 amps resistive @ 30
Contact Material:			Silver-Nickel 90/10	Silver alloy	Silver alloy
DIELECTRIC STRENGTH					
Across Open Contacts:	Vrms		1,000	1,000	1,000
Input to Contacts:	Vrms		2,500	2,500	2,500
Pole to Pole:			Not applicable	2,000	2,000
TEMPERATURE					
Operating, Lower:	°C		-20	-20	-20
Operating, Upper:	°C		+55	+55	+55
Storage, Lower:	°C		-30	-20	-20
Storage, Upper:	°C		+70	+85	+85
LIFE EXPECTANCY					
Electrical Full Load	operations		70,000	100,000	100,000
Mechanical @ no Load :	operations		10,000,000	10,000,000	10,000,000
MISCELLANEOUS					
Cover Protection Category:	IP		40	40	40
Weight:	grams		96	122	90

MATING SOCKETS

SEE SECTION 7

-

70-464-1, 70-465-1
750D8-1, 750D11-1

70-463-1, 70-464-1, 70-465-1
750D8-1, 750D11-1

AGENCY APPROVALS



PAGE NUMBER

PAGE 6, 7

PAGE 8, 9

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TIME DELAY RELAYS



211

MANUFACTURED UNDER
ISO 9002 QS 9000

1.75 x 2.37 x 3.5

- INDUSTRY STANDARD PACKAGE
- SINGLE FUNCTION
- HYBRID TECHNOLOGY
- UL LISTED



222

1.75 x 2.37 x 3.5

- INDUSTRY STANDARD PACKAGE
- SINGLE FUNCTION
- TWO KNOBS
- HYBRID TECHNOLOGY



388 KNOB
ADJUSTMENT

1.53 x 1.40 x 3.52

- INDUSTRY STANDARD PACKAGE
- SINGLE FUNCTION
- KNOB ADJUSTMENT
- ELECTROMECHANICAL OUTPUT

On delay, off delay, interval
or one shot

1
0.1 second to 120 minutes

Repeat cycle

1
0.1 seconds to 30 minutes

On delay, off delay

1
0.1 seconds to 180 minutes

See P/N chart

120

120

2.5 VA / 2 W

Yes

2.5 VA / 2 W

Yes

2.5 VA / 2 W

Yes

DPDT

10 amps resistive @ 240
10 amps resistive @ 30
Silver alloy

DPDT

10 amps resistive @ 240
10 amps resistive @ 30
Silver alloy

DPDT

12 amps resistive @ 240
12 amps resistive @ 28
Silver alloy

1,000

2,500

2,000

1,000

2,500

2,000

1,000

2,000

2,000

-20

+55

-40

+85

-20

+55

-40

+85

-20

+55

-40

+85

100,000

10,000,000

100,000

10,000,000

100,000

5,000,000

40

115

40

130

40

96

70-464-1, 70-465-1
750D8-1, 750D11-1

70-464-1, 750D8-1

70-463-1

UL US
UL Recognized
File No. E43641



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UL Recognized
File No. E43641



PAGE 4

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

9/04

4...3

PRODUCT		388 EXTERNAL ADJUSTMENT		388 TRUE OFF DELAY		67	
							
L X W X H (INCHES)		1.40 x 1.53 x 1.90		1.53 x 1.40 x 3.52		1.37 x 0.734 x 1.18	
FEATURES		- INDUSTRY STANDARD PACKAGE - SINGLE FUNCTION - EXTERNAL ADJUSTMENT - ELECTROMECHANICAL OUTPUT NEW REMOTE ADJUST TDRSOXB ALSO AVAILABLE		- TRUE OFF - ELECTRONIC TIMING - KNOB ADJUSTMENT - ELECTROMECHANICAL OUTPUT		- COMPACT - RECESSED POTENTIOMER	
TIMING	UNITS	On delay, off delay		True off delay		On delay	
Functions Available:							
Time Scales:		1		1		1	
Time Range:		0.1 to 120 Seconds		0.1 to 60 Seconds		0.1 to 30 Seconds	
INPUT							
Standard Voltages:	VAC 50/60Hz VDC	120 24		120 24		12, 24	
Power Consumption:		2.5 VA / 2 W		1.5 VA / 1 W		1.1 W	
Reverse Polarity Protection:		Yes		Yes		Yes	
OUTPUT							
Contact Configuration:		DPDT		DPDT		DPDT	
Contact Rating AC Amperes (AC1):	VAC 50/60Hz VDC	12 amps resistive @ 240		12 amps resistive @ 240		5 amps resistive @ 120	
Contact Rating DC Amperes (DC1):		12 amps resistive @ 28		12 amps resistive @ 28		5 amps resistive @ 28	
Contact Material:		Silver alloy		Silver alloy		Silver alloy	
DIELECTRIC STRENGTH							
Across Open Contacts:	Vrms	1,000		1,000		500	
Input to Contacts:	Vrms	2,000		2,000		1,500	
Pole to Pole:		2,000		2,000		1,500	
TEMPERATURE							
Operating, Lower:	°C	-20		-20		-20	
Operating, Upper:	°C	+55		+55		+55	
Storage, Lower:	°C	-40		-40		-40	
Storage, Upper:	°C	+85		+85		+85	
LIFE EXPECTANCY							
Electrical Full Load	operations	100,000		100,000		50,000	
Mechanical @ no Load :	operations	5,000,000		5,000,000		5,000,000	
MISCELLANEOUS							
Cover Protection Category:	IP	40		40		40	
Weight:	grams	85		96		35	

MATING SOCKETS		70-463-1		70-463-1		70-307-1, 70-308-1	
SEE SECTION 7							
AGENCY APPROVALS		  		  		  	
PAGE NUMBER		PAGE 15		PAGE 16		PAGE 17	

TIME DELAY RELAYS

246 & 247



2.62 x 1.46 x 4.06

- ✦ INDUSTRIAL
- ✦ VERSATILE DESIGN
- ✦ BLOWOUT MAGNET AVAILABLE
- ✦ LONG OPTION LIST

831 VOLTAGE SENSOR



MANUFACTURED UNDER ISO 9002

3.54 x 0.692 x 2.56

- ✦ INDEPENDENT UPPER AND LOWER LIMITS
- ✦ TIME DELAY
- ✦ TWO LEDS
- ✦ DIN MODULE

236 VOLTAGE SENSOR



MANUFACTURED UNDER ISO 9002 QS 9000

SEE PAGE 26

- ✦ INDEPENDENT PICK UP AND DROP OUT ADJUSTMENT
- ✦ ELECTROMECHANICAL OUTPUT
- ✦ SOCKET COMPATIBLE

235 CURRENT SENSOR



1.53 x 1.40 x 3.52

- ✦ WIDE SENSE RANGE
- ✦ SOCKET COMPATIBLE
- ✦ KNOB ADJUSTMENT

On delay or off delay

1
0.1 to 300 seconds

Voltage sensor

1
0.1 to 10 seconds

Voltage sensor

1
Optional on PX

Current sensor

1

See ordering code

Normal sense
Voltage 120

24, 120, 240, 480
24

120

5 VA / 2.5 W

1.2 VA

3.5 VA / W

2 VA

Yes

Yes

Yes

Yes

DPDT, 3PDT 4PDT AND OTHERS

10 amps resistive @ 120

10 amps resistive @ 28

Silver alloy

SPDT

15 amps resistive @ 240

15 amps resistive @ 24

Silver-Nickel 90/10

PX=DPDT, CX=SPDT

DPDT=10 amps @ 240

SPDT=13 amps @ 240

DPDT=10 amps @ 28

SPDT=13 amps @ 28

Silver Alloy

SPDT

10 amps @ 120

6 amps @ 28

Silver Alloy

1,500

1,500

1,500

1,000

2,500

Not applicable

1,000

2,500

2500

500

2,500

Not applicable

-20
AC:+45, DC: +70

-20

+85

-20

+55

-30

+70

-20

+55

-30

+85

-20

+55

-40

+85

100,000

10.000.000

70,000

10.000.000

100,000

DPDT= 10.000.000, SPDT= 5.000.000

200,000

5.000.000

40

227

40

60

40

DPDT: 156, SPDT: 125

40

113

27390D, 33377D

-

70-463-1, 70-464-1

70-463-1



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CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS



COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE

* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION

MANUFACTURED
UNDER
ISO 9002

FEATURES

UNIVERSAL VOLTAGE SUPPLY

10 TIMING FUNCTIONS

WIDE TIME RANGE

TWO STATUS LEDS

DIN MODULE

BENEFITS

ACCEPTS 12 TO 240 VAC / VDC

IDEAL FOR MOST APPLICATIONS

0.1 SECOND TO 10 DAYS

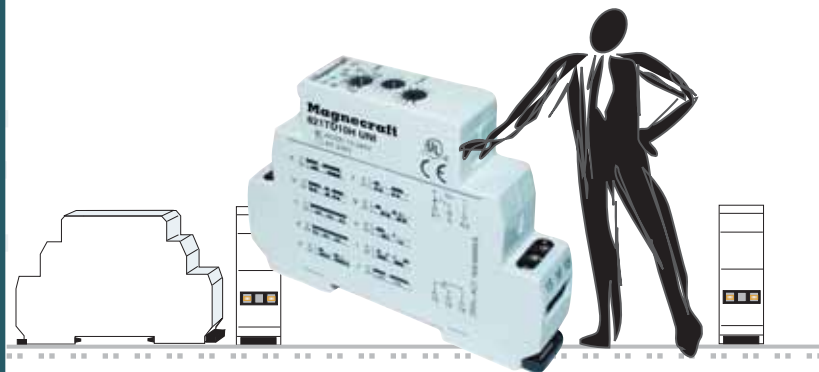
INDICATES STATUS AT A GLANCE

CLIP DIRECTLY TO 35 mm DIN RAIL

GENERAL SPECIFICATIONS (@ 25°C)

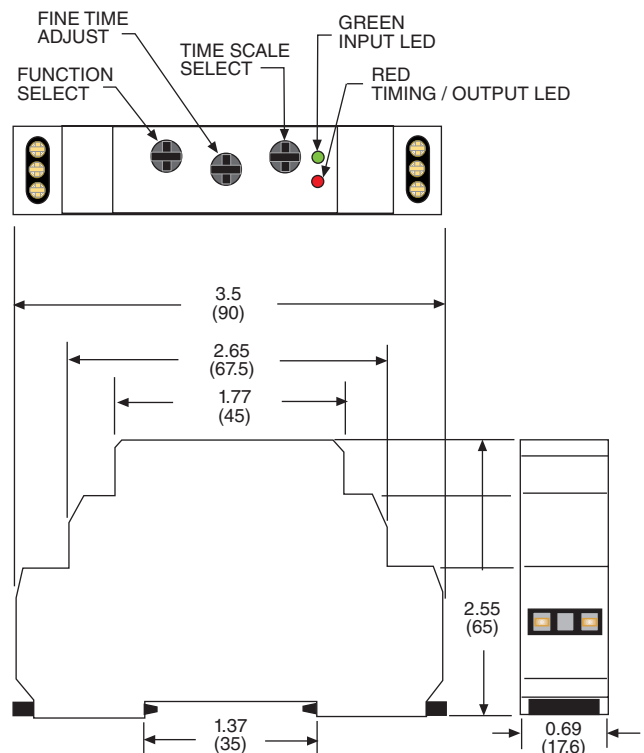
	UNITS	
TIMING		
Functions Available:		10 (see product pages)
Time Scales:		10
Time Range:		0.1 second to 10 hours
Timing Adjustment:		Potentiometer
Timing Deviation (mechanical setting):	%	+5
Timing Repeatability (Constant voltage and temperature):	%	0.2
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	AC /DC	12 to 240
Input Voltage Tolerance:	of nominal	-15%, +10%,
Power Consumption:	maximum	3 VA / 1.7 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		Green LED
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	15 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	15 amps resistive @ 24
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver-Nickel 90/10
Output Indication:		Red: LED: Blinks = timing On = energized
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,500
Pole to Pole:		Not applicable
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-30
Storage, Upper:	°C	+70
LIFE EXPECTANCY		
Electrical Full Load	operations	70,000
Mechanical @ no Load :	operations	10.000.000
MISCELLANEOUS		
Operating Position:		Any
Maximum Wire Size		2.5 mm (UL-14 gauge)
Cover Protection Category:	IP	40
Pollution Degree:		2
Terminals:		Captive screws
Weight:	grams	96

TYPE 821 IS A DIN RAIL MOUNTED PRODUCT OFFERING MULTIPLE TIMING FUNCTIONS, MULTIPLE TIME SCALES AND A UNIVERSAL VOLTAGE INPUT IN ONE PACKAGE.



OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



821 TIME DELAY RELAY



SPDT, 15 AMPS

WIRING DIAGRAM

TIMING SCALES

TEN DIFFERNT TIME SCALES FROM 0.1 SECOND TO 10 DAYS AND ALWAYS ON OR ALWAYS OFF

SECONDS	MINUTES	HOURS	DAYS	OTHER
0.1 TO 1	0.1 TO 1	0.1 TO 1	0.1 TO 1	ALWAYS ON
1 TO 10	1 TO 10	1 TO 10	1 TO 10	ALWAYS OFF

TIMING DIAGRAMS

U = INPUT VOLTAGE, R = RELAY OUTPUT, S = CONTROL SWITCH

A) On delay - Power on



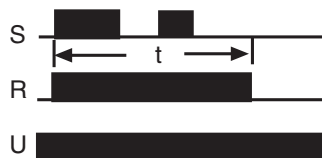
F) Off delay - S break



B) Interval - Power on



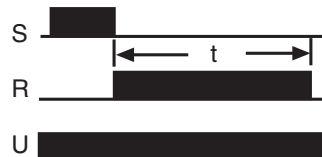
G) Interval - S make



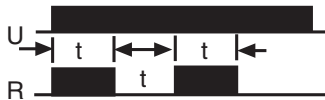
C) Repeat / Off first - Power on



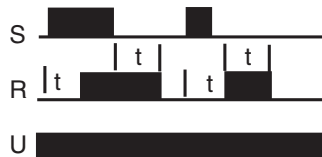
H) Interval - S break



D) Repeat / On first - Power on



I) On & Off delay - S make / break

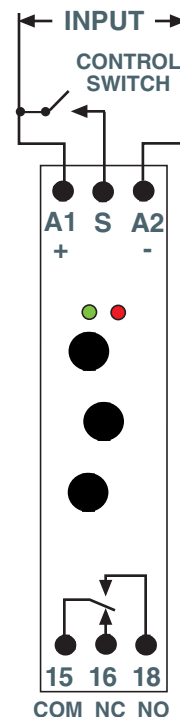


E) Pulse Generator - Power on



0.5 S PULSE

J) Memory Latch - S make



- CONTROL SWITCH IGNORED
FUNCTIONS "A" TO "E"

- CONTROL SWITCH REQUIRED
FUNCTIONS "F" TO "J"



STANDARD PART NUMBER

821TD10H - UNI

FEATURES

BENEFITS

UL
UL Recognized
File No. E43641

5 TIMING FUNCTIONS, TIMING RANGES FROM 0.1 SECONDS TO 9,990 HOURS, UNIVERSAL VOLTAGE INPUT AND 12 AMP OUTPUT FOR HIGHER POWER APPLICATIONS

UNIVERSAL POWER SUPPLY ALLOWS FOR INPUT VOLTAGES FROM 24 TO 240 VDC OR VAC 50/60HZ.

CLASS "F" INSULATION SYSTEM

THUMB WHEEL ADJUSTMENTS FOR FUNCTION AND TIMING

RED L.E.D. LAMP INDICATOR

0.1 % ACCURACY USING A CRYSTAL CLOCK

MOUNTING CLIP ALLOWS FOR VARIED PANEL THICKNESSES,

FIVE FUNCTIONS - ONE PACKAGE

ONE PART FOR MOST VOLTAGES

12 AMPS CONTACT RATING

POSITIVE POSITION THUMB WHEEL ADJUSTMENT

STATUS L.E.D.

ACCURATE TIME, ALL THE TIME

PANEL CLIP INCLUDED



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:	2-On delay/interval or off delay/ retriggerable one shot	
Time Scales:	7	
Time Range:	0.1 second to 9990 hours	
Timing Adjustment:	Thumbwheels	
Timing Deviation (mechanical setting):	%	None
Timing Repeatability (Constant voltage and temperature):	%	0.1
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	AC/DC	24 to 240
Input Voltage Tolerance:	of nominal	-15% , +15%,
Power Consumption:	maximum	2.5 VA / 2. W
Transient Protection:	Yes	
Reverse Polarity Protection:	Non-polarity sensitive	
Input Indication:	See output indication	
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive @ 30
Contact Rating Pilot Duty:	B300	
Minimum Load:	mW	500 mW
Contact Material:	Silver alloy	
Output Indication:	Red LED: blinks = timing On = energized	

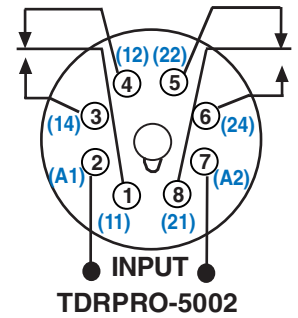
	UNITS	
DIELECTRIC STRENGTH		
Across Open Contacts:	Vrms	1,000
Input to Contacts:	Vrms	2,500
Pole to Pole:	Vrms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-20
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:	Any	
Cover Protection Category:	IP	40
Terminals:	TDRPRO-5000= 11pin octal TDRPRO-5001, 5002= 8 pin octal	
Weight:	grams	122

TDRPRO-5000 PROGRAMMABLE TIME DELAY RELAY

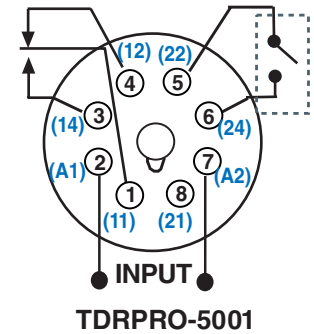


SPDT & DPDT, 12 AMPS

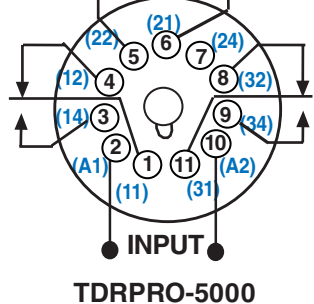
WIRING DIAGRAM (VIEWED FROM PIN END)



EXTERNAL CONTROL SWITCH



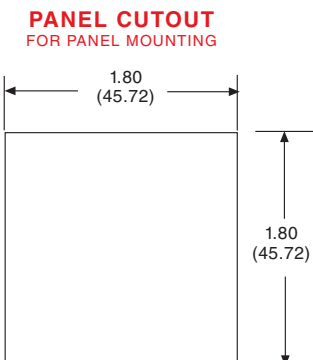
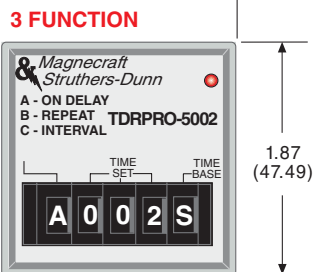
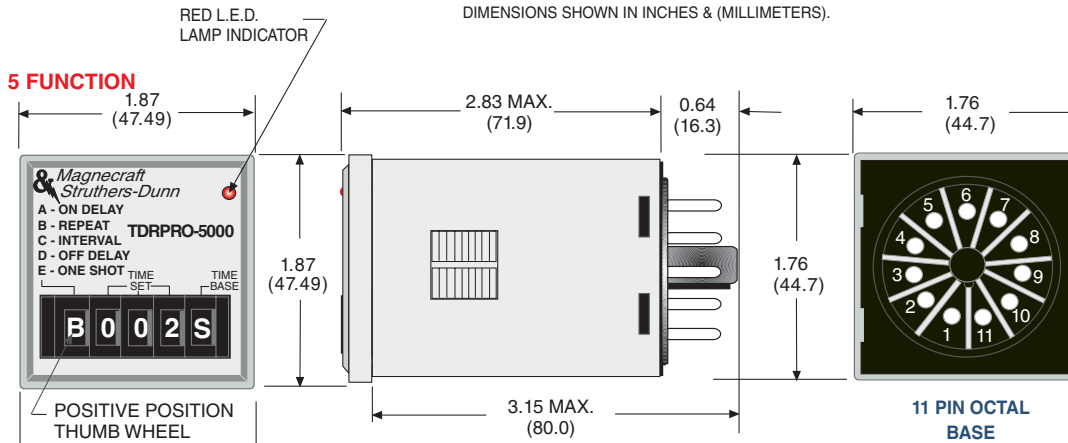
EXTERNAL CONTROL SWITCH



EXTERNAL SWITCH SHALL NOT BE CONNECTED TO ANY EXTERNAL LOAD OR VOLTAGE. DAMAGE TO INTERNAL COMPONENTS MAY OCCUR.

ALTERNATE NEMA OR IEC () NUMBERS VIEWED FROM PIN SIDE

OUTLINE DIMENSIONS DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



STANDARD PART NUMBERS	CONTACT CONFIGURATION	TIMING RANGE	MATING SOCKETS See section 7
5 FUNCTION - 11 PIN, 12 AMP			
TDRPRO-5000	DPDT	0.1 SECOND TO 9,990 HOURS	70-465-1 70-750D11-1
5 FUNCTION - 8 PIN, 12 AMP			
TDRPRO-5001	SPDT	0.1 SECOND TO 9,990 HOURS	70-464-1 70-750D8-1
3 FUNCTION - 8 PIN, 12 AMP			
TDRPRO-5002	DPDT	0.1 SECOND TO 9,990 HOURS	70-464-1 70-750D8-1

COMPARE TO: IDEC RTE SERIES, OMRON H3 SERIES & P & B CN SERIES

PHONE: (843) 393-5778 FAX: (843) 393-4123 EMAIL: info@magnecraft.com

9/04

4...9

FEATURES

BENEFITS

UL
UL Recognized
File No. E43641

WIDE TIME RANGE:

AC / DC:

ALL POPULAR VOLTAGES
AVAILABLE:

DUAL FUNCTION:

INDICATOR LED'S:

ELECTROMECHANICAL OUTPUT:

COMPACT SIZE:

FITS INDUSTRY SOCKETS:

ACCEPTS FLANGE
ADAPTORS:

REMOVABLE KNOB:

0.1 SECONDS TO 10 HOUR, 8 SCALES,
FINE ADJUSTMENT WITH KNOB

NO NEED TO SPECIFY AC OR DC (AC ONLY FOR 240)

12, 24, 120, 240

ON DELAY / INTERVAL
OFF DELAY / RETRIGGERABLE ONE SHOT

GREEN SHOWS POWER ON
RED SHOWS OUTPUT RELAY ENERGIZED

UP TO 12 AMPS PER POLE, DPDT

36mm WIDE TO OPTIMIZE DIN RAIL SPACE

8 PIN OCTAL, 11 PIN OCTAL OR BLADES

PANEL MOUNT OR DIN MOUNT
WITH TERMINALS EXPOSED

PREVENT TAMPERING, REMOVE KNOB TO
EXPOSE RECESSED SCREWDRIVER SLOT

MANUFACTURED
UNDER
ISO 9002
& QS 9000

TDRSRXB
TDRSOXB



BLADES →
(QUICK CONNECT)

TDRSRXP
TDRSOXP



PINS →
(OCTAL BASE)

**TOP OR SIDE MOUNT
BRACKET ADAPTORS**

ORDERED AND SHIPPED
SEPARATELY



DIN ADAPTER
16-711C4



FLANGE ADAPTER
16-711C1

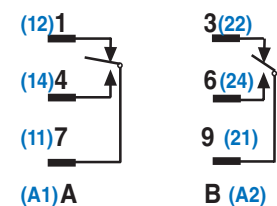
GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		2-On delay/interval or Off delay/ Retriggerable One Shot
Time Scales:		8
Time Range:		0.1 second to 10 hours
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	±10
Timing Repeatability (Constant voltage and temperature):	%	1
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	VAC/VDC	12, 24, 120, 240 (240 AC only)
Input Voltage Tolerance:	of nominal	-20% , +10%,
Power Consumption:	maximum	5 VA / 2.5 W
Transient Protection:		Yes
Reverse Polarity Protection:		Non-polarity sensitive
Input Indication:		Green LED
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive @ 30
Minimum Load:	mW	500 mW
Contact Material:		Silver alloy
Output Indication:		Red LED

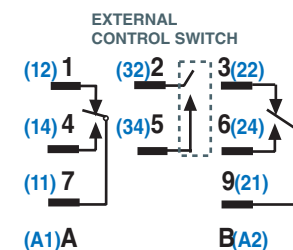
		UNITS
DIELECTRIC STRENGTH		
Across Open Contacts:	Vrms	1,000
Input to Contacts:	Vrms	2,500
Pole to Pole:	Vrms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-20
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	10.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:		XB= 0.187 x 0.020" quick connect OXP=8 pin octal, RXP=11 pin octal
Weight:	grams	90

Magnecraft
Struthers-Dunn
Your Contact for Industrial Relays

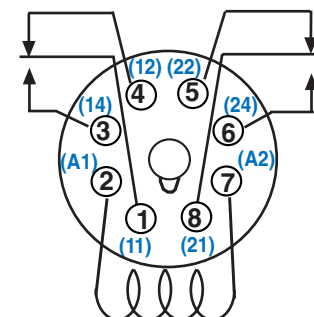
WIRING DIAGRAM (VIEWED FROM PIN END)



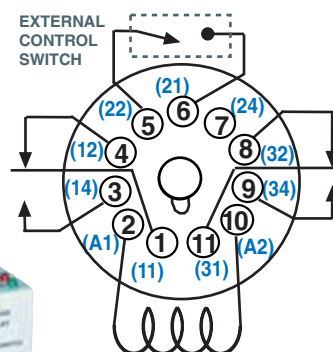
INPUT ON DELAY



INPUT OFF DELAY



INPUT ON DELAY



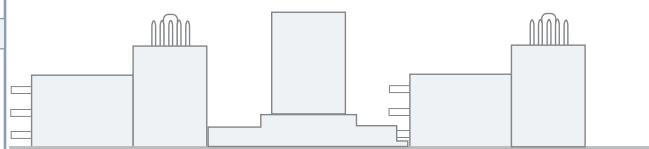
INPUT OFF DELAY

**ALTERNATE NEMA
OR IEC () NUMBERS
VIEWED FROM
PIN SIDE**

STANDARD PART NUMBERS	CONTACT CONFIGU- RATION	NOMINAL INPUT VOLTAGE	MATING SOCKETS See section 7
8 PIN OCTAL BASE - ON DELAY / INTERVAL , 12 AMP			
TDRSOXP-12	DPDT	12 VAC/VDC	70-464-1 70-750D8-1
TDRSOXP-24		24 VAC/VDC	
TDRSOXP-120		120 VAC/VDC	
TDRSOXP-240		240 VAC	
11 PIN OCTAL BASE - OFF DELAY /RETRIGGERABLE ONE SHOT, 12 AMP			
TDRSRXP-12	DPDT	12 VAC/VDC	70-465-1 70-750D11-1
TDRSRXP-24		24 VAC/VDC	
TDRSRXP-120		120 VAC/VDC	
TDRSRXP-240		240 VAC	
8 BLADE SQUARE BASE - ON DELAY / INTERVAL, 12 AMP			
*TDRSOXB-12	DPDT	12 VAC/VDC	70-463-1
*TDRSOXB-24		24 VAC/VDC	
*TDRSOXB-120		120 VAC/VDC	
TDRSOXB-240		240 VAC	
10 BLADE SQUARE BASE - OFF DELAY / RETRIGGERABLE ONE SHOT, 12 AMP			
TDRSRXB-12	DPDT	12 VAC/VDC	70-463-1
TDRSRXB-24		24 VAC/VDC	
TDRSRXB-120		120 VAC/VDC	
TDRSRXB-240		240 VAC	



* Remote adjust versions available-call



DPDT, 10 AMPS

WIRING DIAGRAM (VIEWED FROM PIN END)



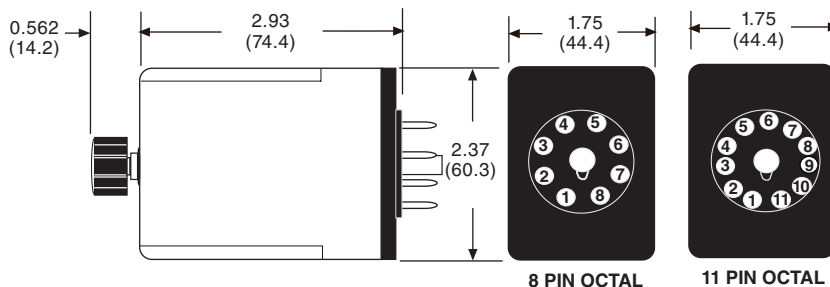
COMPLIES WITH REQUIREMENTS OF

* IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE

* IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION

* CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

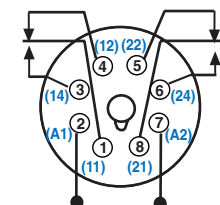
OUTLINE DIMENSIONS DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



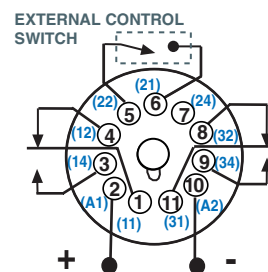
GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		On delay, off delay, interval or one shot
Time Scales:		1
Time Range:		0.1 second to 120 minutes
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	+20
Timing Repeatability (Constant voltage and temperature):	%	0.1
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:		See P/N chart
Input Voltage Tolerance:	VAC 50/60 Hz	85% to 110%,
	VDC	80% to 110%
Power Consumption:	maximum	2.5 VA / 2 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	10 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	10 amps resistive @ 30
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,500
Pole to Pole:	V rms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:		SOX = 8 pin octal SRX = 11 pin octal
Weight:	grams	115

THE CLASS 211 TIME DELAY RELAY MAKES USE OF HYBRID CIRCUITRY, COMBINING INTEGRATED CIRCUITS FOR A MULTITUDE OF TIMING FUNCTIONS, AND THE RELIABILITY OF RELAY TECHNOLOGY.



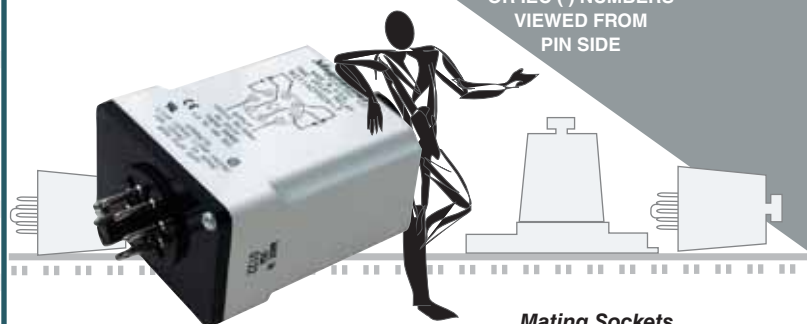
INPUT ON DELAY



INPUT OFF DELAY

EXTERNAL SWITCH SHALL NOT BE CONNECTED TO ANY EXTERNAL LOAD OR VOLTAGE. DAMAGE TO INTERNAL COMPONENTS MAY OCCUR.

ALTERNATE NEMA OR IEC () NUMBERS VIEWED FROM PIN SIDE



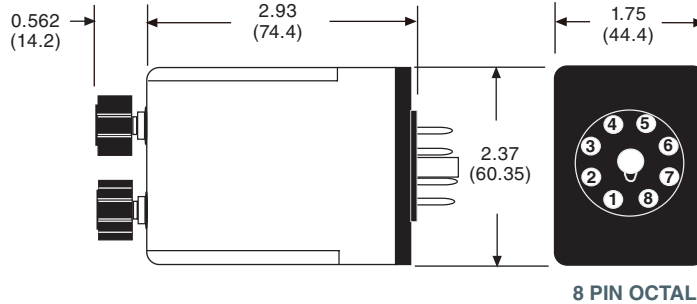
Mating Sockets
70-464-1, 70-750D8-1: SOX, 70-465-1, , 70-750D11-1: SRX
See section 7

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
ON DELAY, 10 AMP		
211ACPSOX-3	24 VAC	1 TO 180 SECONDS
W211ACPSOX-5	120 VAC	0.1 TO 10 SECONDS
W211ACPSOX-7	120 VAC	1.0 TO 180 SECONDS
W211ACPSOX-8	120 VAC	2.0 TO 300 SECONDS
W211ACPSOX-60	120 VAC	1.0 TO 15 MINUTES
W211ACPSOX-61	120 VAC	2.0 TO 30 MINUTES
W211ACPSOX-62	120 VAC	4.0 TO 60 MINUTES
W211CPSOX-1	24 VDC	0.1 TO 10 SECONDS
W211CPSOX-3	24 VDC	1.0 TO 180 SECONDS
OFF DELAY, 10 AMP		
W211ACPSRX-5	120 VAC	0.1 TO 10 SECONDS
W211ACPSRX-7	120 VAC	1.0 TO 180 SECONDS
W211ACPSRX-8	120 VAC	2.0 TO 300 SECONDS
W211ACPSRX-60	120 VAC	1.0 TO 15 MINUTES
W211CPSRX-1	24 VDC	0.1 TO 10 SECONDS
W211CPSRX-3	24 VDC	1.0 TO 180 SECONDS

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

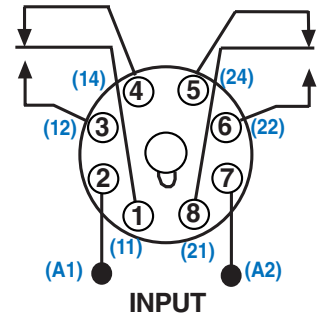
OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



8 PIN OCTAL

WIRING DIAGRAM (VIEWED FROM PIN END)



ALTERNATE NEMA
OR IEC () NUMBERS
VIEWED FROM
PIN SIDE

GENERAL SPECIFICATIONS (@ 25°C)

		UNITS	
TIMING			
Functions Available:			Repeat cycle
Time Scales:			1
Time Range:			0.1 seconds to 30 minutes
Timing Adjustment:			KNOB
Timing Deviation (mechanical setting):	%		+20
Timing Repeatability			
(Constant voltage and temperature):	%		0.1
Reset Time:	mS maximum		150
Input Pulse Length:	mS maximum		50
INPUT			
Standard Voltage:	AC 50/60 Hz		120
Input Voltage Tolerance:	of nominal		AC: 85% to 110%, DC: 80% to 110%
Power Consumption:	maximum		2.5 VA / 2 W
Transient Protection:			Yes
Reverse Polarity Protection:			Yes
Input Indication:			No
OUTPUT			
Contact Rating AC Amperes (AC1):	VAC 50/60Hz		10 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC		10 amps resistive @ 28
Contact Rating Horsepower:	HP @ VAC		1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:			B300
Minimum Load:	mW		500
Contact Material:			Silver alloy
Output Indication:			No
DIELECTRIC STRENGTH			
Across Open Contacts:	V rms		1,000
Input to Contacts:	V rms		2,500
Pole to Pole:	V rms		2,000
TEMPERATURE			
Operating, Lower:	°C		-20
Operating, Upper:	°C		+55
Storage, Lower:	°C		-40
Storage, Upper:	°C		+85
LIFE EXPECTANCY			
Electrical Full Load	operations		100,000
Mechanical @ no Load :	operations		10.000.000
MISCELLANEOUS			
Operating Position:			Any
Cover Protection Category:	IP		40
Terminals:			8 pin octal
Weight:	grams		130

INDEPENDENT TIME SETTINGS FOR BOTH "ON" AND "OFF" TIMING RANGES



Mating Sockets
70-464-1, 70-750D8-1
See section 7

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
REPEAT CYCLE, 10 AMP		
W222ACPF-11	120 VAC	0.1 TO 10 SECONDS
W222ACPF-16	120 VAC	3 TO 300 SECONDS
W222ACPF-27	120 VAC	2 TO 30 MINUTES

DPDT, 12 AMPS

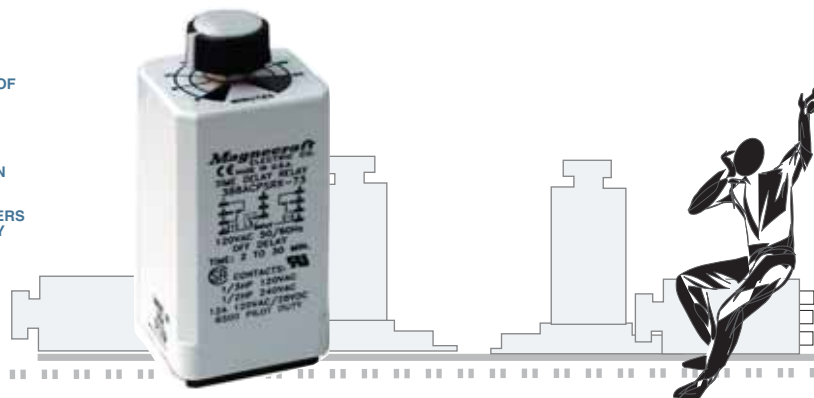
WIRING DIAGRAM
(VIEWED FROM PIN END)

UL Recognized
File No. E43641



COMPLIES WITH REQUIREMENTS OF

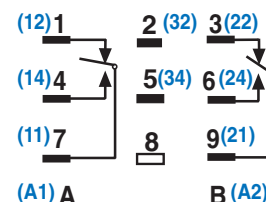
- * IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
- * IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
- * CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT



GENERAL SPECIFICATIONS (@ 25°C)

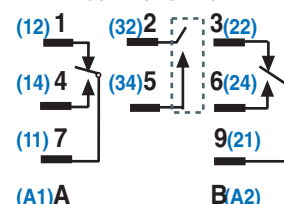
	UNITS	
TIMING		
Functions Available:		On delay or off delay
Time Scales:		1
Time Range:		0.1 to 180 Seconds
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	+20
Timing Repeatability		
(Constant voltage and temperature):	%	0.1
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	VAC 50/60Hz	AC: 120, DC:24
Input Voltage Tolerance:	of nominal	AC: 85% to 110%, DC: 80% to 110%
Power Consumption:	maximum	2.5 VA / 2 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,000
Pole to Pole:	V rms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	5.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.187 x 0.020" quick connect
Weight:	grams	96

**KNOB ADJUSTABLE
TIME "ON" OR "OFF"
DELAY FUNCTIONS.**



INPUT ON DELAY

EXTERNAL
CONTROL SWITCH

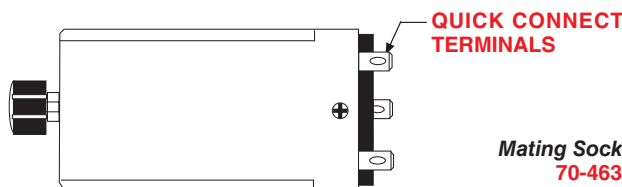
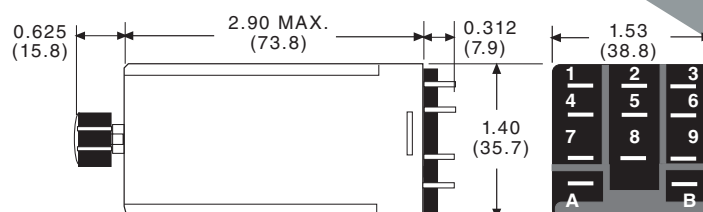


INPUT OFF DELAY

EXTERNAL SWITCH SHALL
NOT BE CONNECTED TO
ANY EXTERNAL LOAD OR
VOLTAGE. DAMAGE TO
INTERNAL COMPONENTS
MAY OCCUR.

ALTERNATE NEMA
OR IEC () NUMBERS
VIEWED FROM
PIN SIDE

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



**Mating Socket
70-463-1
See section 7**

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
ON DELAY, 12 AMP		
W388ACPSOX-42	120 VAC	0.1 TO 10 SECONDS
W388ACPSOX-44	120 VAC	1.0 TO 180 SECONDS
OFF DELAY, 12 AMP		
W388CPSRX-2	24 VDC	0.1 TO 10 SECONDS
W388CPSRX-4	24 VDC	1.0 TO 180 SECONDS

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

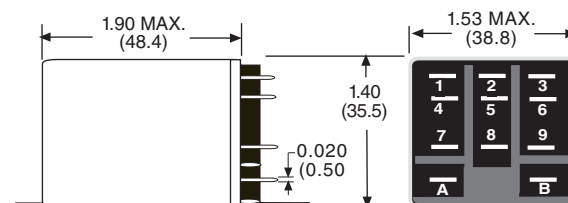
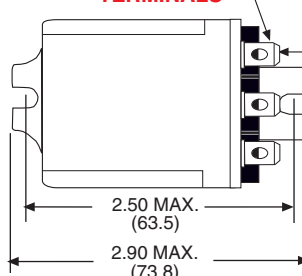
- * IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE
- * IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION
- * CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT



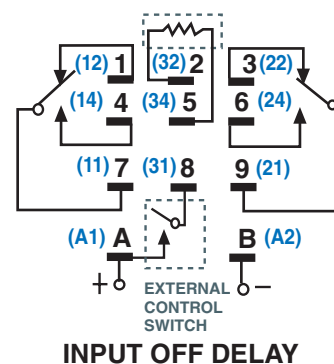
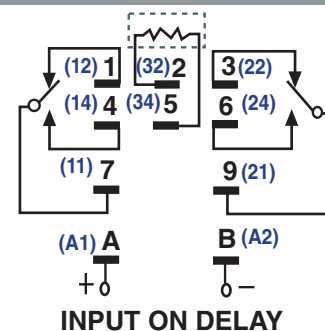
PLUG-IN TIMER HAS SAME CASE DIMENSIONS AS FLANGE MOUNT EXCEPT - NO FLANGE AND SOCKET MOUNTABLE.

OUTLINE DIMENSIONS
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).

QUICK CONNECT TERMINALS
SOLDER / PLUG-IN TERMINALS



WIRING DIAGRAM (VIEWED FROM PIN END)



EXTERNAL SWITCH SHALL NOT BE CONNECTED TO ANY EXTERNAL LOAD OR VOLTAGE. DAMAGE TO INTERNAL COMPONENTS MAY OCCUR.

ALTERNATE NEMA OR IEC () NUMBERS VIEWED FROM PIN SIDE

TIME ADJUSTED BY EXTERNAL RESISTOR

Mating Socket
70-463-1: EXCEPT NO SOCKET FOR FLANGE MOUNT
See section 7

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		On delay or off delay
Time Scales:		1
Time Range:		0.1 to 120 Seconds
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	+20
Timing Repeatability (Constant voltage and temperature):	%	3
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	VAC 50/60 Hz	120
	VDC	24
Input Voltage Tolerance:	of nominal	AC:85% to 110%,
	of nominal	DC:80% to 110%
	maximum	2.5 VA / 2 W
Power Consumption:		Yes
Transient Protection:		Yes
Reverse Polarity Protection:		No
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,000
Pole to Pole:	V rms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.187 x 0.020"
Weight:	grams	85

STANDARD PART NUMBERS	NOMINAL INPUT VOLTAGE	TIMING RANGE	EXTERNAL RESISTOR
ON DELAY PLUG-IN STYLE, 12 AMP			
W388ACPSOX-1	120 VAC	0.1 TO 10 SECONDS	20,000 Ω
W388ACPSOX-2	120 VAC	1.0 TO 120 SECONDS	PER SECOND
W388CPSOX-1	24 VDC	0.1 TO 10 SECONDS	16,000 Ω
W388CPSOX-2	24 VDC	1.0 TO 120 SECONDS	PER SECOND
ON DELAY SURFACE MOUNT FLANGE STYLE, 12 AMP			
W388ACQSOX-1	120 VAC	0.1 TO 10 SECONDS	20,000 Ω
W388ACQSOX-2	120 VAC	1.0 TO 120 SECONDS	PER SECOND
W388CQSOX-2	24 VDC	1.0 TO 120 SECONDS	PER SECOND
OFF DELAY PLUG-IN STYLE, 12 AMP			
W388CPSRX-22	24 VDC	1.0 TO 120 SECONDS	16,000 Ω
			PER SECOND

DPDT, 12 AMPS

WIRING DIAGRAM
(VIEWED FROM PIN END)



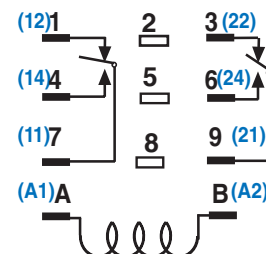
COMPLIES WITH REQUIREMENTS OF

★ IEC STANDARDS 947-4-1 AND 947-5-1 LOW VOLTAGE DIRECTIVE

★ IEC = INTERNATIONAL ELECTROTECHNICAL COMMISSION

★ CE TESTING AND EVALUATION PERFORMED BY THE UNDERWRITERS LABORATORIES AS A THIRD PARTY PARTICIPANT

THE CLASS 388 TRUE OFF DELAY RELAY PULLS IN WHEN POWER IS APPLIED TO THE INPUT. TIMING STARTS WHEN POWER IS REMOVED FROM THE INPUT, AND AT THE END OF THE PRESET TIMING PERIOD THE RELAY WILL DROPOUT.



INPUT OFF DELAY

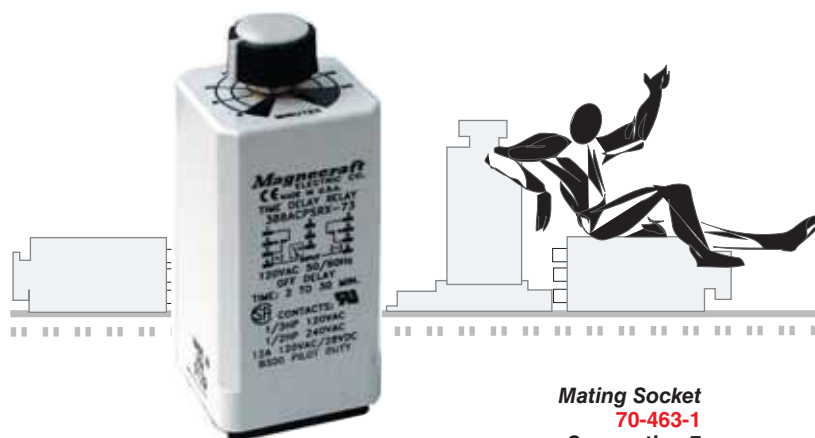
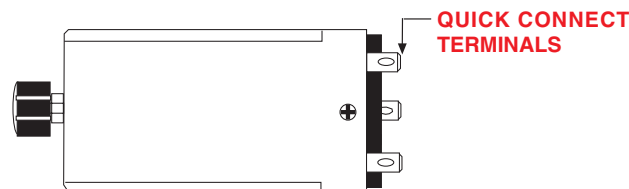
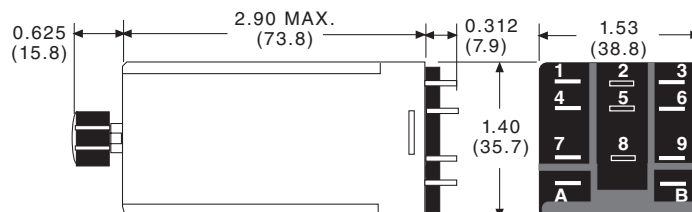
ALTERNATE NEMA OR IEC () NUMBERS VIEWED FROM PIN SIDE

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		True off delay
Time Scales:		1
Time Range:		0.1 to 60 seconds
Timing Adjustment:		NOB
Timing Deviation (mechanical setting):	%	+20
Timing Repeatability (Constant voltage and temperature):	%	3
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	VAC 50/60 Hz	120
	VDC	24
Input Voltage Tolerance:	of nominal	AC:85% to 110%, DC:80% to 110%
Power Consumption:	maximum	1.5 VA / 1 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	12 amps resistive @ 240
Contact Rating DC Amperes (DC1):	VDC	12 amps resistive @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,000
Pole to Pole:	V rms	2,000
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.187 x 0.020" quick connect
Weight:	grams	96

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



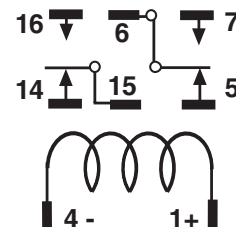
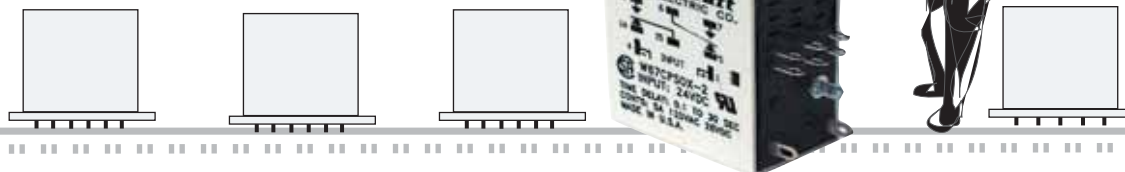
Mating Socket
70-463-1
See section 7

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
AC OPERATED, 12 AMP		
W388ACPSRX-29	120 VAC	0.6 TO 60 SECONDS
W388ACPSRX-30	120 VAC	0.1 TO 10 SECONDS
DC OPERATED, 12 AMP		
W388CPSRX-35	24 VDC	0.1 TO 10 SECONDS
W388CPSRX-36	24 VDC	0.6 TO 60 SECONDS

CALL FACTORY FOR OTHER VOLTAGES, TIME AND FUNCTIONS

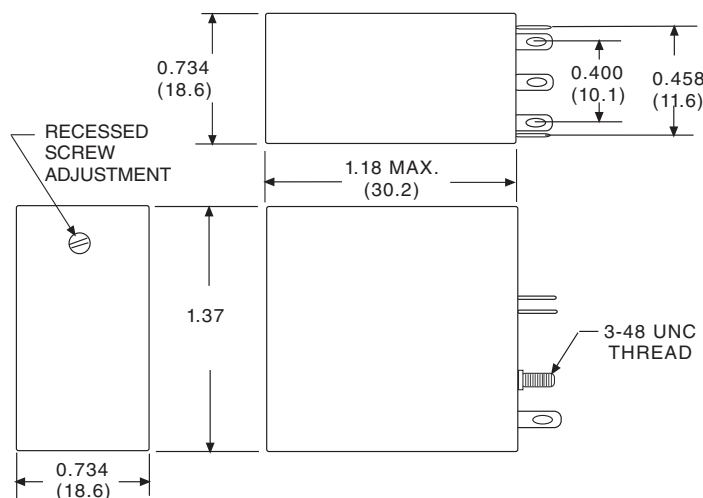
DPDT, 5 AMPS

WIRING DIAGRAM (VIEWED FROM PIN END)



OUTLINE DIMENSIONS

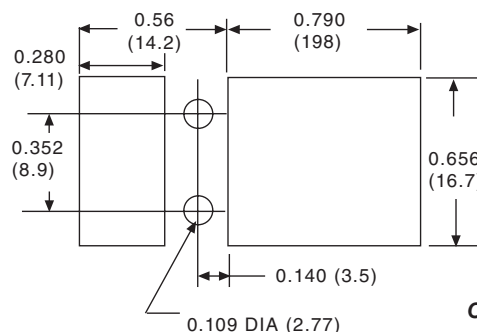
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		On delay
Time Scales:		1
Time Range:		0.1 to 30 Seconds
Timing Adjustment:		Recessed potentiometer
Timing Deviation (mechanical setting):	%	No scale printed on part
Timing Repeatability (Constant voltage and temperature):	%	2
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	Not applicable
INPUT		
Standard Voltage:	VAC 50/60Hz	12, 24
Input Voltage Tolerance:	of nominal	DC: 80% to 110%
Power Consumption:	maximum	1.1 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	5 amps resistive @ 120
Contact Rating DC Amperes (DC1):	VDC	5 amps resistive @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Minimum Load:	mW	500
Contact Material:		Silver alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	500
Input to Contacts:	V rms	1,500
Pole to Pole:	V rms	1,500
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	50,000
Mechanical @ no Load :	operations	5,000,000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.100 x 0.020" tabs
Weight:	grams	35

CHASSIS CUTOUT FOR PANEL MOUNTING



Chassis Mount:
70-307-1
PCB:
70-308-1
See section 7

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	TIMING RANGE
ON DELAY, 5 AMP		
W67CPSOX-1	12 VDC	0.1 TO 30 SECONDS
W67CPSOX-2	24 VDC	0.1 TO 30 SECONDS

UL CONTACT LOAD RATINGS TABLE

UL US
UL Recognized
File No. E13224

CSA
Class 246 CSA
Certified

UL US
LISTED
367G
WHEN USED WITH
SOCKET 27390D
or 33377D

POLES	CURRENT OR HORSE POWER	LOAD VOLTAGE	LOAD VOLTAGE FREQUENCY	TYPE OF LOAD
ALL STYLES	10 AMP	120 VAC	50/60 Hz	RESISTIVE
	5 AMP	240 VAC	50/60 Hz	RESISTIVE
	10 AMP	28 VDC	DC	RESISTIVE
	0.5 AMP	125 VDC	DC	RESISTIVE
	3 AMP	120 VAC	50/60 Hz	INDUCTIVE
	1 AMP	240 VAC	50/60 Hz	INDUCTIVE
	3 AMP	28 VDC	DC	INDUCTIVE
	0.1 AMP	125 VDC	DC	INDUCTIVE

CONTACTS CAN SWITCH 30 AMP LOADS AND CARRY 10 AMPS CONTINUOUSLY AT VOLTAGES SHOWN IN UL CONTACT LOAD RATINGS TABLE.

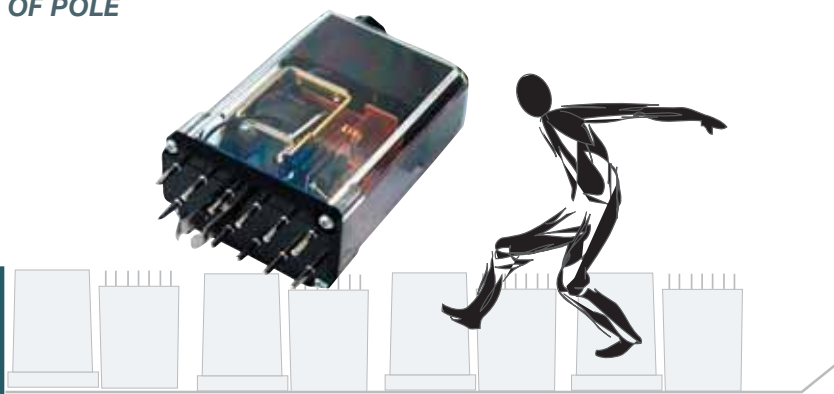
SUFFIX "69" WITH BLOWOUT MAGNET FOR DC SWITCHING (NOT UL OR CSA)

SPST-NO	1.5 AMP	125 VDC	DC	RESISTIVE
SPST-NO-DM	4 AMP	125 VDC	DC	RESISTIVE
SPST-NO	0.5 AMP	250 VDC	DC	RESISTIVE
SPST-NO-DM	1.5 AMP	250 VDC	DC	RESISTIVE
SPST-NO	0.5 AMP	125 VDC	DC	INDUCTIVE
SPST-NO-DM	1.5 AMP	125 VDC	DC	INDUCTIVE
SPST-NO	150 mA	250 VDC	DC	INDUCTIVE
SPST-NO-DM	0.5 AMP	250 VDC	DC	INDUCTIVE

THE CLASS 246 & 247 ARE AVAILABLE WITH A VARIETY OF POLE AND CONTACT CONFIGURATIONS.
A LARGE CHOICE OF OPTIONS IS AVAILABLE.

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
TIMING		
Functions Available:		On delay or off delay
Time Scales:		1
Time Range:		0.1 to 300 seconds
Timing Adjustment:		KNOB
Timing Deviation (mechanical setting):	%	No scale printed on part
Timing Repeatability (Constant voltage and temperature):	%	3
Reset Time:	mS maximum	150
Input Pulse Length:	mS minimum	50
INPUT		
Standard Voltage:	AC 50/60 Hz	See ordering code
Input Voltage Tolerance:	of nominal	AC: 85% to 110%, DC: 80% to 110%
Power Consumption:	maximum	5 VA / 2.5 W
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:		Optional
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	10 amps resistive @ 120
Contact Rating DC Amperes (DC1):	VDC	10 amps resistive @ 28
Minimum Load:	mW	500 mW
Contact Material:		Silver alloy
Output Indication:		No



	UNITS	
DIELECTRIC STRENGTH		
Across Open Contacts:	Vrms	1,500
Input to Contacts:	Vrms	1,500
Pole to Pole:	V rms	1,500
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	AC: +45, DC: +70
Storage, Lower:	°C	-20
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:		12 or 14 pin rectangular
Weight:	grams	227

246 & 247 INDUSTRIAL DELAY TIMER RELAYS

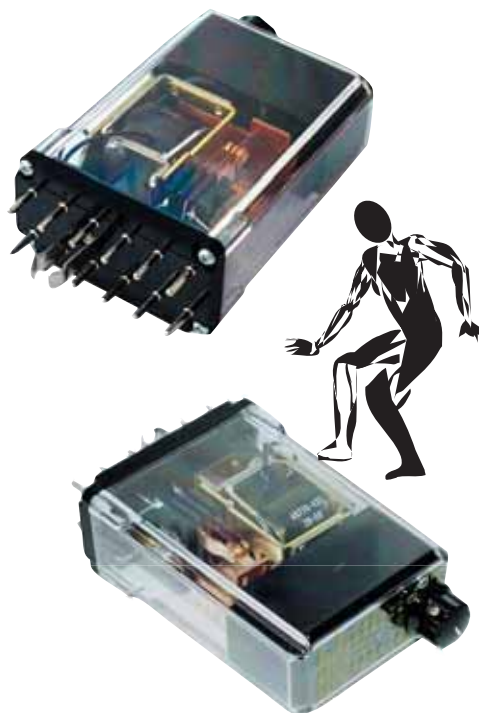
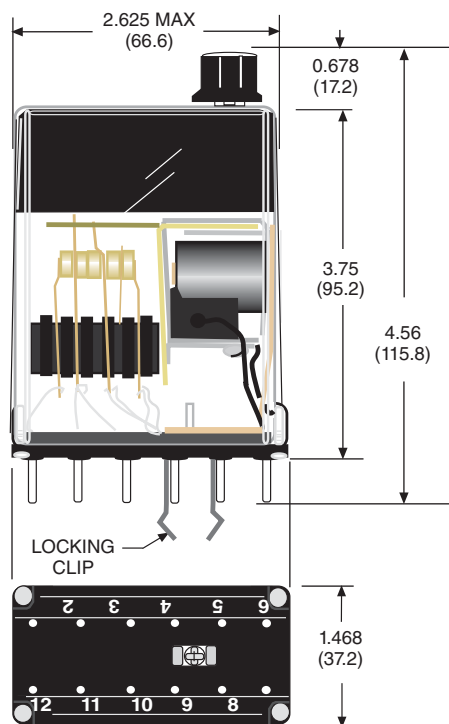


DPDT & 4PDT 10 AMPS

WIRING DIAGRAM

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



THE AGASTAT ALTERNATIVE

ORDERING CODE

247

XBX

P

L

-010

-120A

CLASS:

246: ON DELAY, 247: OFF DELAY,

CONTACT ARRANGEMENTS:

XBX: (2 FORM "C"), XCX: (3 FORM "C")

ABA: (1 FORM A & 2 FORM C & 1 FORM B).

BBX: (2 FORM A & 2 FORM C) 246 ONLY.

XDX: (4 FORM C) 246 ONLY.

STANDARD FEATURES:

PLUG-IN WITH POLYCARBONATE COVER: CODE P

OPTIONS:

INDICATOR LAMP: CODE L

MANUAL ACTUATOR: CODE M

BIFURCATED CONTACTS (5 AMPS MAX): CODE 33

PERMANENT MAGNET, BLOWOUT: CODE 69

ADJUSTMENT KNOB: NO CODE

REMOTE ADJ. (EXT POT REQUIRED) : CODE R

LOCKING SHAFT POT: CODE 8

INSTANTANEOUS CONTACTS: CALL

TIMING RANGES:

0.1 - 1.0 SEC: CODE 001, 0.2 - 2.0 SEC: CODE 002, 1.0 - 10 SEC: CODE 010

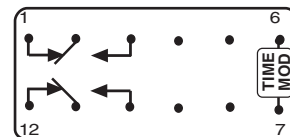
3.0 - 30 SEC: CODE 030, 6.0 - 60 SEC: CODE 060, 18 - 180 SEC: CODE 180

30 - 300 SEC: CODE 300, OVER 300 SEC: CALL, FIXED: CODE F (EX. 3F)

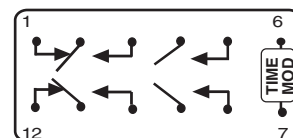
OPERATING VOLTAGE:

24, 48, 120, 240 ADD "A" FOR AC COILS

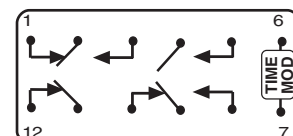
12, 24, 48, 110-125, 250 ADD "D" FOR DC COILS



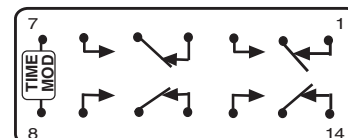
246XBX



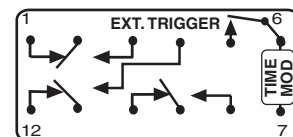
246BBX



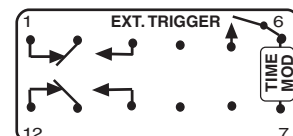
246ABX



246 XDX



247XCX



247XBX

CROSS REFERENCE AVAILABLE
CONSULT FACTORY

Mating Sockets:

12 Pin: 27390

14 Pin: 33377

Add "D" suffix (27390D, 33377D)

for DIN mount socket

See section 7

CALL FACTORY FOR OTHER VOLTAGES,
TIME AND FUNCTIONS

**MANUFACTURED
UNDER
ISO 9002**

FEATURES

INDEPENDENT UPPER AND LOWER LIMITS

TIME DELAY

TWO STATUS LEDs

DIN MODULE

BENEFITS

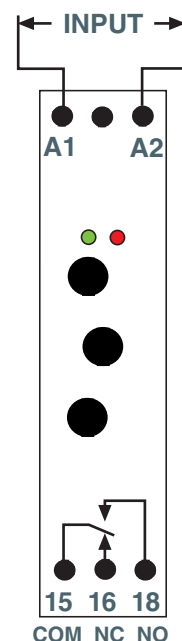
SENSE OVER VOLTAGE, UNDER VOLTAGE OR BOTH

AVOID NUISANCE TRIPPING

INDICATES STATUS AT A GLANCE

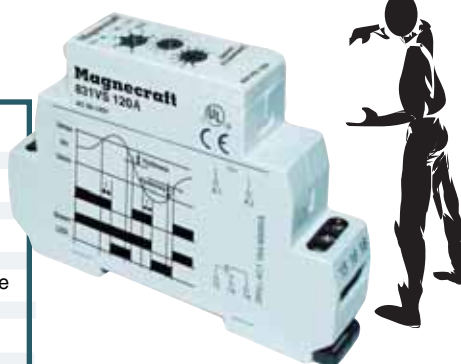
CLIP DIRECTLY TO 35 mm DIN RAIL

WIRING DIAGRAM



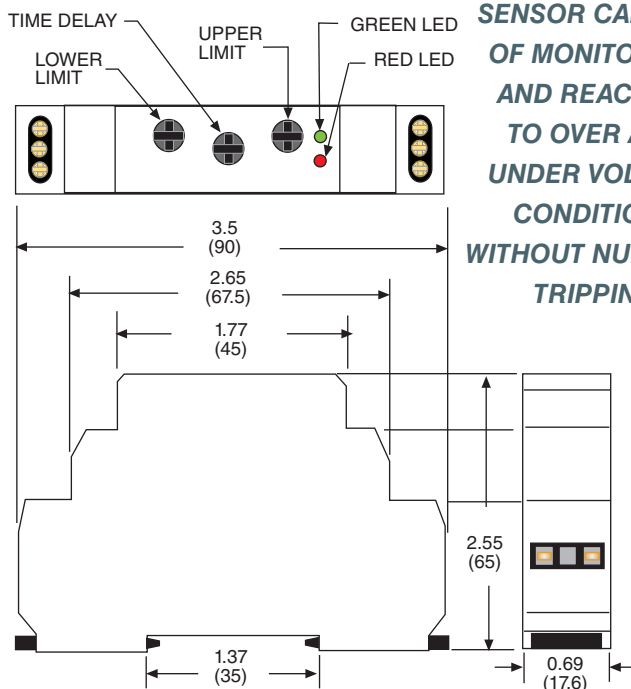
GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
INPUT/SENSING		
Standard Voltage Nominal:	VAC 50/60 Hz	120
Input Voltage Absolute Maximum:	VAC 50/60 Hz	200
Upper Input Voltage Range:	VAC 50/60 Hz	80 to 150
Lower Input Voltage Range:	%	30 to 99 of upper limit voltage
Power Consumption:	maximum	1.2 VA
Transient Protection:		Yes
Reverse Polarity Protection:		Not Applicable
Operate Time:	mS maximum	25
Release Time:	mS maximum	20
Input Indication:		Green LED
TIMING		
Time Scales:		1
Time Range:		0 to 10 second
Setting Adjustment:		Recessed potentiometer
Timing Deviation (mechanical setting):	%	5
Timing Repeatability (Constant voltage and temperature):	%	<1
Reset Time:	mS maximum	150
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	15 amps resistive @ 120,240
Contact Rating DC Amperes (DC1):	VDC	15 amps resistive @ 24
Contact Rating Pilot Duty:	mW	500
Contact Material:		Silver-Nickel 90/10
Output Indication:		Red: LED: Blinks = timing On = energized
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,500
Pole to Pole:		Not applicable
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-30
Storage, Upper:	°C	+70
LIFE EXPECTANCY		
Electrical Full Load	operations	70,000
Mechanical @ no Load :	operations	10,000,000
MISCELLANEOUS		
Operating Position:		Any
Maximum Wire Size		2.5 mm (UL-14 gauge)
Cover Protection Category:	IP	40
Pollution Degree:		2
Terminals:	Inch	Captive screws
Weight:	grams	60



OUTLINE DIMENSIONS

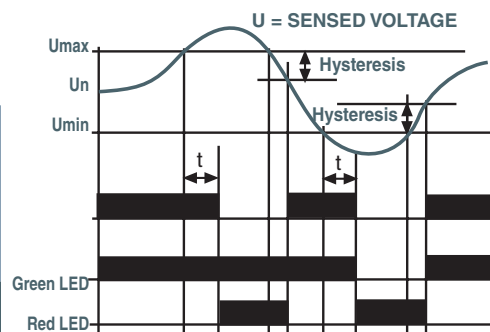
DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



TYPE 831 IS A SINGLE PHASE AC VOLTAGE SENSOR CAPABLE OF MONITORING AND REACTING TO OVER AND UNDER VOLTAGE CONDITIONS WITHOUT NUISANCE TRIPPING

STANDARD PART NUMBER

831VS-120A



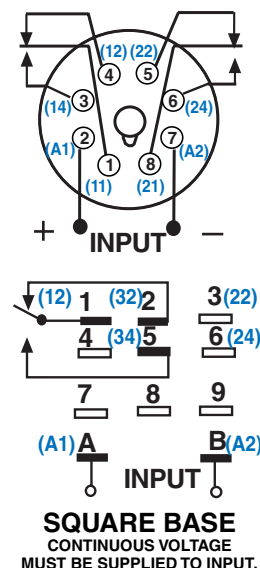


CLASS 236 VOLTAGE SENSING RELAYS COMBINE A SOLID STATE SENSOR WITH A SPDT, 13 AMP OR DPDT 10 AMP RELAY.
PULL-IN & DROPOUT VOLTAGES ARE INDEPENDENTLY ADJUSTABLE.
THE 236 CAN BE USED EITHER AS A OVER OR UNDER VOLTAGE DETECTING RELAY. STATUS L.E.D. INCLUDED.

GENERAL SPECIFICATIONS (@ 25°C)

INPUT/SENSING		UNITS
Standard Voltage Nominal:	VAC 50/60 Hz	24, 120, 240, 480
	VDC	24
Input Voltage Absolute Maximum:	maximum	Nominal +60% except 480volt where 600 VAC is maximum
Upper Input Voltage Range:	nominal	75 to 115%
Lower Input Voltage Range:		75 to 95% of set pickup
Power Consumption:	maximum	3.5 VA / W
Transient Protection:		Yes
Reverse Polarity Protection:	DC	Yes
Operate Time:	mS maximum	25
Release Time:		20
Input Indication:		Green LED
TIMING		
Time Scales:		Optional on PX
Setting Adjustment:		PX= KNOB, CX=Recessed potentiometer
Reset Time:	mS maximum	150
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	DPDT=10 amps @ 240 SPDT=13 amps @ 240
Contact Rating DC Amperes (DC1):		DPDT=10 amps @ 28 SPDT=13 amps @ 28
Contact Rating Horsepower:	HP @ VAC	1/3 @ 120, 1/2 @ 240
Contact Rating Pilot Duty:		B300
Minimum Load:	mW	500
Contact Material:		Silver Alloy
Output Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	1,000
Input to Contacts:	V rms	2,500
Pole to Pole:	V rms	2,500
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-30
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	100,000
Mechanical @ no Load :	operations	DPDT= 10,000.000 SPDT= 5,000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:		PX= 8 pin octal CX= 0.187 x 0.020 quick connect
Weight:	Inch grams	DPDT: 156, SPDT: 125

WIRING DIAGRAM (VIEWED FROM PIN END)

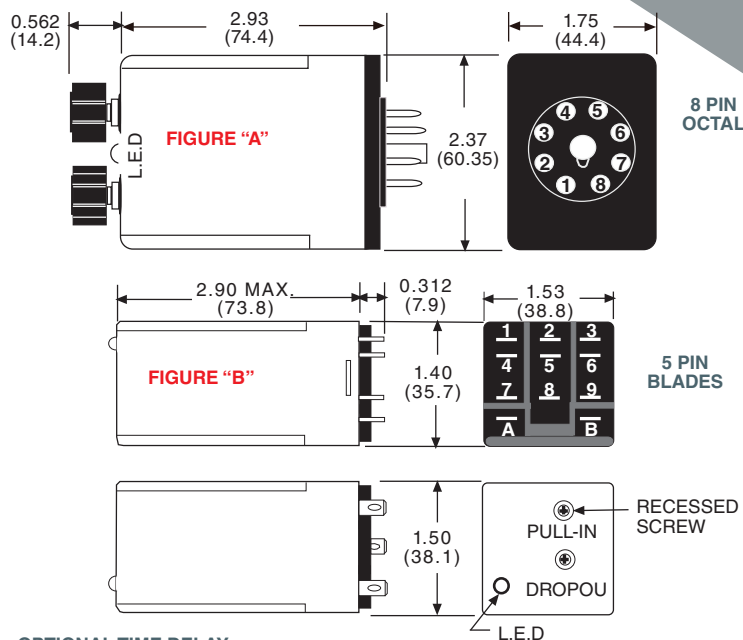


ALTERNATE NEMA
OR IEC () NUMBERS
VIEWED FROM
PIN SIDE



OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



OPTIONAL TIME DELAY
AVAILABLE IN OCTAL
PIN VERSION

Mating Sockets
70-464-1, 70-750D8-1: ACPX/CPX 70-463-1: ACX
See section 7

STANDARD PART NUMBERS	FIG.	NOMINAL INPUT VOLTAGE	VOLTAGE PULL-IN RANGE	VOLTAGE DROP-OUT RANGE
W236ACPX-1	A	120 VAC	92 TO 140 VAC	75% TO 95% OF PICKUP VOLTAGE SETTING
W236ACPX-4	A	24 VAC	20 TO 30 VAC	
W236CPX-1	A	24 VDC	20 TO 30 VDC	
W236ACX-1	B	120 VAC	90 TO 138 VAC	
W236ACX-2	B	208 / 220 / 240 VAC	180 TO 276 VAC	75% TO 95% OF PICKUP VOLTAGE SETTING
W236ACX-4	B	480 VAC	360 TO 552 VAC	

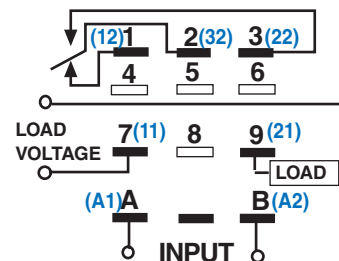
CALL FACTORY FOR OTHER VOLTAGES,
TIME AND FUNCTIONS

SPDT, 1.5 TO 15 AMPS

CLASS 235 CURRENT SENSING RELAY COMBINES A SOLID STATE SENSOR WITH A SPDT, 10 AMPS RELAY. THE SENSOR IS FIELD ADJUSTABLE FOR DETECTING AC CURRENT LEVELS IN EQUIPMENT.



WIRING DIAGRAM (VIEWED FROM PIN END)



CONTINUOUS VOLTAGE MUST BE SUPPLIED TO INPUT.

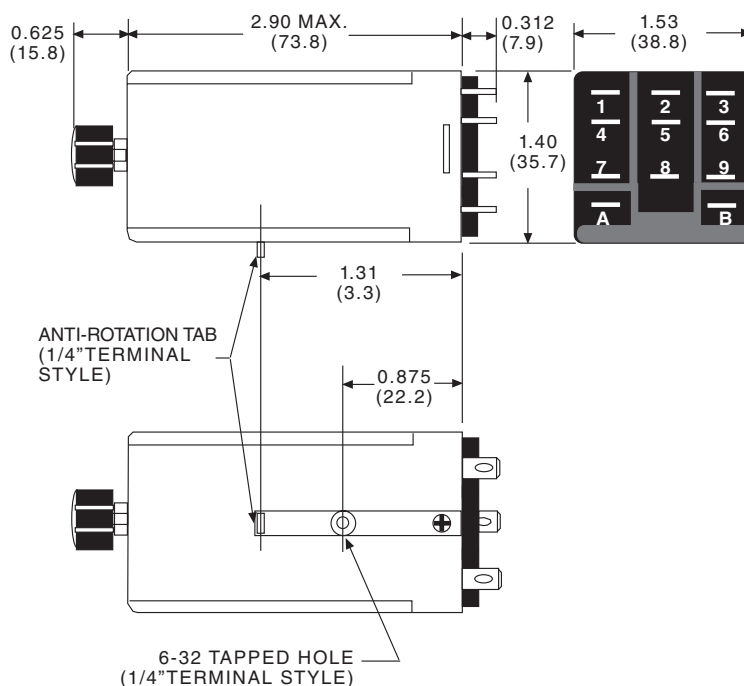
ALTERNATE NEMA
OR IEC () NUMBERS
VIEWED FROM
PIN SIDE

GENERAL SPECIFICATIONS (@ 25°C)

	UNITS	
SENSING		
Current Sense Range:	A	1.5 to 15
Setting Adjustment:		KNOB
Repeatability (constant voltage temperature):	%	2
Reset Time:	mS maximum	150
INPUT		
Standard Voltage:	VAC 50/60Hz	120
Input Voltage Tolerance AC:	of nominal maximum	-85% to +110%
Power Consumption:		2 VA
Transient Protection:		Yes
Reverse Polarity Protection:		Yes
Input Indication:	DC	No
OUTPUT		
Contact Rating AC Amperes (AC1):	VAC 50/60Hz	10 amps @ 120
Contact Rating DC Amperes (DC1):	VDC	6 amps @ 28
Minimum Load:	mW	500
Contact Material:		Silver Alloy
Output Indication:		No
TIMING		
Operate Time:	mS maximum	25
Release Time:	mS maximum	20
Input Indication:		No
DIELECTRIC STRENGTH		
Across Open Contacts:	V rms	500
Coil to Contacts (supply to Contacts):	V rms	2,500
TEMPERATURE		
Operating, Lower:	°C	-20
Operating, Upper:	°C	+55
Storage, Lower:	°C	-40
Storage, Upper:	°C	+85
LIFE EXPECTANCY		
Electrical Full Load	operations	200,000
Mechanical @ no Load :	operations	5.000.000
MISCELLANEOUS		
Operating Position:		Any
Cover Protection Category:	IP	40
Terminals:	Inch	0.187 x 0.020 quick connect
Weight:	grams	113

OUTLINE DIMENSIONS

DIMENSIONS SHOWN IN INCHES & (MILLIMETERS).



Mating Socket

70-463-1: ACX-3

See section 7

ACX-2 : no socket available

STANDARD PART NUMBER	NOMINAL INPUT VOLTAGE	CURRENT RANGE	TERMINAL SIZE
W235ACX-2	120 VAC	1.5 TO 15 AMPS	0.250"
W235ACX-3	120 VAC	1.5 TO 15 AMPS	0.187"

CALL FACTORY FOR OTHER VOLTAGES,
TIME AND FUNCTIONS

CROSS REFERENCE GUIDE

MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	SQUARE D	OMRON	A / B	NCC	IDEC
TDRPRO-5000	CNM5, CNS-35-96, CNS-35-76	9050JCK70V14	H3CA-A			
TDRPRO-5001			H3CA-8H			
TDRPRO-5002	CN1, CNS-35-92, CNS-35-72		H3CA-8			
TDRSOXP-24				700HRM12TU24		RTE-P1AD24
TDRSOXP-120				700HRM12TA17		RTE-P1AF20
TDRSOXP-240				700HRM12TA17		RTE-P1AF20
TDRSRXP-12					T2K-xxxxx-466	RTE-P2D12
TDRSRXP-24					T2K-xxxxx-467/462	RTE-P2AD24
TDRSRXP-120					T2K-xxxxx-461	RTE-P1AF20
TDRSOXB-12						RTE-B1D12
TDRSOXB-24						RTE-B1AD24
TDRSOXB-120						RTE-B1AF20
TDRSRXB-12						RTE-B2D12
TDRSRXB-24						RTE-B2AD24
TDRSRXB-120						RTE-B2AF20
MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	SQUARE D	CUTLER HAMMER	A / B	SIEMENS	OTHER
W211ACPSOX-18	CDB-38-70001					
W211ACPSOX-5	CDB-38-70003 CGB-38-70010S CHB-38-70001 CKB-38-70010 CB-1003B-70	9050JCK11V20	MTON1P120A	700HT12AA1	OND-0110-120A	SST12AAA (AGASTAT) 5YZ86 (GRAINGER) 7268K23 (McMASTER CAR) TIK-00010-461 (NCC)
W211ACPSOX-7	CKB-38-70180 CHB-38-70003 CB-1005B-70 CDB-38-70005	9050JCK15V20	MTON2P120A	700HT12BA1	OND-1180-120A	5X829 (GRAINGER) 7268K26 (McMASTER CAR)
W211ACPSOX-8	CGB-38-70005M			700HT12CA1		R28-11A10-120M(NET) 5X830 (GRAINGER) 7268K51 (McMASTER CAR)
W211ACPSOX-60	CGB-38-70010M	9050JCK16V20				6X601 (GRAINGER)
W211ACPSOX-61		9050JCK17V20				7268K53 (McMASTER CAR)
W211ACPSOX-62	CGB-38-70050M	9050JCK18V20				7268K54 (McMASTER CAR)
W211ACPSOX-63	CB-1007B70	9050JCK19V20				
W211CPSOX-1	CHD-38-30001 CB-1028D-30 CDD-38-30003			700HT12AZ24	OND-0110-24D	
W211ACPSRX-5	CHB-38-70011 CDB-38-70014 CB-1021B-78	9050JCK21V20	MTOF1P120A	700HT22AA1	OFD-0110-120A	SST22AAA (AGASTAT) 7268K43 (McMASTER CAR)
W211ACPSRX-7	CHB-38-70013	9050JCK25V20	MTOF2P120A	700HT22BA1	OFD-1180-120A	7268K46 (McMASTER CAR) 6X154 (GRAINGER) T3K-00010-461 (NCC)
W211CPSRX-1	CHD-38-30011			700HT22AZ24		7268K32 (McMASTER CAR)
W211CPSRX-3	CHD-38-30013			700HT22BZ24		
	CDD-38-30008					

THE CROSS REFERENCE IS INTENDED TO MATCH FOOT PRINT, INTERNAL WIRING, AND CONTACT LOAD RATINGS.
CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.

CROSS REFERENCE GUIDE



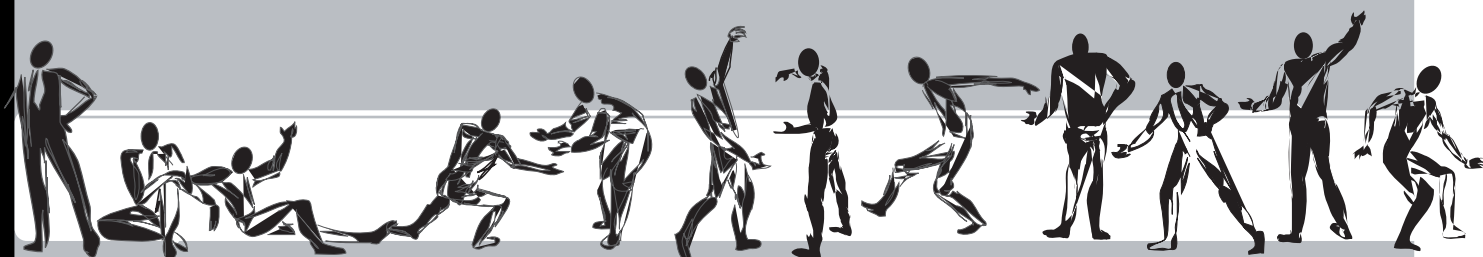
MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	A / B	SQUARE D	SIEMENS	OTHER
211ACPSOX-3		700HT12BA24	9050JCK15V14	OND-0110-24A	
W211CPSOX-3	CDD-38-30005	700HT12BZ24			7268K35 (McMASTER CAR)
	CHD-38-30003				
	CB-38-70014				
211ACPSRX-8					SS51622-12 (MACROMATIC)
211ACPSRX-60			9050JCK26V20		T3K-00010-461 (NCC)
MAGNECRAFT & STRUTHERS-DUNN	SQUARE D	A / B	McMASTER CAR	GRAINGER	
W222ACPF-16			7630K17		
W222ACPF-27	9050JCK57V20	700HV32DA1			
W222ACPF-11	9050JCK51V20	700HV32AA1	7630K12		1A366
222CPFX-11		700HV32AZ24			
MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	A / B	MIDTEX	CUTLER HAMMER	
W388ACPSOX-1	CLF-41-70010				
W388ACPSOX-2			614-12T400		
W388CPSOX-1	CLH-41-70010				
W388CPSOX-2			614-12C400		
W388CPSRX-22	CUA-42-70010		612-12C400		
W388ACPSOX-42	CUA-51-70010	700HS12AA1	612-43T100		
W388ACPSOX-44		700HS12BA1	614-43T400		
W388CPSRX-2		700HS22AZ24	612-43C100		MTON1B120A
W388CPSRX-4		700HS22BZ24	612-43C400		MTON2B120A
W388CPSRX-35			612-43T400		MTON2B120A
W388ACQSOX-1	CLF-42-70010				
MAGNECRAFT & STRUTHERS-DUNN	POTTER & BRUMFIELD	FOR TIME DELAY RELAYS APPLICATION ENGINEERING ASSISTANCE Scott Heilman, PRODUCT MANAGER FAX: (843) 395-8530 EMAIL: sheilman@magnecraft.com			
W67CPSOX-1	R123012X2E1				
W67CPSOX-2	R123024X2E1				
MAGNECRAFT & STRUTHERS-DUNN	GRAINGER				
W236CPX-1	5Z564				
W236ACPX-1	5Z562				

U. S. A.

MAGNECRAFT & STRUTHERS-DUNN
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CONSTRUCTION FEATURES AND GENERAL SPECIFICATIONS SHOULD BE COMPARED IF EXACT REPLACEMENT IS REQUIRED.