

NEMA 7 Compressor Panel

Submittal for NEMA 7 Control Panel

Prepared by:

Your Company

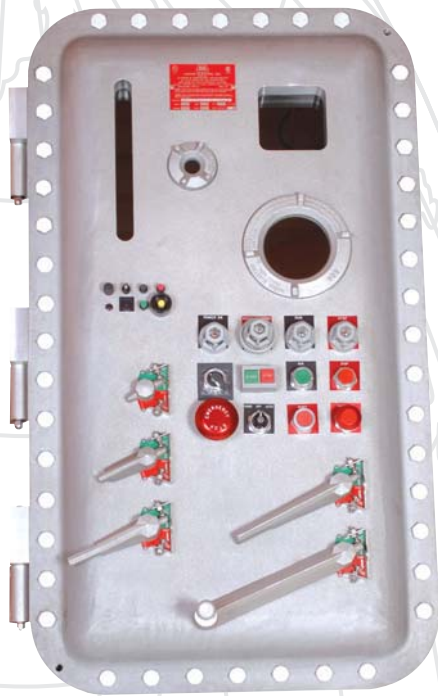
Your Address

Panel Job: 2013-376

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- A. Datasheets - Enclosures / Accessories**
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Explosion-Proof Control Stations "CXJ" Series



Over 75 Sizes Available For Hazardous Locations

Applications:

Applications where hazardous gases, vapors, liquids, flammable fibers, flyings or combustible dusts can exist during the time of operation

Locations including Oil / Petroleum Refineries, Waste Water Treatment Plants, Petrochemical Plants, Mining Facilities, etc.

Control Stations are used for electrical components installed directly in the enclosure and they are capable of being drilled and tapped.

These components can be controlled or viewed in hazardous environments (indoor & outdoor)

ATEX Certification: (Optional)

If ATEX certification is required, please specify.

Add "-CEN" to Part Number to designate ATEX. (Optional)

Certain Features are added to the CXJ Series if ATEX is required:

- Metric Cover Bolts
- External Ground Screw
- If NEMA 4 O-Ring is required, IP 66 Rating Applies

"This is the highest quality enclosure made in the industry. Our quality matched by our quick ship program gets the job done."

Features:

External Machined Flange Joint Design

Integral Cast Mounting Feet

Machined Surface Perimeter for ease of hinge installation

(N5) Stainless Steel or (E3) Triple Lead Stainless Steel
Captive Quick Thread Cover Bolts (Optional-Domestic Only)

Ground Lug Package (Optional)

Cast Mounting Pan Bosses

All enclosures suitable for drilling and tapping

Stainless Steel Shot Blast or Sandblasted natural finish

Standard round or custom sized windows available

Cast aluminum and stainless steel hinge (optional)

All enclosures suitable for NEMA 4X (optional), **specify when required**

Materials:

Enclosures: Copper-free Aluminum (less than 0.25% copper content)

Cover Bolts: Cad-Plated (Standard) or Stainless Steel N5 / E3 (Specify)

Hinges: Stainless Steel or Medium to Heavy Duty Cast Aluminum

Mounting Pan (Opt.): Aluminum*;

Gal. Steel or Phenolic Materials available upon request.

*Note: Aluminum Mounting Pan will be provided if mounting pan is requested, unless otherwise noted.



Certificate
Number
03.059.1

ISO
9001 With Design

Approvals:

UL CLASSIFIED - Standard 1203, UL-E139669

UL CLASSIFIED - With Viewing window - UL E14600 (meter enclosure)

cUL (Canada) - Standard C22.2 No. 30-M1986 & No. 25-1966

CSA Certified (Canada) - Standard C22.2 - No. LR86146

Compliances:

CL. I, Div. 1 & 2 Groups B, C & D

CL. II, Div. 1 & 2 Groups E, F & G

CL. III

NEMA 3, 4X (Optional), 7 & 9



ATEX

DEMKO OS ATEX 05 ATEX0419382U (Empty Housing)

Exd IIB+H2; IP66 (With O-Ring) II2d Tamb - 55 degree C to 100 degree C

EN 60079-0, -1; EN 60529



Explosion-Proof Control Stations "CXJ" Series

CATALOG NUMBER	INSIDE DIMENSIONS (INCHES)				OUTSIDE DIMENSIONS (INCHES)			MOUNTING (INCHES)		MTG. PAN	MTG. PAN DIM.	HINGE CAT. # *	ATEX Optional ADDER	LUG BOLT SIZE (IN.)	MAX. CONDUIT (INCHES)	EST. WEIGHT (LBS.)	
	W	L	D	Dc	A	B	C	E	F								Available Depth**
4164	4	16	4	1	8	20	6-1/2	12-1/8	6-3/4	N1	3	15	H1/HC1	-CEN	3/8	2	33
664	6	6	4	1	9-3/4	9-3/4	6-1/4	5-1/8	9-1/8	N1	5	5	H1/HC1	-CEN	3/8	2	17
684	6	8	4	1	9-3/4	11-3/4	6-7/16	4-1/2	9-1/8	N1	5	7	H1/HC1	-CEN	3/8	2	23
685	6	8	5	1	9-3/4	11-3/4	7-7/16	4-1/2	9-1/8	N1	5	7	H1/HC1	-CEN	3/8	2	25
686	6	8	6	1	9-3/4	11-3/4	8-7/16	4-1/2	9-1/8	N1	5	7	H1/HC1	-CEN	3/8	2	26
6104	6	10	4	1	10	14	6-3/8	6-1/2	9-1/8	N1	5	9	H1/HC1	-CEN	3/8	2	26
6115	6	11	5	1	10	15	7-7/16	8	9-1/8	N1	5	10	H1/HC1	-CEN	3/8	2	29
6124	6	12	4	1	10	16	6-7/16	8-1/2	9-1/8	N1	5	11	H1/HC1	-CEN	3/8	2	30
6126	6	12	6	1	10	16	8-7/16	8-1/2	9-1/8	N1	5	11	H1/HC1	-CEN	3/8	2	36
6135	6	13	5	1	10	17	7-7/16	9-1/2	9-1/8	N1	5	12	H1/HC1	-CEN	3/8	2	34
6164	6	16	4	1	10-1/2	20-1/2	6-9/16	12-1/8	9-1/8	N1	5	15	H1/HC1	-CEN	3/8	2	42
6186	6	18	6	1-1/2	10-1/2	22-1/2	9-1/16	13-1/8	9-1/8	N1	5	17	H1/HC1	-CEN	3/8	3	46
#6485	6	48	5	1	10	52	7-3/4	40	8	N1	5	46	3H1/3HC1	-CEN	3/8	2	109
7104	7	10	4	1	11-1/2	14-1/2	6-9/16	6-1/2	9-3/4	N1	6	9	H1/HC1	-CEN	3/8	2	20
7106	7	10	6	1	11-1/2	14-1/2	8-9/16	6-1/2	9-3/4	N1	6	9	H1/HC1	-CEN	3/8	3	25
7185	7	18	5	1	11-1/2	22-1/2	7-9/16	14-1/2	9-3/4	N1	6	17	H1/HC1	-CEN	3/8	2	60
884	8	8	4	1	12-1/2	12-1/2	6-9/16	4-1/2	10-3/4	N1	6-1/2	6-1/2	H1/HC1	-CEN	3/8	2	33
886	8	8	6	1	12-1/2	12-1/2	8-9/16	4-1/2	10-3/4	N1	6-1/2	6-1/2	H1/HC1	-CEN	3/8	3	36
888	8	8	8	1	12-1/2	12-1/2	10-9/16	4-1/2	10-3/4	N1	6-1/2	6-1/2	H1/HC1	-CEN	3/8	4	39
8104	8	10	4	1	12-1/2	14-1/2	6-9/16	6-1/2	10-3/4	N1	6-1/4	8-1/4	H1/HC1	-CEN	3/8	2	36
8106	8	10	6	1	12-1/2	14-1/2	8-9/16	6-1/2	10-3/4	N1	6-1/4	8-1/4	H1/HC1	-CEN	3/8	3	41
8108	8	10	8	1	12-1/2	14-1/2	10-9/16	6-1/2	10-3/4	N1	6-1/4	8-1/4	H1/HC1	-CEN	3/8	4	46
8124	8	12	4	1	12-1/2	16-1/2	6-9/16	8-5/8	10-3/4	N1	6-1/2	10-1/2	H1/HC1	-CEN	3/8	2	41
8126	8	12	6	1	12-1/2	16-1/2	8-9/16	8-5/8	10-3/4	N1	6-1/2	10-1/2	H1/HC1	-CEN	3/8	3	46
8128	8	12	8	1	12-1/2	16-1/2	10-9/16	8-5/8	10-3/4	N1	6-1/2	10-1/2	H1/HC1	-CEN	3/8	4	50
9115	9	11	5	1	13-1/2	15-1/2	7-9/16	6	13-1/8	N1	7-1/2	9-1/2	H1/HC1	-CEN	3/8	2	46
10104	10	10	4	1	14-1/2	14-1/2	6-3/4	6-1/2	13	N1	8-1/2	8-1/2	H1/HC1	-CEN	3/8	2	40
10106	10	10	6	1	14-1/2	14-1/2	8-3/4	6-1/2	13	N1	8-1/2	8-1/2	H1/HC1	-CEN	3/8	3	50
10108	10	10	8	1	14-1/2	14-1/2	10-3/4	6-1/2	13	N1	8-1/2	8-1/2	H1/HC1	-CEN	3/8	4	57
10144	10	14	4	1-1/2	14-1/2	18-1/2	7-3/16	10-5/8	13	N1	8	12	H1/HC1	-CEN	3/8	2	60
10146	10	14	6	1-1/2	14-1/2	18-1/2	9-3/16	10-5/8	13	N1	8	12	H1/HC1	-CEN	3/8	3	68
10148	10	14	8	1-1/2	14-1/2	18-1/2	11-3/16	10-5/8	13	N1	8	12	H1/HC1	-CEN	3/8	4	75
12124	12	12	4	1-1/2	17	17	7-1/2	8-5/8	15-3/4	N1	10	10	H1/HC1	-CEN	1/2	2	70
12126	12	12	6	1-1/2	17	17	9-1/2	8-5/8	15-3/4	N1	10	10	H1/HC1	-CEN	1/2	3	77
12126LW	12	12	6	1-5/16	16	16	8-7/8	8-5/8	15-3/4	N1	10	10	H1/HC1	-CEN	1/2	4	58
12128	12	12	8	1-1/2	17	17	11-1/2	8-5/8	15-3/4	N1	10	10	H1/HC1	-CEN	1/2	4	87
12184	12	18	4	1-1/2	17	23	7-1/2	14-1/8	15-3/4	N1	10	16	H2	-CEN	1/2	2	102
12186	12	18	6	1-1/2	17	23	9-1/2	14-1/8	15-3/4	N1	12	16	H2	-CEN	1/2	3	116
12188	12	18	8	1-1/2	17	23	11-1/2	14-1/8	15-3/4	N1	12	16	H2	-CEN	1/2	4	120
12205	12	20	5	1-1/2	17	25	8-1/2	14-3/8	15-3/4	N1	10	18	H2	-CEN	1/2	2	111
12244	12	24	4	1-1/2	17-1/8	29-1/8	7-5/8	18-3/4	15-3/4	N1	10	22	H2	-CEN	1/2	2	126
12246	12	24	6	1-1/2	17-1/8	29-1/8	9-5/8	18-3/4	15-3/4	N1	10	22	H2	-CEN	1/2	3	142
12248	12	24	8	1-1/2	17-1/8	29-1/8	11-5/8	18-3/4	15-3/4	N1	10	22	H2	-CEN	1/2	4	154
122410	12	24	10	1-1/2	17-1/8	29-1/8	13-5/8	18-3/4	15-3/4	N1	10	22	H2	-CEN	1/2	4	165
12306	12	30	6	1-1/2	17	35	9-5/8	23	15-3/4	N1	10	28	H2	-CEN	1/2	3	177

* Note: (H1) = Stainless Steel Modular Hinge; (HC1, H2) = Cast Aluminum Hinge (H1/HC1 - Choose one of these when required)

** Available Depth = D + Dc

1025 Eagon Street Barberton, Ohio 44203 Ph: 330-745-8891 Fax: 330-745-2504
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Explosion-Proof Control Stations "CXJ" Series

CATALOG NUMBER	INSIDE DIMENSIONS (INCHES)				OUTSIDE DIMENSIONS (INCHES)			MOUNTING (INCHES)		MTG. PAN	MTG. PAN DIM.		HINGE CAT. # *	ATEX Optional ADDER	LUG BOLT SIZE (IN.)	MAX. CONDUIT (INCHES)	EST. WEIGHT (LBS.)
	W	L	D	Dc	A	B	C	E	F		---	W					
	Available Depth**																
CXJ	W	L	D	Dc	A	B	C	E	F	---	W	H	---	---	G	---	---
12364	12	36	4	1-1/2	17	41	7-5/8	29	15-3/4	N1	10	34	3H2	-CEN	1/2	2	197
12366	12	36	6	1-1/2	17	41	9-5/8	29	15-3/4	N1	10	34	3H2	-CEN	1/2	3	210
12368	12	36	8	1-1/2	17	41	11-5/8	29	15-3/4	N1	10	34	3H2	-CEN	1/2	4	222
*12468	12	46	8	1-1/2	17-1/8	51-1/8	11-5/8	15-3/4	39	N1	10	44	3H2	-CEN	1/2	4	260
14144	14	14	4	1-1/2	19-1/8	19-1/8	7-1/2	9-3/4	17-1/2	N1	12	12	H2	-CEN	1/2	2	83
14146	14	14	6	1-1/2	19-1/8	19-1/8	9-1/2	9-3/4	17-3/4	N1	12	12	H2	-CEN	1/2	3	94
14148	14	14	8	1-1/2	19-1/8	19-1/8	11-1/2	9-3/4	17-3/4	N1	12	12	H2	-CEN	1/2	4	104
14286	14	28	6	1-1/2	19-1/8	33-1/8	9-1/2	22-1/2	17-3/4	N1	12	26	H2	-CEN	1/2	3	153
16164	16	16	4	1-1/2	21-1/8	21-1/8	7-5/8	11	19-3/4	N1	14	14	H2	-CEN	5/8	2	103
16166	16	16	6	1-1/2	21-1/8	21-1/8	9-5/8	11	19-3/4	N1	14	14	H2	-CEN	5/8	3	120
16168	16	16	8	1-1/2	21-1/8	21-1/8	11-5/8	11	19-3/4	N1	14	14	H2	-CEN	5/8	4	143
*161812	16	18	12	1/4	21-61/64	23-1/8	14-3/4	13-11/64	19-3/4	N1	15	16	H2	N/A	5/8	4	
16246	16	24	6	1-1/2	21-1/8	29-1/8	9-7/8	8-3/8	19-3/4	N1	14	22	H2	-CEN	5/8	3	174
16248	16	24	8	1-1/2	21-1/8	29-1/8	11-7/8	18-3/8	19-3/4	N1	14	22	H2	-CEN	5/8	4	194
162410	16	24	10	1-1/2	21-1/8	29-1/8	13-7/8	18-3/8	19-3/4	N1	14	22	H2	-CEN	5/8	4	212
*164610	16	46	10	1-1/2	21-1/8	51-1/8	13-3/4	39	19-3/4	N1	14	44	3H2	-CEN	5/8	4	370
18184	18	18	4	1-1/2	23-1/8	23-1/8	8	13	21-3/4	N1	16	16	H2	-CEN	5/8	2	131
18186	18	18	6	1-1/2	23-1/8	23-1/8	10	13	21-3/4	N1	16	16	H2	-CEN	5/8	3	149
18188	18	18	8	1-1/2	23-1/8	23-1/8	12-3/8	13	21-3/4	N1	16	16	H2	-CEN	5/8	4	176
18246	18	24	6	1-1/2	23-1/8	29-1/8	9-7/8	18-3/8	21-3/4	N1	16	22	H2	-CEN	5/8	3	193
18248	18	24	8	1-1/2	23-1/8	29-1/8	11-7/8	18-3/8	21-3/4	N1	16	22	H2	-CEN	5/8	4	210
182410	18	24	10	1-1/2	23-1/8	29-1/8	13-7/8	18-3/8	21-3/4	N1	16	22	H2	-CEN	5/8	4	234
*182412	18	24	12	1/4	23-5/8	29-3/8	14-13/16	19-11/64	21-3/4	N1	16	22	H2	N/A	5/8	4	
18308	18	30	8	1-1/2	23-1/8	35-1/8	11-7/8	23	21-3/4	N1	16	28	H2	-CEN	5/8	4	268
18368	18	36	8	1-1/2	23-1/2	41-1/2	12-7/16	30	21-3/4	N1	14	32	3H3	-CEN	5/8	4	410
183610	18	36	10	1-1/2	23-1/2	41-1/2	14-1/4	29	21-3/4	N1	14	32	3H3	-CEN	5/8	4	436
24248	24	24	8	1-1/2	29-1/2	29-1/2	12-1/8	18-3/8	28	N1	20	20	H3	-CEN	5/8	4	306
242410	24	24	10	1-1/2	29-1/2	29-1/2	14-1/8	18-3/8	28	N1	20	20	H3	-CEN	5/8	4	320
24308	24	30	8	1-1/2	29-1/8	35-1/8	11-7/8	23	28	N1	22	28	H3	-CEN	5/8	4	306
24368	24	36	8	1-1/2	30	42	12-9/16	29	28	N1	22	28	3H3	-CEN	5/8	4	471
243610	24	36	10	1-1/2	30	42	14-9/16	29	28	N1	20	32	3H3	-CEN	5/8	4	501
#323612	32	36	6	6	38-1/4	42-1/4	15-7/8	29	36	N1	30	34	3H3	N/A	5/8	4	600
#346810	34	68	5	5	40	74	17-1/8	54	42-1/2	N1	34	64	4H3	N/A	5/8	2	1160
*38388	38	38	8	2	44	44	16-1/8	24	46	N1	36	36	3H3	N/A	5/8	4	840
#383816	38	38	16	0	44	44	23	24	46	N1	36	36	3H3	N/A	5/8	4	900

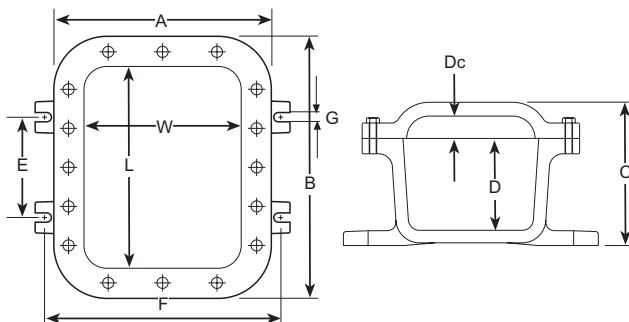
Note: (H2, H3) = Cast Aluminum Hinge

NEMA 4X, 7, 9 enclosures are designed to third party specifications. These boxes carry no formal listings.

* UL / cUL Only enclosures only - (no CSA certification)

** Available Depth = D + Dc

All Dimensions are for Reference Only - C/F for questions regarding design dimensional data



- Consult Factory if larger Mounting Pan is needed
- Mounting feet will be aligned right & left (as shown) unless otherwise specified.
- 9 x 11 x 5 Mounting Feet are top & bottom std.
- For an enclosure size not listed above or a special application, contact Akron Electric.
- All conduit runs must be sealed within 6 inches of the enclosure.
- Note: Enclosures have internal taper (draft) of 1/16" per inch of depth *(dimensions "W" and "L" are across top of base).
- Hinges and mounting pans are not included as standard.
- See pages 55-66 for ordering information, modifications and conduit working area.

Explosion-Proof Pilot Devices

Nema Type 4, 4X, 7 & 9

2 & 3 Position Selector Switches

Specifications

XP **2** - **S** **CC** - **AE1** - **FS** (-CEN)
a b c d e f g h ATEX Optional

a = Switch Type

Code	Description
Blank	Standard
K	Keyed

b = Number of Positions

Code	Description
2	Two Position Switch
3	Three Position Switch

C/F for Selector Switches with greater than 3 positions

c = Sequence

Code	Description
S	Maintained
C	Return to Center
R	Return From Left
L	Return From Right

d = Barrel Type

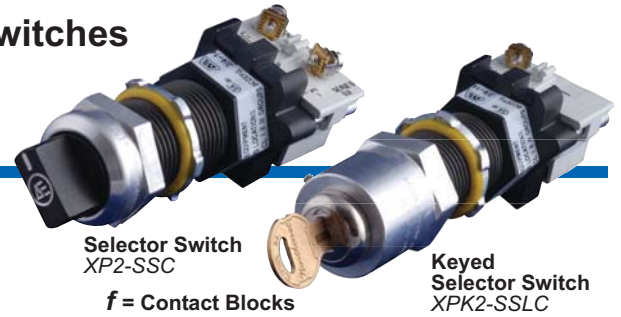
Code	Description
S	Short Barrel
L	Long Barrel

e = Key Removal Position

Code	Description
Blank	No Key
C	Center Removal
R	Right Removal
L	Left Removal

g = Unique Key Configurations

Code	Description
AE1	Key #1
AE2	Key #2
AE3	Key #3



Selector Switch
XP2-SSC

Keyed
Selector Switch
XPK2-SSLC

f = Contact Blocks

Code	Description
Blank	No Contacts
A	1 N.O.
B	1 N.C.
2A	2 N.O.
2B	2 N.C.
C	1 N.O. / 1 N.C.
*D	2 N.O. / 2 N.C.
E	1 N.C.L.B.
F	1 N.O.E.M.
2E	2 N.C.L.B.
2F	2 N.O.E.M.
*G	1 N.O. / 1 N.C.L.B.
*H	1 N.C. / 1 N.C.L.B.
*J	3 N.O. / 3 N.C.
*K	4 N.O. / 4 N.C.
L	N.O.E.M.-N.C.
M	N.O.E.M.-N.O.
N	N.C.L.B.-N.O.E.M.
P	2 N.O. / 2 N.C. (300V)

h = Accessory

Code	Description
-FS	Finger Safe Options

N4= NEMA 4 locking collar is standard on all Akron Electric operators

3/4"-14 NPSM standard thread

CONTACT ABBREVIATION

N.O.= Normally Open
 N.C.= Normally Closed
 N.C.L.B.= Normally Closed- Late Break
 N.O.E.M.= Normally Open- Early Make

All contact blocks are rated 600V unless noted.

Consult factory for switching sequences with multiple contacts. Up to four contacts may be stacked.

See Cam Page for Reference to Switching Sequences.

Pushbuttons can also be used with Allen Bradley or C3 Controls contact blocks. (C/F)

*Denotes multiple block configuration



Explosion-Proof Pilot Devices

Nema Type 4, 4X, 7 & 9

XP 2 & 3 Selector Switch Operators (Keyed & Non-Keyed) Dimensional Data

Dimensions (Inches [mm])

Note: All dimensions are for reference only
CLASS I, Div 1 & 2, GROUPS B, C & D;
CLASS II, Div 1 & 2, GROUPS E, F & G;
CLASS III,
NEMA TYPE 4, 4X, 7 & 9

UL 698 Industrial Control Equipment in Hazardous (Classified) Locations.

UL 1203 Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations.

CSA C22.2 No. 30-LR86146 Explosion-Proof Enclosures for use in Class I Hazardous locations.



FILE NO. E203605
 FILE NO. E181300
 FILE NO. E139669

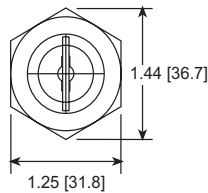
LR86146

(Optional)

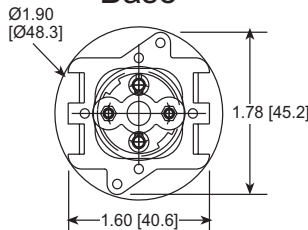
FEATURES

- Operator bodies are black anodized & teflon impregnated.
- Operating Shafts are stainless steel.
- 3/4-14 NPSM threaded body size
- **Long Series:** Accommodates up to 2-1/2" thick enclosure wall thickness.
- **Short Series:** Accommodates up to 1" thick enclosure wall thickness.
- Explosion-Proof Operators are suitable for panel or surface mount applications.
- See Contact Block Information sheet for mounting and rating information.
- Selector Switches available in 2 or 3 positions (For Keyed - specify key removal position)
- Three unique key configurations available - Specify AE1, AE2, or AE3

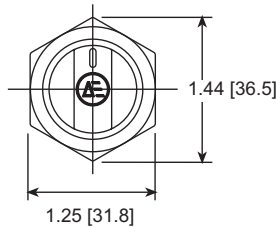
Guard



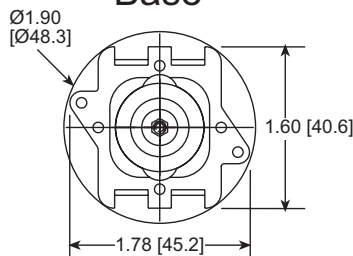
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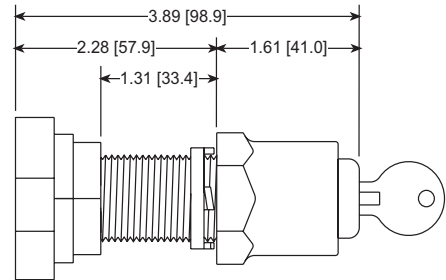
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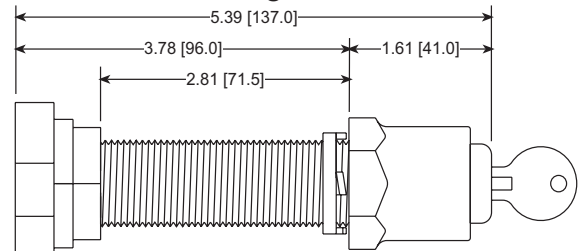
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Short Barrel

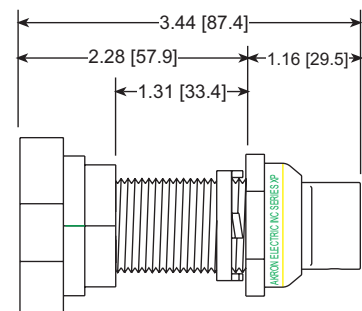


Long Barrel

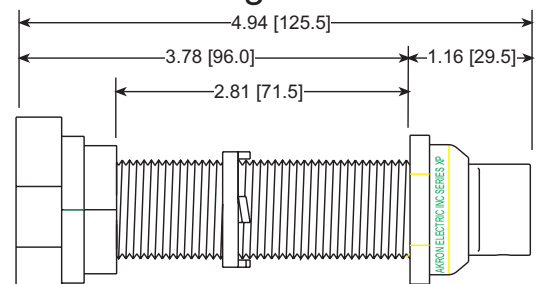


Keyed Selector Switch
ex. XPK2-SSL

Short Barrel



Long Barrel



Selector Switch
ex. XP2-SS

Explosion-Proof Selector Switches

Nema Type 4, 4X, 7 & 9

Selector Switch Contact Sequence Chart

Contact Block Switching Sequences (Standard Installation)

AE SUFFIX	CONTACT BLOCK (AE)	CONTACT BLOCK (CH)	CIRCUIT OF CONTACT BLOCK	MTG POS.	2 POSITION		3 POSITION						
					CAM 1	CAM 2	CAM 3	CAM 4	CAM 5	CAM 6			
KNOB POSITION →					L	R	L	C	R	L	C	R	
"A"	2003ABB	10250T53	1 N.O.	A	O	X	O	O	X	X	O	O	X
"B"	2003AAB	10250T51	1 N.C.	A	X	O	X	X	O	O	X	O	O
"2A"	2003AEB	10250T2	1 N.O. 1 N.O.	A	O	X	O	O	X	X	O	O	X
				B	O	X	X	O	X	O	X	X	O	O
"2B"	2003ADB	10250T3	1 N.C. 1 N.C.	A	X	O	X	X	O	X	X	O	O
				B	X	O	O	X	O	X	X	O	O
"C"	2003ACB	10250T1	1 N.C. 1 N.O.	A	X	O	X	X	O	X	X	O	O
				B	O	X	X	O	X	O	X	X	O
"D"	(2) 2003ACB	(2) 10250T1	2 N.C. 2 N.O.	A	X	O	X	X	O	X	X	O	O
				B	O	X	X	O	X	O	X	X	O
"E"	2003AGB	10250T71	1 N.C.L.B	A	X	O	X	X	O	O	X	O	
"2E"	2003AHB	10250T45	1 N.C.L.B. 1 N.C.L.B.	A	X	O	X	X	O	X	X	O	O
				B	X	O	O	X	O	X	O	X	X	O
"J"	(3) 2003ACB	(3) 10250T1	3 N.C. 3 N.O.	A	X	O	X	X	O	X	X	O	O
				B	O	X	X	O	X	O	X	X	O	O
"K"	(4) 2003ACB	(4) 10250T1	4 N.C. 4 N.O.	A	X	O	X	X	O	X	X	O	O
				B	O	X	X	O	X	O	X	X	O	O
"L"	2003AJB	10250T47	1 E.C.N.O. 1 N.C.	A	O	X	O	O	X	X	O	X	O
				B	X	O	O	X	O	X	O	X	X	O
"M"	2003AKB	10250T57	1 E.C.N.O. 1	A	O	X	O	O	X	X	O	X	O
				B	O	X	X	O	X	O	X	X	O	O
"N"	2003ALB	10250T55	1 L.O.N.C. 1 E.C.N.O.	A	X	O	X	X	O	X	X	O	X
				B	O	X	X	O	X	O	X	X	O	X
"P"	2003AFB -RATED- -300V	10250T44 -RATED- -300V	1 N.C. 1 N.O. 1 N.C. 1 N.O.	A	X	O	X	X	O	X	X	O	O
				A	O	X	O	O	X	X	O	X	X
				B	X	O	O	X	X	O	X	X	O
				B	O	X	X	O	X	X	O	X	X

Inverted Contact Blocks (Rotated 180° from Standard)

AE SUFFIX	CONTACT BLOCK (AE)	CONTACT BLOCK (CH)	CIRCUIT OF CONTACT BLOCK	MTG POS.	2 POSITION		3 POSITION						
					CAM 1	CAM 2	CAM 3	CAM 4	CAM 5	CAM 6			
KNOB POSITION →					L	R	L	C	R	L	C	R	
"A*"	2003ABB	10250T53	1 N.O.	B	O	X	X	O	X	O	X	X	O
"B*"	2003AAB	10250T51	1 N.C.	B	X	O	O	X	O	X	O	O	X
"E*"	2003AGB	10250T71	1 N.C.L.B	B	X	O	O	X	O	X	O	O	X
"C*"	2003ACB	10250T1	1 N.O. 1 N.C.	A	O	X	O	O	X	X	O	X	O
				B	X	O	O	X	O	X	O	X	X
"D*"	(2) 2003ACB	(2) 10250T1	2 N.O. 2 N.C.	A	O	X	O	O	X	X	O	X	O
				B	X	O	O	X	X	O	X	X	O
"J*"	(3) 2003ACB	(3) 10250T1	3 N.O. 3 N.C.	A	O	X	O	O	X	X	O	X	O
				B	X	O	O	X	X	O	X	X	O
"K*"	(4) 2003ACB	(4) 10250T1	4 N.O. 4 N.C.	A	O	X	O	O	X	X	O	X	O
				B	X	O	O	X	X	O	X	X	O
"L*"	2003AJB	10250T47	1 L.O.N.C. 1 E.C.N.O.	A	X	O	X	X	O	X	X	O	O
				B	O	X	X	O	X	O	X	X	O
"M*"	2003AKB	10250T57	1 N.O. 1 E.C.N.O.	A	O	X	O	O	X	X	O	X	O
				B	O	X	X	O	X	O	X	X	O
"N*"	2003ALB	10250T55	1 E.C.N.O. 1 L.O.N.C.	A	O	X	O	O	X	X	O	X	O
				B	X	O	O	X	X	O	X	X	O

Note: Please consult our Engineering Department for assistance with the interpretation of this chart

HPB Series Edison Open-Style Power Distribution Blocks

Open-style power distribution blocks for cable termination

Edison open-style power distribution blocks are a convenient way to manage your power distribution needs. They are engineered to maintain a high SCCR rating of 200kA with copper conductors making these distribution blocks the ideal solution to today's power circuit wiring needs.



Features

- Suitable for industrial control panel applications requiring high SCCR ratings
- Suitable for installation in wireways (with optional cover, per NEC 376.56 (B))
- Has minimum spacing requirements at 600VAC/DC of at least 1" through air and 2" over surface which meets UL 1953 requirements
- Used in UL508A panels
- Meets UL508A requirements and can be used in feeder and branch circuit applications
- Tin-plated aluminum connectors suitable for copper conductors
- Available safety covers for greater protection (purchase separately)
- Suitable for both factory and field wiring
- Panel mounting

Ratings

- Ampere ratings up to 310 Amps
- 600 VAC or VDC
- Short Circuit Current Rating (SCCR) up to 200kA with proper fusing (See short circuit rating data table)
- Flammability: UL 94V0

Agency Approvals

- UL Listed - File E333541 Guide QPQS
- CE

Standards

- UL1953

Open-Style Power Distribution Blocks Selection Table							
Series	Part Number	Amps	Description	SCCR Rtg	Pcs/Pkg	Wt.	Price
HPB Series	HPB101-1	175 max	1 pole distribution block, 1 in/1 out	200kA	1	0.2 lb	<--->
	HPB101-3	175 max	3 pole distribution block, 1 in/1 out	200kA	1	0.8 lb	<--->
	HPB104-1	175 max	1 pole distribution block, 1 in/4 out	200kA	1	0.2 lb	<--->
	HPB104-3	175 max	3 pole distribution block, 1 in/4 out	200kA	1	0.8 lb	<--->
	HPB10S-1	175 max	1 pole distribution block, 1 in/stud out	200kA	1	0.6 lb	<--->
	HPB10S-3	175 max	3 pole distribution block, 1 in/stud out	200kA	1	1.0 lb	<--->
	HPB106-1	175 max	1 pole distribution block, 1 in/6 out	200kA	1	1.4 lb	<--->
	HPB106-2	175 max	2 pole distribution block, 1 in/6 out	200kA	1	0.2 lb	<--->
	HPB106-3	175 max	3 pole distribution block, 1 in/6 out	200kA	1	0.8 lb	<--->
	HPB306-1	310 max	1 pole distribution block, 1 in/6 out	200kA	1	0.7 lb	<--->
	HPB306-3	310 max	3 pole distribution block, 1 in/6 out	200kA	1	2.9 lb	<--->
	HPB309-1	310 max	1 pole distribution block, 1 in/9 out	200kA	1	0.8 lb	<--->
	HPB309-3	310 max	3 pole distribution block, 1 in/9 out	200kA	1	3.0 lb	<--->
	HPB312-1	310 max	1 pole distribution block, 1 in/12 out	200kA	1	0.8 lb	<--->
HPB312-3	310 max	3 pole distribution block, 1 in/12 out	200kA	1	3.2 lb	<--->	



HPB104-1



HPB10S-3



HPB106-3



HPB309-1



HPB312-3

Open-Style Power Distribution Block General Specifications	
Wire type	75°C* Copper
Voltage	600 VAC or VDC maximum
Mounting	Surface mount
*Note: Amp Rating based on NEC table 310.16 for 75°C copper wire.	

Optional Covers

Covers are ordered for each individual pole, i.e., three 1-pole covers for 3-pole block, see Table A. Except HPB106 blocks have one cover for 1-, 2-, or 3-pole versions, see Table B. (Shipped with mounting screws)

Table A	
Block	Cover
HPB1XX-(pole)	PBC21
HPB3XX-(pole)	PBC31

Table B	
Block	Cover
HPB106-1	PBC31
HPB106-2	PBC32
HPB106-3	PBC33

Features

Four adjustment pots provide versatility for all kinds of applications.

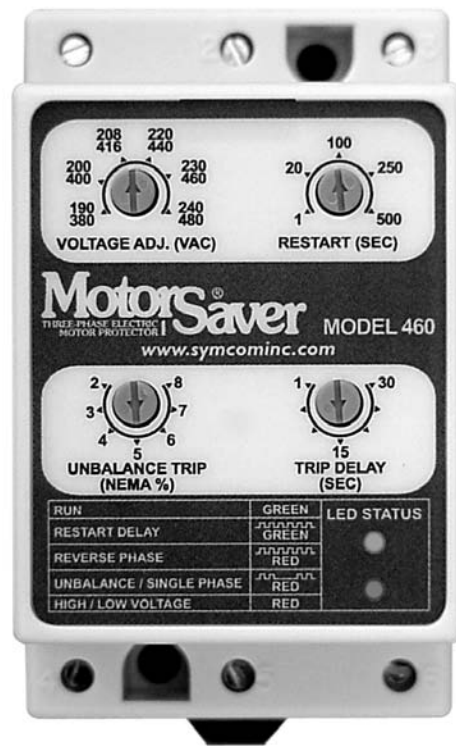
Universal range from 190-480 VAC 50/60 Hz provides the versatility needed to handle global applications.

Diagnostic LEDs indicate trip status and make trouble shooting a snap.

Microcontroller based circuitry provides better accuracy and higher reliability than analog designs.

Transient protected to meet IEEE and IEC standards to stand up under tough conditions.

Will detect single phase condition regardless of regenerated voltages.



Motorsaver
THREE-PHASE ELECTRIC
MOTOR PROTECTOR

Model 460

Three Phase Voltage Monitor

Engineered Protection

Microcontroller Based

Protects 3-Phase motors from:

- Loss of any Phase
- Low Voltage
- High Voltage
- Voltage Unbalance
- Phase Reversal
- Rapid Cycling

Additional Features:

- Compact Design
- UL and cUL listed
- CE Compliant
- Finger Safe Terminals
- 5 year Warranty
- Made in USA
- Standard Surface or DIN Rail Mount
- Standard 1-500 sec. Variable Restart Delay
- Standard 2-8% Adj. Voltage Unbalance
- Standard Trip Delay 1-30 sec.
- One 10 Amp General Purpose Form C Relay

The **Model 460** is designed to protect 3-phase loads from damaging power conditions. The 460's wide operating range combined with UL and CE compliance enables quick access to domestic and global markets.

A unique microcontroller-based voltage and phase sensing circuit constantly monitors the three phase voltages to detect harmful power line conditions. When a harmful condition is detected, the MotorSaver's output relay is deactivated after a specified trip delay. The output relay reactivates after power line conditions return to an acceptable level for a specified amount of time (Restart Delay). The trip and restart delays prevent nuisance tripping due to rapidly fluctuating power line conditions.

The Model 460 automatically senses whether it is connected to a 190 to 240V 60 Hz system, or a 440-480V 60 Hz system, or a 380 to 416V 50 Hz system. An adjustment is provided to set the nominal line voltage from 190-240 or 380-480 VAC. Other adjustments include a 1-30 second trip delay, a 1-500 second restart delay, and a voltage unbalance trip point adjustment from 2-8%.



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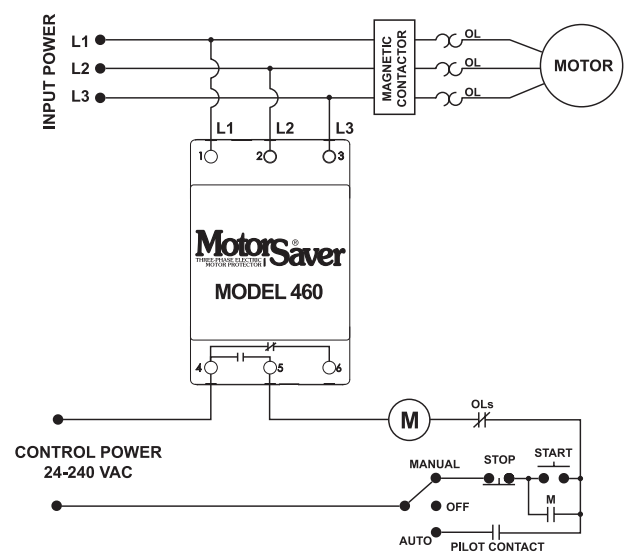
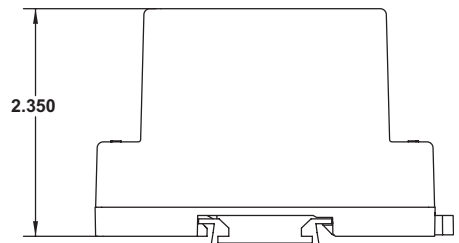
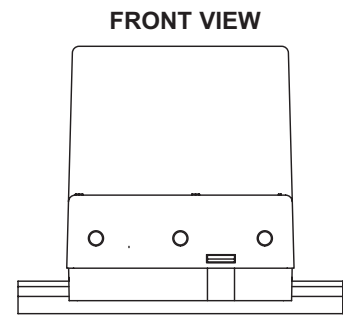
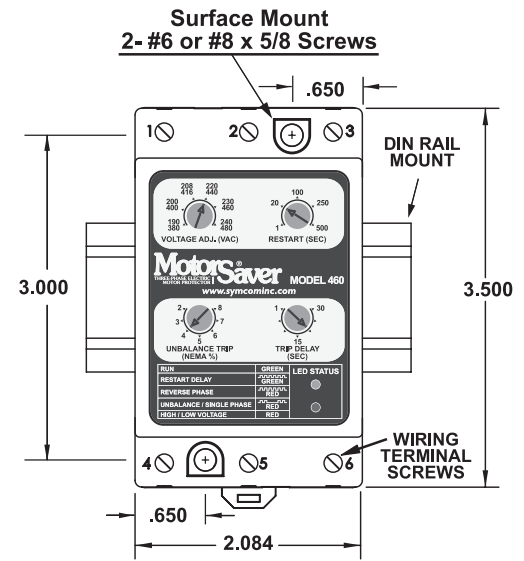
Model 460 Three Phase Voltage Monitor

Specifications

3-Phase Line Voltage	190 - 480 VAC (475 - 600 VAC Optional) (95 - 120 VAC Optional)
Frequency	50* or 60 Hz
Low Voltage (% of set point)	
• Trip	90% ±1%
• Reset	93% ±1%
High Voltage (% of set point)	
• Trip	110% ±1%
• Reset	107% ±1%
Voltage Unbalance (NEMA)	
• Trip	2 - 8% Adjustable
• Reset	Trip setting minus 1% (5 - 8%) Trip setting minus .5% (2 - 4%)
Trip Delay Time	
• Low & High Voltage and Unbalance	1 - 30 seconds adjustable
• Single Phasing Faults (>25% UB)	1 second fixed
Restart Delay Time	
• After a Fault	1 - 500 seconds adjustable
• After a Complete Power Loss	1 - 500 seconds adjustable
Output Contact Rating	
• 1-Form C	10 A General Purpose @240 VAC Pilot Duty 480VA @ 240 VAC, B300
Power Consumption	6 Watts (Max.)
Weight	14 oz.
Enclosure	polycarbonate
Terminal Torque .....	.6 in.-lbs.
Safety Marks	
• UL	UL508
• CE	IEC 60947-6-2
Standards Passed	
• Electrostatic Discharge (ESD)	IEC 1000-4-2, Level 3, 6kV contact, 8kV air
• Radio Frequency Immunity, Radiated	150 MHz, 10V/m
• Fast Transient Burst	IEC 1000-4-4, Level 3, 3.5 kV input power & controls
Surge	
• IEC	IEC 1000-4-5, Level 3, 4kV line-to-line; Level 4, 4kV line-to-ground
• ANSI/IEEE	C62.41 Surge and Ring Wave Compliance to a level of 6kV line-to-line
• Hi-potential Test	Meets UL508 (2 x rated V +1000V for 1 minute)
Environmental	
Temperature Range	Ambient Operating: -20° - 70° C (-4° - 158°F) Ambient Storage: -40° - 80° C (-40° - 176°F)
Class of Protection	IP20, NEMA 1 (FINGER SAFE)
Relative Humidity	10-95%, non-condensing per IEC 68-2-3

*Note: 50 Hz will increase all delay timers by 20%

SymCom warrants its microcontroller based products against defects in material or workmanship for a period of five (5) years from the date of manufacture. All other products manufactured by SymCom shall be warranted against defects in material and workmanship for a period of two (2) years from the date of manufacture. For complete information on warranty, liability, terms, returns, and cancellations, please refer to the SymCom Terms and Conditions of Sale document.

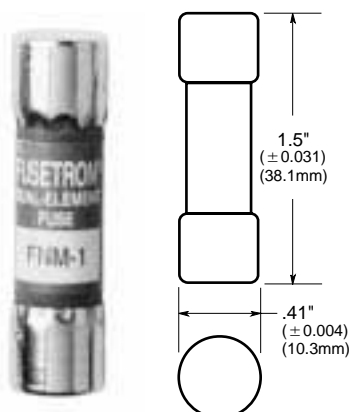


TYPICAL WIRING DIAGRAM

Time-Delay Ferrule Fuse

FNM

13/32" x 1-1/2"



- Fibre tube.
- For circuits with high inrush currents.
- Formerly designated 5AB.
- Fusetron® Dual-Element fuse.

Fuseblock Catalog Numbers

Poles	Terminal Type		
	Screw With Quick Connect	Pressure Plate w/Quick Connect	Box Lug
1	BM6031SQ	BM6031PQ	BM6031B
2	BM6032SQ	BM6032PQ	BM6032B
3	BM6033SQ	BM6033PQ	BM6033B

CATALOG SYMBOL: FNM
 TIME-DELAY
 1/10 TO 30 AMPERES
 INTERRUPTING RATING - SEE CHART BELOW
 UL LISTED: STD. 248-14, 0-10/250V AC; 12-15/125V AC
 FILE #E19180, GUIDE #JDYX
 CSA CERTIFIED: 1-10/250V AC; CLASS 1422-01,
 12-15/125V AC; FILE 53787
 DC RATING: 1-15A rated 125V DC and 1.6 KAIC.

Electrical Ratings (Catalog Symbol and Amperes)

250 Volts AC	IR	250 Volts AC	IR	250 Volts AC	IR	125 Volts AC
FNM-1/10		FNM-1-1/8		FNM-4		FNM-12 10,000
FNM-1/8		FNM-1-1/4		FNM-4-1/2		FNM-15 @ 125V AC
FNM-15/100		FNM-1-4/10		FNM-5		-
FNM-2/10		FNM-1-1/2		FNM-5-6/10		-
FNM-1/4	35A @	FNM-1-6/10	100A @	FNM-6		32 Volts AC
FNM-3/10	250VAC	FNM-1-8/10	250VAC	FNM-6-1/4	200A @	FNM-20
FNM-4/10	10,000	FNM-2	10,000	FNM-7	250VAC	FNM-25
FNM-1/2	@	FNM-2-1/4	@	FNM-8	10,000 @	FNM-30
FNM-6/10	125VAC	FNM-2-1/2	125VAC	FNM-9	125VAC	-
FNM-3/4		FNM-2-8/10		FNM-10		-
FNM-8/10		FNM-3		-		-
FNM-1		FNM-3-2/10		-		-
-		FNM-3-1/2		-		-

If 250V AC is needed for 12-30 amps, use FNW series.

Carton Quantity and Weight

Ampere Ratings	Carton Qty	Weight	
		Lbs.	Kg.
0-30	10	.125	.057

CE logo denotes compliance with European Union Low Voltage Directive (50-1000V AC, 75-1500V DC). Refer to BIF document #8002 or contact Bussmann Application Engineering at 636-527-1270 for more information.

Global Modular Fuse Holders

CH Series - 8x32, 10x38, 14x51, 22x58, Class CC

Specifications

Description: The 'CH' line of modular fuse holders accommodates many fuses from around the world, including North American Class-CC, Midget, Class gR, aR HSF, and IEC Industrial Ferrule (Class gG and aM) in four physical sizes: 8x32, 10x38, 14x51 and 22x58mm.

Agency Information: Manufactured in accordance with IEC 60269 and IEC 60947-3. Agency Compliance as indicated in the Catalog Numbers table.

Features/Benefits

- Optional open fuse indication (minimum 90Vac, 115Vdc for indicator lights)
- 14x51 & 22x58mm configurations available with optional micro-switches for remote open fuse indication, pre-breaking, and fuse presence
- Multi-phase connections available for ganging poles
- Low voltage indicating device available for CC and midget (48V)



Modular Fuse Holder Selection Table (10 x 38 and CC)

Part Numbers

Series Size	Catalog Numbers		Max Voltage & Current	UL	IEC	Phase Configuration	No. of 17.5mm Modules*	Box Qty.	Terminal Rating	SCCR Rating	Cooper Bussmann Fuses
	W/O Indication	W/Indication									
CHCC Class CC	CHCC1D	CHCC1DI**	UL	††		1-pole	1	12	75° Cu Wire Only	200kA	LP-CC, FNO-R, KTK-R
	CHCC2D	CHCC2DI**	600Vac/dc	††		2-pole	2	6			
	CHCC3D	CHCC3DI**	30A	††		3-pole	3	4			
	—	CHCC1DI-48***	UL 48Vdc, 30A	††		1-pole	1	12			
CHPV	CHPV1	CHPV1I**	1000Vdc 30A	†††	•	1-pole	1	12	75° Cu Wire Only	33kA	PV Series
CHM 10X38 & Midget	CHM1D	CHM1DI**	UL	†	•	1-pole	1	12	75° Cu Wire Only	Rating varies depending on fuse used in holder.	FNO, KLM, FNM, KTK, BAF, FWA, DCM, C10 Series, AGU, FWC
	CHM1DNX	-	600Vac/dc, 30A		•	1 Neutral Pole	1	12			
	CHM1DN	CHM1DNI**			•	1-pole + Neutral	2	6			
	CHM2D	CHM2DI**		†	•	2-pole	2	6			
	CHM3D	CHM3DI**	IEC 690Vac, 32A (3 Watt)	†	•	3-pole	3	4			
	CHM3DN	CHM3DNI**			•	3-pole + Neutral	4	3			
	CHM4D	CHM4DI**			•	4-pole	4	3			
—	CHM1DI-48***	UL 48Vdc, 30A IEC 48Vdc, 32A (3 Watt)	†	•	1-pole	1	12				

† UL Recognized (cURus)

†† UL Listed (cULus)

††† Self Certified

*Holder width as compared to standard 17.5mm module, i.e., 1 = 17.5mm 2 = 35mm.

**90V minimum required for illumination

***12V minimum required for illumination

MFH Wire Range and Torque -
CH Series: CHCC, CHM & CHPV

Wire Range	Conductor Type 75°C Cu Wire Only	Conductors	Torque
18-12 AWG (0.8 - 4mm ²)	Solid/Stranded	Single	20 lb-in 2.3 N•m
10 AWG (5.0mm ²)	Solid	Single	25 lb-in (2.8 N•m)
10-8 AWG (5.0 - 8.0mm ²)	Stranded		
18-14 AWG (0.8 - 2.0mm ²)	Solid	Dual	
18-10 AWG (0.8 - 5.0mm ²)	Stranded		

CC-TRON®

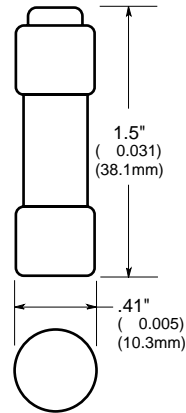
FNQ-R

Time-Delay Fuses

1³/₃₂" x 1¹/₂", 600 Volt, ¼ to 30 Amps



Dimensional Data



Catalog Symbol: FNQ-R

Time-Delay

Application: Circuit Transformer Protection

Ampere Rating: ¼ to 30 Amperes

Voltage Rating: 600 Volts AC (or less)†

Interrupting Rating: 200,000A RMS Sym. (U.L.)

Agency Approvals:

U.L. Listed, Std. 248-4, Class CC, Guide JDDZ, File E4273

CSA Certified, Class CC CSA, Class 1422-01,

File 53787-HRC-MISC

†12-30 amp is 300 Vdc and 10 KAIC.

General Information:

- The Bussmann CC-TRON® (FNQ-R) was designed to meet the needs of control circuit transformer protection.
- Current-limitation protects down stream components against damaging thermal and magnetic effects of short-circuit currents.
- **Rejection feature.** FNQ-R fuses meet the U.L. 508, paragraph 19.2.4 requirement that control circuit fuses used in equipment listed for use with more than 10,000 ampere available must have an adequate interrupting rating and must be rejection type.
- **High inrush time-delay.** Control circuit transformers can experience inrush currents up to 85 times their full-load current rating. FNQ-R fuses can be sized according to NEC and U.L. requirements and still allow the high inrush currents, with significantly more time-delay than the U.L. minimum value of 12 seconds at 200% for Class CC fuses.
- Melamine tube. Nickel-plated brass endcaps.

Maximum Acceptable Rating of Overcurrent Device*

Rated Primary Current (Amperes)	Maximum Rating of Overcurrent Protective Device Expressed As A Percent of Transformer Primary Current Rating
Less than 2A	500**
2A to less than 9A	167
9A or more	125

*U.L. 508, Table 19.3.

**300% for other than motor control applications.

CE CE logo denotes compliance with European Union Low Voltage Directive (50-1000 Vac, 75-1500 Vdc). Refer to BIF document #8002 or contact Bussmann Application Engineering at 636-527-1270 for more information.

Electrical Ratings (Catalog Symbol and Amperes)

FNQ-R-¼	FNQ-R-1 ³ / ₁₀	FNQ-R-3 ³ / ₁₀	FNQ-R-8
FNQ-R- ³ / ₁₀	FNQ-R-1 ¹ / ₁₀	FNQ-R-3 ¹ / ₂	FNQ-R-9
FNQ-R- ⁴ / ₁₀	FNQ-R-1 ¹ / ₂	FNQ-R-4	FNQ-R-10
FNQ-R-½	FNQ-R-1 ¹ / ₁₀	FNQ-R-4 ¹ / ₂	FNQ-R-12
FNQ-R- ⁹ / ₁₀	FNQ-R-1 ¹ / ₁₀	FNQ-R-5	FNQ-R-15
FNQ-R-¾	FNQ-R-2	FNQ-R-5 ⁹ / ₁₀	FNQ-R-17 ¹ / ₂
FNQ-R- ⁹ / ₁₀	FNQ-R-2 ¹ / ₄	FNQ-R-6	FNQ-R-20
FNQ-R-1	FNQ-R-2 ¹ / ₂	FNQ-R-6 ¹ / ₄	FNQ-R-25
FNQ-R-1 ¹ / ₈	FNQ-R-2 ² / ₁₀	FNQ-R-7	FNQ-R-30
FNQ-R-1 ¹ / ₄	FNQ-R-3	FNQ-R-7 ¹ / ₂	—

Carton Quantity and Weight

Ampere Ratings	Carton Qty.	Weight*	
		Lbs.	Kg.
¼-30	10	.200	.091

*Weight per carton

Type T transformers are designed with low impedance windings for excellent voltage regulation and can accommodate the high inrush current associated with contactors, starters, solenoids, and relays. Type T transformers are manufactured using the most advanced insulating materials and are the best choice if size and cost are of concern.

Type TF transformers include factory-installed primary and secondary fuse blocks. Type TF transformers consist of two primary fuse blocks and one secondary fuse block. The primary includes rejection-style clips to increase the AIC ratings for the fuses. Since the fuse blocks are mounted on the top of the transformer, Type TF transformers are interchangeable with Type T transformers except for their increased height.

Table 14.27: Type T and TF Transformers

VA UL/CSA/ NOM	VA CE	Type T Transformers		Type TF Transformers		Weight (lbs)
		Catalog No.	\$ Price	Catalog No.	\$ Price	
240 V x 480 V Primary, 120 V Secondary; 230 V x 460 V Primary, 115 V Secondary; 220 V x 440 V Primary, 110 V Secondary						
25	25	9070T25D1	111.00	9070TF25D1	160.00	2.5
50	50	9070T50D1	116.00	9070TF50D1	165.00	2.5
75	75	9070T75D1	138.00	9070TF75D1	185.00	3.8
100	100	9070T100D1	155.00	9070TF100D1	201.00	3.8
150	150	9070T150D1	165.00	9070TF150D1	213.00	5.5
200	200	9070T200D1	204.00	9070TF200D1	255.00	5.5
250	160	9070T250D1	239.00	9070TF250D1	287.00	7.1
300	200	9070T300D1	264.00	9070TF300D1	312.00	8.5
350	250	9070T350D1	281.00	9070TF350D1	330.00	10.5
500	300	9070T500D1	350.00	9070TF500D1	395.00	11.9
750	500	9070T750D1	483.00	9070TF750D1	531.00	11.0
1000	630	9070T1000D1	585.00	9070TF1000D1	639.00	20.6
1500	1000	9070T1500D1	837.00	9070TF1500D1	884.00	34.0
2000	1500	9070T2000D1	1017.00	9070TF2000D1	1065.00	47.0
3000	2000	9070T3000D1	1412.00	—	—	60.0
5000	3000	9070T5000D1	2373.00	—	—	89.0
208 V Primary, 120 V Secondary						
50	50	9070T50D3	135.00	9070TF50D3	185.00	2.5
75	75	9070T75D3	162.00	9070TF75D3	230.00	3.8
100	100	9070T100D3	182.00	9070TF100D3	276.00	3.8
150	150	9070T150D3	230.00	9070TF150D3	287.00	5.5
200	200	9070T200D3	293.00	9070TF200D3	347.00	5.5
250	160	9070T250D3	363.00	9070TF250D3	417.00	7.1
300	200	9070T300D3	372.00	9070TF300D3	426.00	8.5
350	250	9070T350D3	432.00	9070TF350D3	522.00	10.5
500	300	9070T500D3	471.00	9070TF500D3	696.00	11.9
750	500	9070T750D3	665.00	9070TF750D3	716.00	11.0
1000	630	9070T1000D3	837.00	9070TF1000D3	906.00	20.6
1500	1000	9070T1500D3	1170.00	9070TF1500D3	1221.00	34.0
2000	1500	9070T2000D3	1358.00	9070TF2000D3	1409.00	47.0
3000	2000	9070T3000D3	1914.00	—	—	60.0
5000	3000	9070T5000D3	3015.00	—	—	89.0
600 V Primary, 120 V Secondary; 575 V Primary, 115 V Secondary; 550 V Primary, 110 V Secondary						
50	50	9070T50D5	135.00	9070TF50D5	185.00	2.5
75	75	9070T75D5	162.00	9070TF75D5	230.00	3.8
100	100	9070T100D5	182.00	9070TF100D5	276.00	3.8
150	150	9070T150D5	230.00	9070TF150D5	287.00	5.5
200	200	9070T200D5	293.00	9070TF200D5	347.00	5.5
250	160	9070T250D5	363.00	9070TF250D5	417.00	7.1
300	200	9070T300D5	372.00	9070TF300D5	426.00	8.5
350	250	9070T350D5	432.00	9070TF350D5	522.00	10.5
500	300	9070T500D5	471.00	9070TF500D5	696.00	11.9
750	500	9070T750D5	665.00	9070TF750D5	716.00	11.0
1000	630	9070T1000D5	837.00	9070TF1000D5	906.00	20.6
1500	1000	9070T1500D5	1170.00	9070TF1500D5	1221.00	34.0
2000	1500	9070T2000D5	1358.00	9070TF2000D5	1409.00	47.0
3000	2000	9070T3000D5	1914.00	—	—	60.0
5000	3000	9070T5000D5	3015.00	—	—	89.0
277 V Primary, 120 V Secondary						
50	50	9070T50D4	135.00	—	—	2.5
75	75	9070T75D4	162.00	—	—	3.8
100	100	9070T100D4	182.00	—	—	3.8
150	150	9070T150D4	230.00	—	—	5.5
200	200	9070T200D4	293.00	—	—	5.5
250	160	9070T250D4	363.00	—	—	7.1
300	200	9070T300D4	372.00	—	—	8.5
350	250	9070T350D4	432.00	—	—	10.5
500	300	9070T500D4	471.00	—	—	11.9
750	500	9070T750D4	665.00	—	—	11.0
1000	630	9070T1000D4	837.00	—	—	20.6
1500	1000	9070T1500D4	1170.00	—	—	34.0
2000	1500	9070T2000D4	1358.00	—	—	47.0
3000	2000	9070T3000D4	1914.00	—	—	60.0
5000	3000	9070T5000D4	3015.00	—	—	89.0

VA UL/CSA/ NOM	VA CE	Type T Transformers		Type TF Transformers		Weight (lbs)
		Catalog No.	\$ Price	Catalog No.	\$ Price	
240 V x 480 V Primary, 120/240 V Secondary; 230 V x 460 V Primary, 115/230 V Secondary; 220 V x 440 V Primary, 110/220 V Secondary						
50	50	9070T50D31	188.00	9070TF50D31	372.00	2.5
75	75	9070T75D31	197.00	9070TF75D31	384.00	3.8
100	100	9070T100D31	207.00	9070TF100D31	394.00	3.8
150	150	9070T150D31	273.00	9070TF150D31	452.00	5.5
200	200	9070T200D31	353.00	9070TF200D31	498.00	5.5
250	160	9070T250D31	381.00	9070TF250D31	564.00	7.1
300	200	9070T300D31	435.00	9070TF300D31	570.00	8.5
350	250	9070T350D31	455.00	9070TF350D31	630.00	10.5
500	300	9070T500D31	509.00	9070TF500D31	638.00	11.9
750	500	9070T750D31	710.00	9070TF750D31	795.00	11.0
1000	630	9070T1000D31	837.00	9070TF1000D31	920.00	20.6
1500	1000	9070T1500D31	1224.00	9070TF1500D31	1524.00	34.0
2000	1500	9070T2000D31	1854.00	9070TF2000D31	2154.00	47.0
3000	2000	9070T3000D31	2741.00	—	—	60.0
5000	3000	9070T5000D31	3368.00	—	—	89.0
600 V Primary, 120/240 V Secondary; 575 V Primary, 115/230 V Secondary						
50	50	9070T50D37	135.00	9070TF50D37	372.00	2.5
75	75	9070T75D37	162.00	9070TF75D37	384.00	3.8
100	100	9070T100D37	182.00	9070TF100D37	394.00	3.8
150	150	9070T150D37	230.00	9070TF150D37	452.00	5.5
200	200	9070T200D37	293.00	9070TF200D37	498.00	5.5
250	160	9070T250D37	363.00	9070TF250D37	564.00	7.1
300	200	9070T300D37	372.00	9070TF300D37	570.00	8.5
350	250	9070T350D37	432.00	9070TF350D37	630.00	10.5
500	300	9070T500D37	471.00	9070TF500D37	638.00	11.9
750	500	9070T750D37	665.00	9070TF750D37	795.00	11.0
1000	630	9070T1000D37	837.00	9070TF1000D37	920.00	20.6
1500	1000	9070T1500D37	1170.00	9070TF1500D37	1524.00	34.0
2000	1500	9070T2000D37	1358.00	9070TF2000D37	2154.00	47.0
3000	2000	9070T3000D37	1914.00	—	—	60.0
5000	3000	9070T5000D37	3015.00	—	—	89.0
380/400/415 V Primary, 115/230 V Secondary						
50	50	9070T50D33	188.00	9070TF50D33	372.00	2.5
75	75	9070T75D33	197.00	9070TF75D33	384.00	3.8
100	100	9070T100D33	207.00	9070TF100D33	394.00	3.8
150	150	9070T150D33	273.00	9070TF150D33	452.00	5.5
200	200	9070T200D33	353.00	9070TF200D33	498.00	5.5
250	160	9070T250D33	381.00	9070TF250D33	564.00	7.1
300	200	9070T300D33	435.00	9070TF300D33	570.00	8.5
350	250	9070T350D33	455.00	9070TF350D33	630.00	10.5
500	300	9070T500D33	509.00	9070TF500D33	638.00	11.9
750	500	9070T750D33	710.00	9070TF750D33	795.00	11.0
1000	630	9070T1000D33	837.00	9070TF1000D33	920.00	20.6
1500	1000	9070T1500D33	1224.00	9070TF1500D33	1524.00	34.0
2000	1500	9070T2000D33	1854.00	9070TF2000D33	2154.00	47.0
3000	2000	9070T3000D33	2741.00	—	—	60.0
5000	3000	9070T5000D33	3368.00	—	—	89.0



Table 14.28: Type T and TF Transformers (continued)

VA UL/CSA/ NOM	VA CE	Type T Transformers		Type TF Transformers		Weight (lbs)
		Catalog No.	\$ Price	Catalog No.	\$ Price	
208/230/460 V Primary, 115 V Secondary						
50	50	9070T50D20	188.00	9070TF50D20	270.00	4
75	75	9070T75D20	197.00	9070TF75D20	293.00	5.5
100	100	9070T100D20	207.00	9070TF100D20	360.00	5.5
150	150	9070T150D20	273.00	9070TF150D20	443.00	5.5
200	200	9070T200D20	353.00	9070TF200D20	497.00	8.5
250	160	9070T250D20	381.00	9070TF250D20	548.00	10.5
300	200	9070T300D20	435.00	9070TF300D20	563.00	10.5
350	250	9070T350D20	455.00	9070TF350D20	585.00	11.9
500	300	9070T500D20	509.00	9070TF500D20	608.00	11
750	500	9070T750D20	710.00	9070TF750D20	951.00	20.6
1000	630	9070T1000D20	837.00	9070TF1000D20	1320.00	34
1500	1000	9070T1500D20	1224.00	9070TF1500D20	1524.00	47
2000	1500	9070T2000D20	1854.00	9070TF2000D20	2154.00	60
3000	2000	9070T3000D20	2741.00	—	—	89
240/480/600 V Primary, 120 V Secondary; 230/460/575 V Primary, 115 V Secondary; 220/440/550 V Primary, 110 V Secondary						
50	50	9070T50D32	188.00	9070TF50D32	372.00	3.8
75	75	9070T75D32	197.00	9070TF75D32	384.00	3.8
100	100	9070T100D32	207.00	9070TF100D32	394.00	5.5
150	150	9070T150D32	273.00	9070TF150D32	452.00	5.5
200	200	9070T200D32	353.00	9070TF200D32	498.00	7.1
250	160	9070T250D32	381.00	9070TF250D32	564.00	8.5
300	200	9070T300D32	435.00	9070TF300D32	570.00	10.5
350	250	9070T350D32	455.00	9070TF350D32	630.00	11.9
500	300	9070T500D32	509.00	9070TF500D32	638.00	11.0
750	500	9070T750D32	710.00	9070TF750D32	795.00	20.6
1000	630	9070T1000D32	837.00	9070TF1000D32	920.00	34.0
1500	1000	9070T1500D32	1224.00	9070TF1500D32	1524.00	47.0
2000	1500	9070T2000D32	1854.00	9070TF2000D32	2154.00	60.0
3000	2000	9070T3000D32	2741.00	—	—	89.0
240/416/480/600 V Primary, 99/120/130 V Secondary; 230/400/460/575 V Primary, 95/115/125 V Secondary; 220/380/440/550 V Primary, 90/110/120 V Secondary; 208/360/416/520 V Primary, 85/104/115 V Secondary						
50	50	9070T50D50	315.00	9070TF50D50	502.00	4
75	75	9070T75D50	341.00	9070TF75D50	528.00	7.2
100	100	9070T100D50	350.00	9070TF100D50	537.00	7.1
150	150	9070T150D50	366.00	9070TF150D50	553.00	8.5
200	200	9070T200D50	417.00	9070TF200D50	604.00	10.5
250	160	9070T250D50	455.00	9070TF250D50	642.00	10.5
300	200	9070T300D50	497.00	9070TF300D50	684.00	11.9
350	250	9070T350D50	512.00	9070TF350D50	699.00	11
500	300	9070T500D50	656.00	9070TF500D50	843.00	11
750	500	9070T750D50	761.00	9070TF750D50	948.00	20.6
1000	630	9070T1000D50	996.00	9070TF1000D50	1183.00	34
1500	1000	9070T1500D50	1352.00	9070TF1500D50	1524.00	47.0
2000	1500	9070T2000D50	1854.00	9070TF2000D50	2154.00	60.0
3000	2000	9070T3000D50	2741.00	—	—	89.0
240 V X 480 V Primary, 24/120 V Secondary (24 V limited to 20% Capacity)						
50	50	9070T50D15	135.00	—	—	2.5
75	75	9070T75D15	162.00	—	—	3.8
100	100	9070T100D15	207.00	—	—	3.8
150	150	9070T150D15	230.00	—	—	5.5
200	200	9070T200D15	293.00	—	—	5.5
250	160	9070T250D15	381.00	—	—	7.1
300	200	9070T300D15	435.00	—	—	8.5
350	250	9070T350D15	455.00	—	—	10.5
500	300	9070T500D15	509.00	—	—	11.9
750	500	9070T750D15	710.00	—	—	11.0
1000	630	9070T1000D15	837.00	—	—	20.6
1500	1000	9070T1500D15	1224.00	—	—	34.0
2000	1500	9070T2000D15	1854.00	—	—	47.0
3000	2000	9070T3000D15	2229.00	—	—	60.0
5000	3000	9070T5000D15	3015.00	—	—	89.0

Table 14.29: Type T Transformers

VA UL/CSA/ NOM	VA CE	Catalog No.	\$ Price	Weight (lbs)
240 V x 480 V Primary, 24 V Secondary				
50	50	9070T50D2	135.00	2.5
75	75	9070T75D2	162.00	3.8
100	100	9070T100D2	182.00	3.8
150	150	9070T150D2	230.00	5.5
200	200	9070T200D2	293.00	5.5
250	160	9070T250D2	363.00	7.1
300	200	9070T300D2	372.00	8.5
350	250	9070T350D2	432.00	10.5
500	300	9070T500D2	471.00	11.9
750	500	9070T750D2	665.00	11.0
1000	630	9070T1000D2	837.00	20.6
208 V Primary, 24 V Secondary				
50	50	9070T50D14	135.00	2.5
75	75	9070T75D14	162.00	3.8
100	100	9070T100D14	182.00	3.8
150	150	9070T150D14	230.00	5.5
200	200	9070T200D14	293.00	5.5
250	160	9070T250D14	363.00	7.1
300	200	9070T300D14	372.00	8.5
350	250	9070T350D14	432.00	10.5
500	300	9070T500D14	471.00	11.9
750	500	9070T750D14	665.00	11.0
1000	630	9070T1000D14	837.00	20.6
120 V x 240 V Primary, 24 V Secondary				
50	50	9070T50D23	135.00	2.5
75	75	9070T75D23	162.00	3.8
100	100	9070T100D23	182.00	3.8
150	150	9070T150D23	230.00	5.5
200	200	9070T200D23	293.00	5.5
250	160	9070T250D23	363.00	7.1
300	200	9070T300D23	372.00	8.5
350	250	9070T350D23	432.00	10.5
500	300	9070T500D23	471.00	11.9
750	500	9070T750D23	665.00	11.0
1000	630	9070T1000D23	837.00	20.6
120 V Primary, 12/24 V Secondary				
50	50	9070T50D13	135.00	2.5
75	75	9070T75D13	162.00	3.8
100	100	9070T100D13	182.00	3.8
150	150	9070T150D13	230.00	5.5
200	200	9070T200D13	293.00	5.5
250	160	9070T250D13	363.00	7.1
300	200	9070T300D13	372.00	8.5
350	250	9070T350D13	432.00	10.5
500	300	9070T500D13	471.00	11.9
750	500	9070T750D13	665.00	11.0
1000	630	9070T1000D13	837.00	20.6
MultiTap 24 Volt Control Primary				
208/240/277/380/480 V Primary, 24 V Secondary				
50	50	9070T50D19	188.00	4.0
75	75	9070T75D19	197.00	7.2
100	100	9070T100D19	207.00	7.2
150	150	9070T150D19	273.00	7.1
200	200	9070T200D19	353.00	8.5
250	160	9070T250D19	381.00	10.5
300	200	9070T300D19	435.00	11.9
350	250	9070T350D19	455.00	11.9
500	300	9070T500D19	509.00	11.0
750	500	9070T750D19	710.00	20.6
1000	630	9070T1000D19	837.00	34.0

Table 14.30: Type T Dimensions

Type	Voltage Code	Height		Width		Depth		Accessory Key
		In.	mm	In.	mm	In.	mm	
T25	D1	2.58	66	3.00	76	3.09	79	I
T50	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37	2.58	66	3.00	76	3.09	79	I
	D20, D32	2.89	73	3.38	86	3.34	85	II
T75	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37, D20, D32	2.89	73	3.38	86	4.43	113.0	III, IV
	D19, D50	3.20	81	3.75	95	4.7	119.4	III, IV
T100	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37	2.89	73	3.38	86	3.34	85	I
	D20, D32	3.20	81	3.75	95	3.59	91	II
	D19, D50	3.20	81	3.75	95	4.7	119.4	III, IV
T150	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37, D20	3.20	81	3.75	95	3.59	91	I
	D19, D32	3.20	81	3.75	95	4.7	119.4	II
	D50	3.84	98.0	4.50	114.3	4.74	120.4	III, IV
T200	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37	3.20	81	3.75	95	3.59	91	I
	D20	3.20	81	3.75	95	4.7	119.4	II
	D19, D32	3.84	98.0	4.50	114.3	4.74	120.4	II
T250	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37	3.20	81	3.75	95	5.11	129.8	III, IV
	D20	3.84	98.0	4.50	114.3	4.74	120.4	II
	D19, D32, D50	3.84	98.0	4.50	114.3	5.11	129.8	III, IV
T300	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37	3.84	98.0	4.50	114.3	4.74	120.4	I
	D19, D20	3.84	98.0	4.50	114.3	5.11	129.8	II
	D32, D50	3.84	98.0	4.50	114.3	5.49	139.4	III, IV
T350	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37	3.84	98.0	4.50	114.3	5.11	129.8	I
	D19, D20, D32	3.84	98.0	4.50	114.3	5.49	139.4	II
	D50	4.51	114.6	5.25	133.4	5.61	142.5	III, IV
T500	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37	3.84	98.0	4.50	114.3	5.49	139.4	I
	D19, D20, D32, D50	4.51	114.6	5.25	133.4	5.61	142.5	III, IV
T750	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37	4.51	114.6	5.25	133.4	5.61	142.5	I
	D19, D20, D32, D50	4.51	114.6	5.25	133.4	6.30	160.0	III, IV
T1000	D1, D5, D2, D23, D14, D13, D15, D3, D4, D31, D33, D37	4.51	114.6	5.25	133.4	6.30	160.0	I
	D19, D20, D32, D50	6.17	156.7	7.06	179.3	5.92	150.4	III, IV
T1500	D1, D5, D15, D3, D4, D31, D33, D37	6.17	156.7	7.06	179.3	5.92	150.4	I
	D20, D32, D50	6.17	156.7	7.06	179.3	7.17	182.1	III, IV
T2000	D1, D5, D15, D3, D4, D31, D33, D37	6.17	156.7	7.06	179.3	7.17	182.1	I
	D20, D32, D50	7.63	193.8	9.00	228.6	6.38	162.1	III, IV
T3000	D3, D4, D15, D31, D33, D37	7.63	193.8	9.00	228.6	6.38	162.1	I
	D20	7.63	194	9.00	229	8.31	211	II
	D1, D5,	8.75	222	9.00	229	7.24	184	I
	D32, D50	8.75	222	9.00	229	9.15	232	III, IV
T5000	D3, D4, D15, D31, D33, D37	7.63	194	9.00	229	8.31	211	I
	D1, D5,	8.75	222	9.00	229	9.15	232	I
TF2000	D1, D5, D15, D3, D4, D31, D33, D37	7.46	189.5	7.06	179.3	7.17	182.1	I
	D20, D32, D50			9.00	228.6	6.38	162.1	III, IV

Table 14.31: Type TF Dimensions

Type	Voltage Code	Height		Width		Depth		Accessory Key
		In.	mm	In.	mm	In.	mm	
TF25	D1	4	101.6	3.00	76	3.09	79	I
TF50	D1, D5, D3, D4, D31, D33, D37	4	101.6	3.00	76	3.09	79	I
	D20, D32	4.25	107.9	3.38	86	3.34	85	II
	D50	4.25	107.9	3.38	86	4.43	113.0	III, IV
TF75	D1, D5, D3, D4, D31, D33, D37, D20, D32	4.25	107.9	3.00	76	3.09	79	I
	D50	4.55	115.6	3.75	95	4.7	119.4	III, IV
TF100	D1, D5, D3, D4, D31, D33, D37	4.25	107.9	3.38	86	3.34	85	I
	D20, D32	4.55	115.6	3.75	95	3.59	91	II
	D50	4.55	115.6	3.75	95	4.7	119.4	III, IV
TF150	D1, D5, D3, D4, D31, D33, D37, D20	4.55	115.6	3.75	95	3.59	91	I
	D32	4.55	115.6	3.75	95	4.7	119.4	II
TF200	D50	5.1	129.6	4.50	114.3	4.74	120.4	III, IV
	D1, D5, D3, D4, D31, D33, D37	4.55	115.6	3.75	95	3.59	91	I
	D20	5.1	129.6	3.75	95	4.7	119.4	II
TF250	D32	5.1	129.6	4.50	114.3	4.74	120.4	II
	D50	5.1	129.6	4.50	114.3	5.11	129.8	III, IV
	D1, D5, D3, D4, D31, D33, D37	4.55	115.6	3.75	95	5.30	135	I
TF300	D20	5.1	129.6	4.50	114.3	4.74	120.4	II
	D32, D50	5.1	129.6	4.50	114.3	5.11	129.8	III, IV
	D1, D5, D3, D4, D31, D33, D37	5.1	129.6	4.50	114.3	5.11	129.8	I
TF350	D20, D32	5.1	129.6	4.50	114.3	5.49	139.4	II
	D50	5.73	145.6	5.25	133.4	5.61	142.5	III, IV
	D1, D5, D3, D4, D31, D33, D37	5.1	129.6	4.50	114.3	5.49	139.4	I
TF500	D20, D32, D50	5.73	145.6	5.25	133.4	5.61	142.5	III, IV
	D1, D5, D3, D4, D31, D33, D37	5.73	145.6	5.25	133.4	5.61	142.5	I
TF750	D20, D32, D50	5.73	145.6	5.25	133.4	6.30	160.0	III, IV
	D1, D5, D3, D4, D31, D33, D37	5.73	145.6	5.25	133.4	6.30	160.0	I
TF1000	D20, D32, D50	7.46	189.5	7.06	179.3	5.92	150.4	III, IV
	D1, D5, D15, D3, D4, D31, D33, D37	7.46	189.5	7.06	179.3	5.92	150.4	I
TF1500	D20, D32, D50	7.46	189.5	7.06	179.3	7.17	182.1	III, IV
	D1, D5, D15, D3, D4, D31, D33, D37	7.46	189.5	7.06	179.3	7.17	182.1	I
TF2000	D20, D32, D50			9.00	228.6	6.38	162.1	III, IV



Accessories

The Type T control transformers offer multiple field installable accessories:

Table 14.32: Fingersafe™ Covers (Not Supplied with Unit)

Type	Type Accessory Key ▲			Description	\$ Price Each	Order Qty.	Order \$ Price
	I	II	III, IV				
FSC1	T25-T200	T25-T150	—	2 covers per kit	21.00	10	210.00
FSC2	T250-T5000	T250-T5000	—	2 covers per kit	30.00	10	300.00
FSC23	—	—	T25-T5000	2 covers per kit	30.00	10	300.00

▲ Kits must be ordered separately. Also supplied in bulk packages of 100 individual covers. Add "B" to Type number (available only on FSC1B and FSC2B).

Table 14.33: Separate NEMA Type 1 Enclosures for Transformers

Class 9991 Type	For Use With
UE7	EO1, EO17, T50
LG1	EO2, EO3, EO4, EO15, EO16, EO18, EO19, T75, T100, T150, T200, T250, T300, T350, T500
SDG4	EO51, EO61, T750, T1000, EO71

NOTE: User must drill mounting holes. See pages 16-106 and 16-107 for dimensions.

Table 14.34: Jumper Kits

Catalog No.	Type Accessory Key			Description	\$ Price Each	Order Qty.	Order \$ Price
	I	II	III, IV				
3003302753	T25-T200	T25-T150	—	Two jumpers per bag	8.00	50	400.00
3003302754	T250-T5000	T200-T3000	T25-T3000	Minimum order of 50 kits	5.00	50	250.00

NOTE: Jumpers are supplied with voltage codes that require them. If additional kits are required, order per above chart.

Table 14.35: Fuse Pullers (For Use on TF and FB Accessory)

Catalog No.	\$ Price Each	Order Qty.	Order \$ Price
9070FP1	33.00	10	330.00

Field Installed Fuse Options

Table 14.36: Primary and Secondary Fusing

Type	Type Accessory Key			Description	\$ Price Each	Order Qty.	Order \$ Price
	I	II	III, IV				
FB3A	25-200	25-150	—	Three pole fuse block for primary and secondary fusing, accommodates 1-1/2 x 13/32 inch midget fuse (2 rejection and 1 non-rejection)	87.00	1	87.00
FB3B	250-2000	200-2000	25-2000	Three pole fuse block for primary and secondary fusing, accommodates 1-1/2 x 13/32 inch midget fuse (2 rejection and 1 non-rejection)	87.00	1	87.00

Table 14.37: Primary Fusing

Type	Type Accessory Key			Description	\$ Price Each	Order Qty.	Order \$ Price
	I	II	III, IV				
FB2A	25-200	25-150	—	Two pole fuse block for primary fusing, accommodates 1-1/2 x 13/32 inch midget fuse (2 rejection)	75.00	1	75.00
FB2B	250-2000	200-2000	25-2000	Two pole fuse block for primary fusing, accommodates 1-1/2 x 13/32 inch midget fuse (2 rejection)	75.00	1	75.00

Table 14.38: Field-Installable Secondary Fuse Clips

Type	Type Accessory Key ◆			Description	\$ Price Each	Order Qty.	Order \$ Price
	I	II	III, IV				
SF25A	25-200	25-150	—	Secondary fuse block accommodates 1-1/4 x 1/4 inch fuse	21.00	10	210.00
SF25B	250-2000	200-2000	25-2000	Secondary fuse block accommodates 1-1/4 x 1/4 inch fuse	21.00	10	210.00
SF41A	25-200	25-150	—	Secondary fuse clip accommodates 1-1/2 x 13/32 inch midget fuse	18.00	10	180.00
SF41B	250-2000	200-2000	25-2000	Secondary fuse clip accommodates 1-1/2 x 13/32 inch midget fuse	18.00	10	180.00
FB1A	25-200	25-150	—	One pole fuse block for secondary fusing, accommodates 1-1/2 x 13/32 inch midget fuse (1 non-rejection)	53.00	1	53.00
FB1B	250-2000	200-2000	25-2000	One pole fuse block for secondary fusing, accommodates 1-1/2 x 13/32 inch midget fuse (1 non-rejection)	53.00	1	53.00

- SF41 can be installed on the following voltage codes: D1, D5, D24, D3, D4, D51, D2, D23, D14, D25, D20, D95, D19, D22, D36.
- ◆ I = voltage codes D1, D2, D3, D4, D5, D12, D13, D14, D15, D23, D24, D25, D31, D32, D33, D36, D5
II = voltage codes D18, D20
III, IV = voltage codes D19, D50

Selection Guide

- Determine the inrush and sealed VA of each coil in the control circuit and the VA of all other components.
- Total the **sealed** VA of all operating coils and the VA of all other loads. (This determines the minimum VA size required for the circuit.)
- Total the **inrush** VA of all coils that are starting at the same time and all loads and coils that are running.
- Locate a value in the VA column of Table 14.39 that is **equal to or greater than** the value calculated in step 2.
- In the VA row selected in step 4, find the inrush value under the appropriate voltage regulation column of Table 14.39. If this value is **greater than** the calculated value from step 3, this is the correct transformer VA rating.

If the inrush value on the selected VA row is **not greater than** the calculated value from step 3, use the next higher transformer VA rating, that is, the rating on the next row.

If your supply voltage is stable and fluctuates less than 5%, Schneider Electric recommends you use the 90% secondary voltage column. If your supply voltage is not stable and fluctuates more than 10% we recommend you use the 95% secondary voltage column. We recommend that you never use the 85% secondary voltage column since magnetic devices lose life expectancy if they are continuously started at 85% of rated voltage.

Table 14.39: Regulation Chart for Type T

VA	Inrush VA @ 20% power factor			Inrush VA @ 40% power factor		
	95% Secondary Voltage	90% Secondary Voltage	85% Secondary Voltage	95% Secondary Voltage	90% Secondary Voltage	85% Secondary Voltage
50	193	266	339	151	215	282
75	271	396	20	210	318	430
100	339	499	659	266	404	549
150	666	893	1120	529	731	942
200	588	815	1041	459	659	866
250	1416	1910	2388	1057	1494	1936
300	1634	2184	2709	1194	1681	2169
350	1894	2592	3261	1392	2005	621
500	3197	4104	4981	2374	3195	4019
750	3770	5515	7231	2887	4391	5945
1000	6587	9079	11430	4706	6886	9051
1500	19324	23983	28607	15066	19361	23756
2000	31384	38777	6161	24794	31630	38667
3000	26539	39934	52713	19355	30721	42216
5000	53111	85265	116277	39368	66309	93882

TYPES KA-U, KKA-U

UNIVERSAL TERMINAL

(One Conductor)
For Aluminum and
Copper Conductors

These dual-rated one-conductor lugs are constructed from high strength aluminum alloy and electro tin-plated to provide low contact resistance.



AL9CU

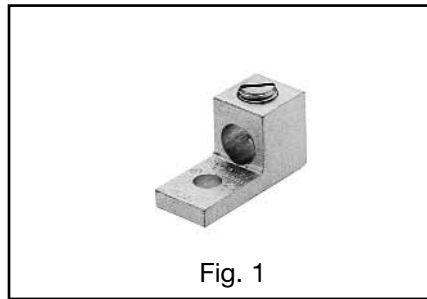


Fig. 1

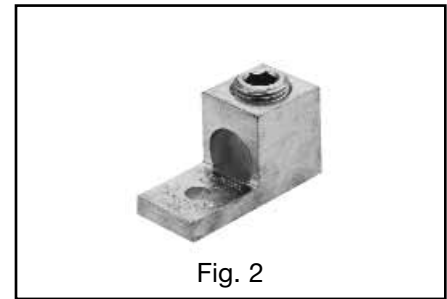


Fig. 2

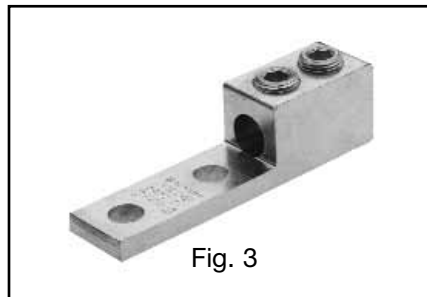


Fig. 3

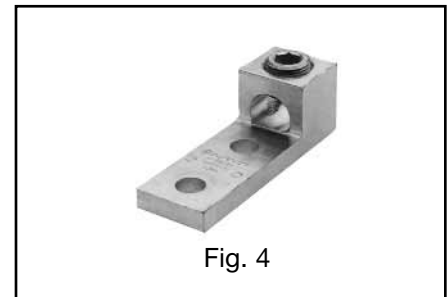
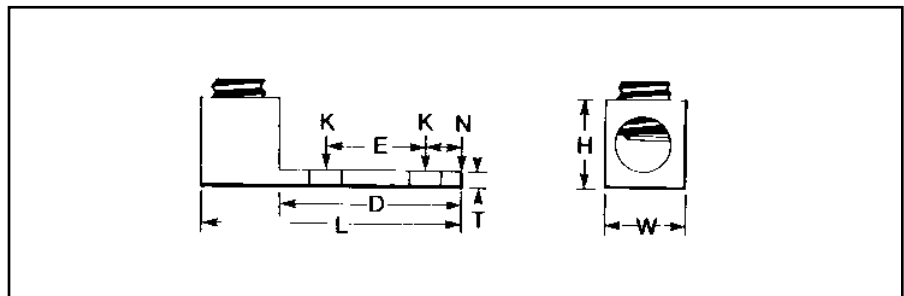


Fig. 4



Catalog Number*	Fig. No.	Wire Range Aluminum or Copper	Stud Hole Size	Dimensions							Recommended Tightening ▲ Torque in-lb
				D	L	N	** W	E	T	** H	
KA6U	1	14 Str. - 6 Str.	1/4	.63	1.06	.25	.50	—	.09	.50	45
KA2U	1	14 Str. - 2 Str.		.63	1.16	.31	.50	—	.10	.55	50
KA25U	1	14 Str. - 1/0 Str.		.81	1.50	.44	.63	—	.19	.80	50
KA26U	2	6 Str. - 2/0 Str.		.81	1.47	.47	.63	—	.19	.80	120
KA29U	2	6 Str. - 250 kcmil	5/16	.94	2.00	.50	1.00	—	.25	1.13	275
KA30U	2	6 Str. - 300 kcmil		.94	2.00	.50	1.00	—	.25	1.12	275
KA31U	2	6 Str. - 350 kcmil	3/8	1.03	2.25	.88	1.13	—	.25	1.25	275
KA34U	2	4 Str. - 500 kcmil		1.50	2.81	.88	1.51	—	.31	1.58	500
KA36U	2	2 Str. - 600 kcmil		1.72	3.19	.78	1.50	—	.44	1.56	500
KA40U	2	300 - 800 kcmil	1/2	1.69	3.38	.88	1.75	—	.50	1.94	550
KA44U	2	500 - 1000 kcmil		1.69	3.38	.88	1.75	—	.50	1.94	550
KKA31U-2N	3	6 Str. - 350 kcmil	1/2	3.16	5.50	.63	1.25	1.75	.38	1.50	275
KA36U-2N	4	2 Str. - 600 kcmil		3.22	4.69	.63	1.50	1.75	.44	1.57	500
KA40U-2N	4	300 - 800 kcmil		3.03	4.75	.63	1.75	1.75	.50	1.94	500
KA44U-2N	4	500 - 1000 kcmil		3.03	4.75	.63	1.75	1.75	.50	1.94	550

* "N" indicates NEMA standard stud holes.

▲ Listed torque values are for maximum conductor sizes accommodated. Consult UL486 Tables 7-4, 7-5, 7-6 for smaller conductor sizes.

** Maximum dimension.

Blue highlighted items are industry standard and most frequently ordered.

Table 18.1: 3- or 4-Pole Screw Terminal Connections

Maximum Horsepower Ratings							Maximum Current Utilization Categories		No of Poles		Instantaneous Auxiliary Contacts		Catalog Number ▲	\$ Price			
Single Phase		Three Phase					Inductive AC3 Amperes	Resistive AC1 Amperes	N.O.	N.C.	N.O.	N.C.		AC Coils	DC Coils		
115 V hp	230 V hp	200 V hp	230 V hp	460 V hp	575 V hp	9											
0.5	1	2	2	5	7.5	9	20	3	0	1	1	LC1D09 ♦♦	94.00	119.00			
—	—	—	—	—	—	—		4	—			—	—	—	LC1DT20 ♦♦	94.00	119.00
—	—	—	—	—	—	—		2	2			—	—	—	LC1D098 ♦	94.00	119.00
1	2	3	3	7.5	10	12	25	3	0	1	1	LC1D12 ♦♦	119.00	149.00			
—	—	—	—	—	—	—		4	—			—	—	—	LC1DT25 ♦	119.00	149.00
—	—	—	—	—	—	—		2	2			—	—	—	LC1D128 ♦	119.00	149.00
1	3	5	5	10	15	18	32	3	0	1	1	LC1D18 ♦♦	136.00	160.00			
—	—	—	—	—	—	—		4	—			—	—	—	LC1DT32 ♦♦	149.00	183.00
—	—	—	—	—	—	—		2	2			—	—	—	LC1D188 ♦	149.00	183.00
2	3	7.5	7.5	15	20	25	40	3	0	1	1	LC1D25 ♦♦	151.00	181.00			
—	—	—	—	—	—	—		4	—			—	—	—	LC1DT40 ♦♦	193.00	240.00
—	—	—	—	—	—	—		2	2			—	—	—	LC1D258 ♦	193.00	240.00
2	5	10	10	20	30	32	50	3	0	1	1	LC1D32 ♦♦	172.00	213.00			
3	5	10	10	30	30	40		60	3			0	1	1	LC1D40	296.00	275.00
—	—	—	—	—	—	—			4			—			—	—	—
—	—	—	—	—	—	—	2		2	0	0	—			LC1D40008 ■	296.00	353.00
3	7.5	15	15	40	40	50	80	3	0	1	1	LC1D50	234.00	291.00			
5	10	20	20	50	50	65		125	3			—	0	0	LC1D65	322.00	379.00
—	—	—	—	—	—	—			4			0			—	—	—
—	—	—	—	—	—	—	2		2	—	—	—			LC1D65008 ■	446.00	503.00
7.5	15	25	30	60	60	80	125	3	0	1	1	LC1D80	363.00	420.00			
—	—	—	—	—	—	—		200	4			—	0	0	LC1D80004 ■	489.00	524.00
—	—	—	—	—	—	—			2			2			—	—	—
—	—	30	40	75	100	115	200		3	—	1	1			LC1D115	479.00	479.00
—	—	40	50	100	125	150		4	0	—			0	0	LC1D150	696.00	696.00
—	—	—	—	—	—	—			—	—					—	—	—

- ▲ Complete catalog number with coil voltage code from table on page 18-3; example, LC1D09G7.
- ♦ For DC version of these devices replace the 'C' with 'P' (ex LC1D40004**) becomes LP1D40004**).
- On LC1D09 - LC1D32 and LC1DT20 through LC1DT40, for ring tongue versions add '6' to the catalog number prior to adding the voltage code (ex, LC1D09G7 becomes LC1D096G7). No Price adder for this modification.
- ★ On LC1D09 - LC1D32, for spring terminals versions add '3' to the catalog number prior to adding the voltage code (ex., LC1D09G7 becomes LC1D093G7). No price adder for this modification.

Table 18.2: D-Line Overload Relays — Ambient Compensated, Bi-Metallic Direct Mount

Current Setting Range Amperes	For Direct Mounting to LC1LLL	Class 10 with Single Phase Sensitivity	Class 10 without Single Phase Sensitivity	Class 20 with Single Phase Sensitivity	Class 20 without Single Phase Sensitivity	\$ Price
0.10-0.16	D09-D32	LRD01	LR3D01	—	—	60.00
0.16-0.25		LRD02	LR3D02	—	—	
0.25-0.40		LRD03	LR3D03	—	—	
0.40-0.63		LRD04	LR3D04	—	—	
0.63-1		LRD05	LR3D05	—	—	
1-1.6		LRD06	LR3D06	—	—	
1.6-2.5		LRD07	LR3D07	—	—	
2.5-4		LRD08	LR3D08	LRD1508	LR3D1508A1	
4-6		LRD10	LR3D10	LRD1510	LR3D1510A1	
5.5-8		D09-D32	LRD12	LR3D12	LRD1512		LR3D1512A1	62.00
7-10	D09-D32	LRD14	LR3D14	LRD1514	LR3D1514A1	
9-13	D12-D32	LRD16	LR3D16	LRD1516	LR3D1516A1	
12-18	D18-D32	LRD21	LR3D021	LRD1521	LR3D1521A1	
16-24	D25-D32	LRD22	LR3D22	—	—	
17-25	D25-D32	—	—	—	LR3D1522A1	
23-32	D25-D32	LRD32	LR3D32	—	—	73.00
23-28	D25-D32	—	—	LRD1530	LR3D1530A1	
25-32	D25-D32	—	—	LRD1532	LR3D1532A1	
30-38	D32	LRD35	LR3D35	—	—	107.00
17-25	D40-D80	LRD3322	LR3D3322	LR2D3522	LR3D3522	
23-32	D40-D80	LRD3353	LR3D3353	LR2D3553	LR3D3553	
30-40	D40-D80	LRD3355	LR3D3355	LR2D3555	LR3D3555	
37-50	D50-D80	LRD3357	LR3D3357	LR2D3557	LR3D3557	
48-65	D50-D80	LRD3359	LR3D3359	LR2D3559	LR3D3559	
55-70	D65-D80	LRD3361	LR3D3361	LR2D3561	LR3D3561	127.00
63-80	D65-D80	LRD3363	LR3D3363	LR2D3563	LR3D3563	
80-104	D80	LRD3365	—	—	—	
80-104	D115-D150	LRD4365	—	—	—	
95-120	D115-D150	LRD4367	—	—	—	362.00
110-140	D150	LRD4369	—	—	—	

Table 18.3: D-Line Overload Relays — Solid State

Current Setting Range Amperes	For Direct Mounting Beneath Contractor LC1	Class 10	Class 20	\$ Price
60-100	D115-D150	LR9D5367	LR9D5567	298.00
90-150	D115-D150	LR9D5369	LR9D5569	298.00

D-Line contactor accessories pages 18-6 to 18-9
D-Line overload relay accessories page 18-14
D-Line replacement coils pages 18-16 to 18-18
Dimensions pages 18-40 to 18-46

18 IEC CONTACTORS AND STARTERS



LC1D09



LC1D093



LC1D115



LRD22



LC1F115

Table 18.4: 2-, 3-, and 4-Pole Contactors

Standard power ratings of 3-phase motors 50/60 Hz in category AC-3				Maximum Current		Number of Poles	Catalog Number ▲ Panel Mount with Screws	\$ Price
200 V 208 V	220 V 240 V	460 V 480 V	575 V 600 V	AC-3	AC-1			
HP	HP	HP	HP	A	A			
30	40	75	100	115	200	3	LC1F115	479.00
						4	LC1F1154	630.00
40	50	100	125	150	250	3	LC1F150	696.00
						4	LC1F1504	825.00
50	60	125	150	185	275	3	LC1F185	938.00
						4	LC1F1854	1439.00
Current Rated				225	315	3	LC1F225	1167.00
						4	LC1F2254	1935.00
60	75	150	175	265	350	3	LC1F265	1179.00
						4	LC1F2654	1646.00
75	100	200	250	330	400	3	LC1F330	1621.00
						4	LC1F3304	1846.00
100	125	250	300	400	500	2	LC1F4002	1521.00
						3	LC1F400	1874.00
150	200	400	500	500	700	4	LC1F4004	2133.00
						2	LC1F5002	4324.00
250	300	600	800	630	1000	3	LC1F500	4970.00
						4	LC1F5004	5617.00
Current Rated				780	1600	2	LC1F6302	5917.00
						3	LC1F630	6872.00
—	450	800	900	800	1000	4	LC1F6304	7582.00
						3	LC1F780	7788.00
Current Rated				780	1600	4	LC1F7804	9940.00
						3	LC1F800	6676.00

Table 18.5: 3-Phase Overload Relays — Solid State Separate Mount ■

Current Setting Range Amps	For Direct Mounting to Contactor LC1●●●●/CR1F●●●●	Class 10 Trip ♦ Catalog Number	Class 20 ♦ Catalog Number	\$ Price
30–50	F115–F185	LR9F5357	LR9F5557	298.00
48–80	F115–F185	LR9F5363	LR9F5563	298.00
60–100	F115–F185	LR9F5367	LR9F5567	298.00
90–150	F115–F185	LR9F5369	LR9F5569	298.00
132–220	F185 ★ –F265	LR9F5371	LR9F5571	298.00
200–330	F265–F500	LR9F7375 ■	LR9F7575 ■	333.00
300–500	F265–F500	LR9F7379 ■	LR9F7579 ■	737.00
380–630	F400–F630	LR9F7381 ■	LR9F7581 ■	905.00

- ▲ Complete part number by adding coil voltage code from table below. For example: LC1F115G7. All contactors (except F780) include 1 N.O. coil interlock contact.
- When mounting overload relays LR9F5●57 to LR9F5●71 directly beneath the contactor, supporting the relays with a mounting plate is recommended. With overload relays LR9F7●75 to LR9F7●81, use of a support mounting plate is mandatory.
- ♦ IEC standard 60947-4 specifies the following trip times when the overload relay senses 7.2 times the setting current:
Class 10 — between 4 and 10 seconds
Class 20 — between 6 and 20 seconds
- ★ Interconnection kit LA7F407 is required to mount an LR9F●71 to an LC1F185.

Table 18.6: Coil Voltage Codes ♦

Contactor	Hz	24 V	48 V	110 V	120 V	125 V	208 V	220 V	240 V	250 V	440 V	480 V	600 V
AC													
D09–D150	50/60	B7	E7	F7	G7	—	LE7	M7	U7	—	—	T7 ▼	X7 ▼△
LC1D40–LC1D150 only	60	B6	E6	F6	G6	—	L6	M6	U6	—	—	T6	X6 △
	50	B5	E5	F5	—	—	—	M5 ▼	U5	—	—	—	—
F115, F150, and F185	50	B5	E5	F5	—	—	—	M5	U5	—	—	—	—
	60	B6	E6	F6	G6	—	L6	M6	U6	—	—	Q5	SC
F265, and F330	40–400	B7	E7	F7	G7	—	L7	M7	U7	—	—	S7★	X7
F400–F780	40–400	—	E7	F7	G7	—	L7	M7	U7	—	—	N7	X7 □
DC													
D09–D32 Low Consumption	—	BL	EL	FL	—	—	—	ML	—	UL	—	—	—
D09–D150	—	BD	ED	FD	—	GD	—	MD	—	UD	RD	—	—
F115–F330	—	BD	ED	FD	—	GD	—	MD	—	UD	RD	—	—
F400–F780	—	—	ED	FD	—	GD	—	MD	—	UD	RD	—	—

- ▼ Not available for LC1D40 - LC1D150
- △ Not available for LC1D115 or LC1D150
- Not available for LC1F780
- The 600 V coils for the LC1F400 - LC1F630 do not include an auxiliary contact for holding circuits.
- ♦ For additional voltage codes refer to the IEC Contactor and Starter Catalog 8502CT9901.
- ★ For use with F265–F330 only.

Table 18.7: Coil Voltage Codes for AC and DC Voltages for F800 (includes built-in surge suppressor)

Volts AC/DC	24	48	110	120	127	208	220	240	277	380	415	440	480	575	600	660
50/60 HZ	—	—	FW	FW	FW	—	MW	MW	—	QW	QW	QW	—	—	—	—

F-Line contactor accessoriespage 18-9
 F-Line overload relay accessoriespage 18-14
 F-Line replacement coils and parts pages 18-11, 18-17, 18-19
 Dimensions pages 18-42 to 18-49

18 IEC CONTACTORS AND STARTERS



LRD22

Ambient Compensated bi-metallic overload relays

LRD overload relays are designed for direct mounting to D-line contactors. To mount these overloads separately, select separate mount kits from the table below.

D-Line overload relays

Current Setting Range Amperes	For direct mounting to LC1●●●	Class 10 with Single Phase Sensitivity	Class 10 without Single Phase Sensitivity	Class 20 with Single Phase Sensitivity	Class 20 without Single Phase Sensitivity	Price
.10-.16	D09-D32	LRD01	LR3D01	\$ 60.00
.16-.25	D09-D32	LRD02	LR3D02	...	...
.25-.40	D09-D32	LRD03	LR3D03	...	...
.40-.63	D09-D32	LRD04	LR3D04	...	...
.63-1	D09-D32	LRD05	LR3D05	...	...
1-1.6	D09-D32	LRD06	LR3D06	...	...
1.6-2.5	D09-D32	LRD07	LR3D07	...	...
2.5-4	D09-D32	LRD08	LR3D08	LRD1508	LR3D1508A1	
4-6	D09-D32	LRD10	LR3D10	LRD1510	LR3D1510A1	
5-8	D09-D32	LRD12	LR3D12	LRD1512	LR3D1512A1		62.00
7-10	D09-D32	LRD14	LR3D14	LRD1514	LR3D1514A1	
9-13	D12-D32	LRD16	LR3D16	LRD1516	LR3D1516A1	
12-18	D18-D32	LRD21	LR3D21	LRD1521	LR3D1521A1	
16-24	D25-D32	LRD22	LR3D22	...	...
17-25	D25-D32	...	...	LRD1522	LR3D1522A1
23-32	D25-D32	LRD32	LR3D32	73.00
23-28	D25-D32	...	...	LRD1530	LR3D1530A1
25-32	D25-D32	...	...	LRD1532	LR3D1532A1
30-38	D32	LRD35	LR3D35	...	...
17-25	D40-D80	LRD3322	LR3D3322	LR2D3522	LR3D3522	107.00
23-32	D40-D80	LRD3353	LR3D3353	LR2D3553	LR3D3553	
30-40	D40-D80	LRD3355	LR3D3355	LR2D3555	LR3D3555	
37-50	D50-D80	LRD3357	LR3D3357	LR2D3557	LR3D3557	
48-65	D50-D80	LRD3359	LR3D3359	LR2D3559	LR3D3559	
55-70	D65-D80	LRD3361	LR3D3361	LR2D3561	LR3D3561	127.00
63-80	D65-D80	LRD3363	LR3D3363	LR2D3563	LR3D3563	
80-104	D80	LRD3365	...	...	...
80-104	D115-D150	LRD4365	362.00
95-120	D115-D150	LRD4367	...	...	...
110-140	D150	LRD4369	...	...	...

Mounting Kits and Plates▲

Description	For use with overload relays:	Catalog Number	Price
Separate mounting kits for mounting to 35 mm omega rail or for panel mounting with screws	LRD01-35 and LR3D01-35	LAD7B10	\$ 8.70
	LRD15●●	LAD7B105	10.40
	LR2D15●●●	LA7D1064	8.70
	LR2D25●●●	LA7D2064	13.10
	LRD3●●●, LR3D3●●●, LR2D35●●●	LA7D3064	17.50
Mounting plates for screw mounting at 110 mm (4.3") centers	LRD01-35, LR3D01-35, LR2D15●●	DX1AP25	11.00
	LR2D25●●	DX1AP26	12.00
	LRD3●●●, LR3D3●●●, LR2D35●●	LA7D902	16.40

▲ When using mounting plates, separate mounting kits are also required.

Accessories

Description	For use with	Standard Packaging	Catalog Number	Price
Pre wiring kit allows direct connection of the N.C. contact of relay LRD01-D32 or LR3D01-D32 to the contactor	LC1D09 through D18	10	LAD7C1	\$ 8.70
	LC1D25, D32	10	LAD7C2	8.70
Stop button locking device	All relays except LRD01-D32, LR3D01-D32 and LR9D	10	LA7D901	2.20
Remote stop/tripping or electrical reset◆	LRD01-D32, LR3D01-32	1	LAD703■	43.70
	All relays except LRD01-D32, LR3D01-D31	1	LA7D03■	43.70
Reset by flexible cable 500 mm (19.6 in.)	LRD01-D32	1	LAD7305	100.00

■ Part number to be completed by adding coil voltage code.

Control Circuit Voltages for LA7D03 and LAD703

Volts	12	24	48	110	220/230	380/400	415/440
AC 50/60 Hz	J★	B	E	F	M	Q	N
DC	J	B	E	F	M	...	...

◆ The time that the LA7D03 can remain energized depends on its rest time; 1 s pulse with 9 s rest time; 5 s pulse with 30 s rest time; 10 s pulse with 90 s rest time; maximum pulse duration of 20 s with rest time of 300 s. Consumption on inrush and sealed : < 100 VA
★ Not available for LRD01-D32, LR3D01-D32.



LA7D901



LA7D03

Dimensions..... page 16-30

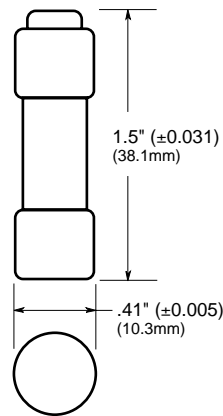
For additional information, reference Catalog #8502CT9901R5/03.

LOW-PEAK® Time-Delay Fuses Class CC – 600 Volt, ½ to 30 Amps

LP-CC



Dimensional Data



Catalog Symbol: LP-CC

Time-Delay, Current-Limiting

Ampere Rating: ½ to 30 Amperes

AC Voltage Rating: 600 Volts (or less)

Interrupting Rating: 200,000A RMS Sym.

Agency Approvals:

U.L. Listed, Std. 248-4, Class CC, Guide JDDZ, File E4273
CSA Certified, C22.2 No. 248.4, Class 1422-02, File 53787

DC Voltage Rating: 300 Volt DC (or less)

½-2¼A and 20-30A, 20,000 AIR, U.L. 198L

150 Vdc or less 3-15A, 20,000 AIR, U.L. 198L

Catalog Numbers

LP-CC-½	LP-CC-1½	LP-CC-3	LP-CC-6	LP-CC-12
LP-CC-¾	LP-CC-1¾	LP-CC-3¾	LP-CC-6¾	LP-CC-15
LP-CC-9/10	LP-CC-19/10	LP-CC-3½	LP-CC-7	LP-CC-20
LP-CC-1	LP-CC-2	LP-CC-4	LP-CC-7½	LP-CC-25
LP-CC-1¼	LP-CC-2¼	LP-CC-4½	LP-CC-8	LP-CC-30
LP-CC-1¾	LP-CC-2½	LP-CC-5	LP-CC-9	—
LP-CC-19/10	LP-CC-29/10	LP-CC-5¾	LP-CC-10	—

Carton Quantity and Weight

Ampere Ratings	Carton Qty.	Weight*	
		Lbs.	Kg.
0-30	10	.193	.088

*Weight per carton.

Fuseblock Catalog Numbers

No. of Poles	Screw Terminal	Pressure Plate	Box Terminal	Screw Quick-Connect	Pressure Quick-Connect
1	BC6031S	BC6031P	BC6031B	BC6031SQ	BC6031PQ
2	BC6032S	BC6032P	BC6032B	BC6032SQ	BC6032PQ
3	BC6033S	BC6033P	BC6033B	BC6033SQ	BC6033PQ

General Information:

LP-CC LOW-PEAK Yellow™ Fuse

- A superior all-purpose, space-saving branch circuit fuse that meets most protection requirements up to 30 amps.
- Very compact; physical size is only 1⅜" x 1½" (10.3mm x 38.1mm) with rejection tip.
- The unique yellow color makes it easy to tell that the correct fuse type is installed.
- Faster response to damaging short-circuit currents and higher interrupting rating than mechanical overcurrent protective devices.

200,000 Ampere Interrupting Rating

- Maximum interrupting rating for available fault current in today's large capacity systems.
- Helps ensure that future growth will not obsolete the system.

Dual Characteristics

- Time-delay to avoid unwanted fuse openings from surge currents.
- Fast speed of response under short-circuit conditions for a high degree of current-limitation.
- **ADVANTAGE:** The LOW-PEAK® fuse can be sized close to full load ratings for maximum overload and short-circuit protection.
- **ADVANTAGE:** Can be used where either a time-delay or a fast-acting fuse is needed, making selection easier and reducing spare fuse inventories for substantial cost reduction.

Superior Motor Protection

- For protection of small horsepower motor circuits.
- Proper sizing can provide Type "2" coordinated protection for NEMA and IEC motor controllers.
- Motors receive maximum protection against burnout from overloads and single phasing.

Current-Limiting Effects

Prospective Short-Circuit Current	*Let-Through Current (Apparent RMS Symmetrical)					
	1¼A	29/10A	15A	20A	25A	30A
1,000	100	135	240	305	380	435
3,000	140	210	350	440	575	580
5,000	165	255	420	570	690	710
10,000	210	340	540	700	870	1,000
20,000	260	435	680	870	1,090	1,305
30,000	290	525	800	1,030	1,300	1,520
40,000	315	610	870	1,150	1,390	1,700
50,000	340	650	915	1,215	1,520	1,820
60,000	350	735	1,050	1,300	1,650	1,980
80,000	390	785	1,130	1,500	1,780	2,180
100,000	420	830	1,210	1,600	2,000	2,400
200,000	525	1,100	1,600	2,000	2,520	3,050

*RMS Symmetrical Amperes Short-Circuit

NOTE: To calculate I_p (I_{peak}) multiply I_{RMS} value x 2.3.

CE CE logo denotes compliance with European Union Low Voltage Directive (50-1000 Vac, 75-1500 Vdc). Refer to BIF document #8002 or contact Bussmann Application Engineering at 314-527-1270 for more information.

Refer to Catalog 8501CT0601

Zelio® Plug-In Relays

Zelio RXM plug-in relays and sockets provide a comprehensive selection of relays responding to the most demanding standards ranging from 3A to 12A. Some of the features include:

- Spring return test button for testing the contacts (standard)
- Green LED indication of relay status (depending on version)

- Mechanical indication of relay status (standard)
- Plug-in protection module to protect against electrical spikes
- Plug-in jumper bars for coil terminals to avoid time-consuming wiring



RXM2AB1F7

Table 23.1: Miniature relays without LED (sold in lots of 10)

Coil Voltage	Number and type of contacts - Thermal current (Ith)					
	2 C/O - 12 A Res.		3 C/O - 10 A Res.		4 C/O - 8 A Res.	
	Catalog Number	\$ Price ea.	Catalog Number	\$ Price ea.	Catalog Number	\$ Price ea.
12 Vdc	RXM2AB1JD	6.30	RXM3AB1JD	6.80	RXM4AB1JD	7.10
24 Vdc	RXM2AB1BD	6.30	RXM3AB1BD	6.80	RXM4AB1BD	7.10
48 Vdc	RXM2AB1ED	6.30	RXM3AB1ED	6.80	RXM4AB1ED	7.10
110 Vdc	RXM2AB1FD	6.30	RXM3AB1FD	6.80	RXM4AB1FD	7.10
220 Vdc	—	—	—	—	RXM4AB1MD	7.10
24 Vac	RXM2AB1B7	6.30	RXM3AB1B7	6.80	RXM4AB1B7	7.10
48 Vac	RXM2AB1E7	6.30	RXM3AB1E7	6.80	RXM4AB1E7	7.10
120 Vac	RXM2AB1F7	6.30	RXM3AB1F7	6.80	RXM4AB1F7	7.10
230 Vac	RXM2AB1P7	6.30	RXM3AB1P7	6.80	RXM4AB1P7	7.10
240 Vac	—	—	—	—	RXM4AB1U7	7.10

Table 23.2: Miniature relays with LED (sold in lots of 10)

Coil Voltage	Number and type of contacts - Thermal current (Ith)					
	2 C/O - 12 A Res.		3 C/O - 10 A Res.		4 C/O - 8 A Res.	
	Catalog Number	\$ Price ea.	Catalog Number	\$ Price ea.	Catalog Number	\$ Price ea.
12 Vdc	RXM2AB2JD	7.40	RXM3AB2JD	7.80	RXM4AB2JD	8.10
24 Vdc	RXM2AB2BD	7.40	RXM3AB2BD	7.80	RXM4AB2BD	8.10
48 Vdc	RXM2AB2ED	7.40	RXM3AB2ED	7.80	RXM4AB2ED	8.10
110 Vdc	RXM2AB2FD	7.40	RXM3AB2FD	7.80	RXM4AB2FD	8.10
125 Vdc	—	—	—	—	RXM4AB2GD	8.10
24 Vac	RXM2AB2B7	7.40	RXM3AB2B7	7.80	RXM4AB2B7	8.10
48 Vac	RXM2AB2E7	7.40	RXM3AB2E7	7.80	RXM4AB2E7	8.10
120 Vac	RXM2AB2F7	7.40	RXM3AB2F7	7.80	RXM4AB2F7	8.10
230 Vac	RXM2AB2P7	7.40	RXM3AB2P7	7.80	RXM4AB2P7	8.10

Table 23.3: Miniature relays with LED without Push Button (sold in lots of 10)

Coil Voltage	Number and type of contacts - Thermal current (Ith)					
	2 C/O - 12 A Res.		3 C/O - 10 A Res.		4 C/O - 8 A Res.	
	Catalog Number	\$ Price ea.	Catalog Number	\$ Price ea.	Catalog Number	\$ Price ea.
12 Vdc	RXM2AB3JD	6.80	—	—	RXM4AB3JD	7.50
24 Vdc	RXM2AB3BD	6.80	—	—	RXM4AB3BD	7.50
48 Vdc	RXM2AB3ED	6.80	—	—	RXM4AB3ED	7.50
110 Vdc	RXM2AB3FD	6.80	—	—	RXM4AB3FD	7.50
125 Vdc	—	—	—	—	RXM4AB3GD	7.50
24 Vac	RXM2AB3B7	6.80	—	—	RXM4AB3B7	7.50
48 Vac	RXM2AB3E7	6.80	—	—	RXM4AB3E7	7.50
120 Vac	RXM2AB3F7	6.80	—	—	RXM4AB3F7	7.50
230 Vac	RXM2AB3P7	6.80	—	—	RXM4AB3P7	7.50

Table 23.4: Miniature relays with low level contacts, without LED (sold in lots of 10)

Number and type of contacts - Thermal current (Ith)		
4 C/O - 3 A Res.		
Coil Voltage	Catalog Number	\$ Price ea.
12 Vdc	RXM4GB1JD	7.10
24 Vdc	RXM4GB1BD	7.10
48 Vdc	RXM4GB1ED	7.10
110 Vdc	RXM4GB1FD	7.10
24 Vac	RXM4GB1B7	7.10
48 Vac	RXM4GB1E7	7.10
120 Vac	RXM4GB1F7	7.10
230 Vac	RXM4GB1P7	7.10

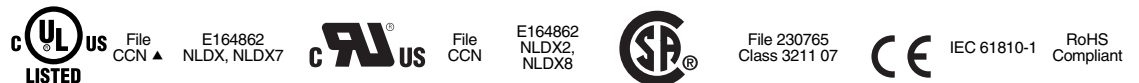
Table 23.6: Miniature relays with low level contacts, with LED without Push Button (sold in lots of 10)

Number and type of contacts - Thermal current (Ith)		
4 C/O - 3 A Res.		
Coil Voltage	Catalog Number	\$ Price ea.
12 Vdc	RXM4GB3JD	7.50
24 Vdc	RXM4GB3BD	7.50
48 Vdc	RXM4GB3ED	7.50
110 Vdc	RXM4GB3FD	7.50
125 Vdc	—	—
24 Vac	RXM4GB3B7	7.50
48 Vac	RXM4GB3E7	7.50
120 Vac	RXM4GB3F7	7.50
230 Vac	RXM4GB3P7	7.50

Table 23.5: Miniature relays with low level contacts, with LED (sold in lots of 10)

Number and type of contacts - Thermal current (Ith)		
4 C/O - 3 A Res.		
Coil Voltage	Catalog Number	\$ Price ea.
12 Vdc	RXM4GB2JD	8.10
24 Vdc	RXM4GB2BD	8.10
48 Vdc	RXM4GB2ED	8.10
110 Vdc	RXM4GB2FD	8.10
24 Vac	RXM4GB2B7	8.10
48 Vac	RXM4GB2E7	8.10
120 Vac	RXM4GB2F7	8.10
230 Vac	RXM4GB2P7	8.10
240 Vac	RXM4GB2U7	8.10

Approvals for Relays:



▲ When used with the appropriate socket.

For sockets and accessories, see page 23-3



RXM4GB2F7



RXZE2M114M with Relay RXM4AB2P7TQ

Table 23.7: Miniature relays (sold in lots of 100)

Coil Voltage	Number and type of contacts - Thermal current (Ith)			
	2 C/O - 12 A Res.		4 C/O - 8 A Res.	
	Catalog Number	\$ Price ea.	Catalog Number	\$ Price ea.
Without LED				
12 Vdc	—	—	RXM4AB1JDTQ	7.10
24 Vdc	RXM2AB1BDTQ	6.30	RXM4AB1BDTQ	7.10
48 Vdc	—	—	RXM4AB1EDTQ	7.10
110 Vdc	—	—	RXM4AB1FDTQ	7.10
220 Vdc	—	—	RXM4AB1MDTQ	7.10
24 Vac	RXM2AB1B7TQ	6.30	RXM4AB1B7TQ	7.10
48 Vac	—	—	RXM4AB1E7TQ	7.10
120 Vac	RXM2AB1F7TQ	6.30	RXM4AB1F7TQ	7.10
230 Vac	RXM2AB1P7TQ	6.30	RXM4AB1P7TQ	7.10
With LED				
24 Vdc	—	—	RXM4AB2BDTQ	8.10
24 Vac	RXM2AB2B7TQ	7.40	RXM4AB2B7TQ	8.10
230 Vac	RXM2AB2P7TQ	7.40	RXM4AB2P7TQ	8.10

Table 23.8: Miniature relays with LED without Push Button (sold in lots of 100)

Coil Voltage	Number and type of contacts - Thermal current (Ith)			
	2 C/O - 12 A Res.		4 C/O - 8 A Res.	
	Catalog Number	\$ Price ea.	Catalog Number	\$ Price ea.
24 Vdc	RXM2AB3BDTQ	6.80	RXM4AB3BDTQ	7.50
24 Vac	RXM2AB3B7TQ	6.80	RXM4AB3B7TQ	7.50
230 Vac	RXM2AB3P7TQ	6.80	RXM4AB3P7TQ	7.50

Table 23.9: Sockets (sold in lots of 10)

Contact terminal arrangement	Connection	Relay type	Catalog Number	\$ Price ea.
Mixed	Screw clamp terminals	RXM2*****▲ RXM4*****▲	RXZE2M114 ■	5.90
	Box lug connector	RXM2***** RXM4*****	RXZE2M114M ■	5.90
Separate	Box lug connector	RXM2*****	RXZE2S108M ◆	5.90
		RXM3*****	RXZE2S111M ■	5.90
		RXM4*****	RXZE2S114M ■	5.90

- ▲ When mounting relay RXM2***** on socket RXZE2M****, the thermal current must not exceed 10 A.
- Thermal current Ith: 10 A
- ◆ Thermal current Ith: 12 A



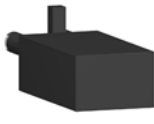
RXZE2S114M with relay RXM4AB2F7TQ

Table 23.10: Protection modules (sold in lots of 20)

Description	Voltage	For use with	Catalog Number	\$ Price ea.
Diode	6–250 Vdc	All sockets	RXM040W	2.30
RC circuit	24–60 Vac	All sockets	RXM041BN7	2.30
	110–240 Vac	All sockets	RXM041FU7	2.30
Varistor	6–24 Vac/Vdc	All sockets	RXM021RB	2.30
	24–60 Vac/Vdc	All sockets	RXM021BN	2.30
	110–240 Vac/Vdc	All sockets	RXM021FP	2.30

Table 23.11: Accessories (sold in lots of 10)

Description	For use with	Catalog Number	\$ Price ea.
Metal hold-down clip	All sockets	RXZ400	.57
Plastic hold-down clip	All sockets	RXZR335	.57
Bus jumper, 2-pole (Ith: 5 A)	All sockets with separate contacts	RXZS2	.84
Mounting adapter for DIN rail	All relays	RXZE2DA	.84
Mounting adapter for mounting directly to a panel	All relays	RXZE2FA	.57
Clip-in markers	All relays (sheet of 108 markers)	RXZL520	.05
	All sockets except RXZE2M114	RXZL420	.05



RXM041BN7



RXZ400

Approvals for Sockets:



File CCN E172326 SWIV2, SWIV8



File 230765 Class 3211 07



IEC 61810-1 RoHS Compliant

Zelio Time - timing relays

Modular relays with solid state or relay output, width 17.5 mm/0.689 in.

Solid state output

- Multifunction, dual function or single function
- Multi-range (7 selectable ranges)
- Multivoltage
- Solid state output: 0.7 A
- Screw terminals

PF121100A



RE17LAMW

PF121100B



RE17LLBM

Modular relays with solid state output 0.7 A

Single function

Timing ranges	Functions	Voltages V	Reference	Weight kg/lb
1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	A	≈ 24...240	RE17LAMW	0.060/ 0.132
	H	~ 24...240	RE17LHBM	0.060/ 0.132
	C	~ 24...240	RE17LCBM	0.060/ 0.132

Dual function

1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	L, Li	~ 24...240	RE17LLBM	0.060/ 0.132
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Multifunction

1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	A, At, B, C, H, Ht, D, Di, Ac, Bw	~ 24...240	RE17LMBM	0.060/ 0.132
--	--	------------	----------	-----------------

Relay output, 1 C/O contact

- Dual function or single function
- Multi-range (7 selectable ranges)
- Multivoltage
- 1 relay output: 8 A
- Screw terminals
- State indication by 1 LED
- Option of supplying a load in parallel
- 3-wire sensor control option

PF121113A



RE17R0M

Modular relays with relay output, 1 C/O contact

Single function

Timing ranges	Functions	Voltages V	Reference	Weight kg/lb
1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	B	≡ 24 / ~ 24...240	RE17RBMU	0.070/ 0.154
	C	≡ 24 / ~ 24...240	RE17RCMU	0.070/ 0.154

Dual function

1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	A, At	≡ 24 / ~ 24...240	RE17RAMU	0.070/ 0.154
	H, Ht	≡ 24 / ~ 24...240	RE17RHMU	0.070/ 0.154
	L, Li	≡ 24 / ~ 24...240	RE17RLMU	0.070/ 0.154
		≈ 12	RE17RLJU	0.070/ 0.154

Multifunction

1 s, 10 s, 1 min, 10 min, 1 h, 10 h, 100 h	A, At, B, C, H, Ht, D, Di, Ac, Bw	≈ 12	RE17RMJU	0.070/ 0.154
		≡ 24 / ~ 24...240	RE17RMMU	0.070/ 0.154
		≈ 12...240	RE17RMMW	0.070/ 0.154
			RE17RMMWS	0.070/ 0.154
	Ad, Ah, N, O, P, Pt, T, Tt, W	≡ 24 / ~ 24...240	RE17RMXMU	0.070/ 0.154
1 s, 10 s, 1 min, 10 min, 1 h, 10 h	A, At, B, C, H, Ht, D, Di	≡ 24 / ~ 24...240	RE17RMEMU	0.070/ 0.154

Explosion-Proof Pilot Devices

Nema Type 4, 4X, 7 & 9

2 & 3 Position Push-Pull Switch Operators

Specifications



2 Position Push-Pull Switch Operator
XPPPS-2GE

X P P P S - 2 R A - F S (-CEN)
a b c d e f ATEX Optional

a = Barrel Type

Code	Description
S	Short Barrel
L	Long Barrel

b = Number of Positions

Code	Description
2	2-Position
3	3-Position

c = **Mushroom Heads

Code	Description
Blank	Standard Mushroom Head
J	Jumbo Mushroom Head

Note: To engrave mushroom heads, C/F

d = Button Color

Code	Description
G	Green
R	Red

e = Contact Blocks

Code	Description
Blank	No Contacts
A	1 N.O.
B	1 N.C.
2A	2 N.O.
2B	2 N.C.
C	1 N.O. / 1 N.C.
*D	2 N.O. / 2 N.C.
E	1 N.C.L.B.
F	1 N.O.E.M.
2E	2 N.C.L.B.
2F	2 N.O.E.M.
*G	1 N.O. / 1 N.C.L.B.
*H	1 N.C. / 1 N.C.L.B.
*J	3 N.O. / 3 N.C.
*K	4 N.O. / 4 N.C.
L	N.O.E.M.-N.C.
M	N.O.E.M.-N.O.
N	N.C.L.B.-N.O.E.M.
P	2 N.O. / 2 N.C. (300V)

f = Accessories

Code	Description
-FS	Finger Safe Option

CONTACT ABBREVIATION

N.O.= Normally Open
 N.C.= Normally Closed
 N.C.L.B.= Normally Closed- Late Break
 N.O.E.M.= Normally Open- Early Make
 E.C.N.O.= Early Close-Normally Open
 L.O.N.C.= Late Open-Normally Closed

All contact blocks are rated 600V unless noted.

N4= NEMA 4 locking collar is standard on all Akron Electric operators

3/4"-14 NPSM standard thread

Pushbuttons can also be used with Allen Bradley or C3 Controls contact blocks. (C/F)

*Denotes multiple block configuration

**Mushroom heads are made of Anodized Aluminum



Explosion-Proof Pilot Devices

Nema Type 4, 4X, 7 & 9

XP 2 & 3 Position Push-Pull Operators Dimensional Data

Dimensions (Inches [mm])

Note: All dimensions are for reference only



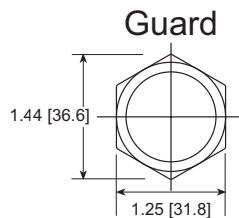
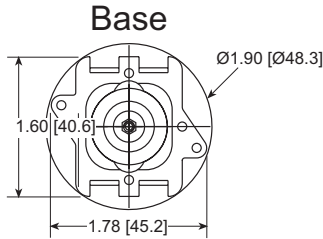
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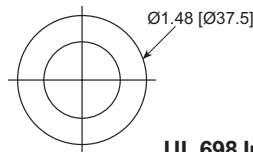
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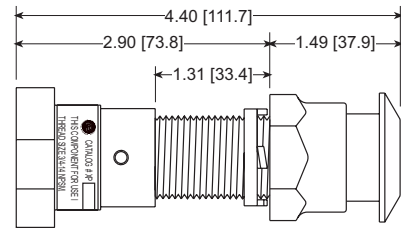
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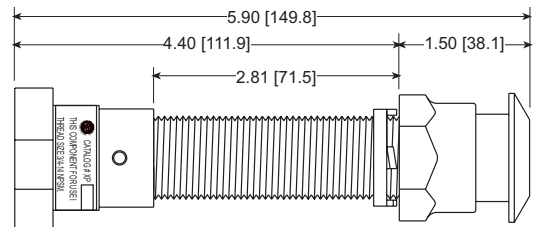
Mushroom Head Cap



Short Barrel



Long Barrel



Push-Pull Operator
ex. XPPPL-2JR

CLASS I, Div 1 & 2, GROUPS B, C & D;
CLASS II, Div 1 & 2, GROUPS E, F & G;
CLASS III,
NEMA TYPE 4, 4X, 7 & 9

UL 698 Industrial Control Equipment in Hazardous (Classified) Locations.

UL 1203 Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations.

CSA C22.2 No. 30-LR86146 Explosion-Proof Enclosures for use in Class I Hazardous locations.

FEATURES

- Operator bodies are black anodized & teflon impregnated.
- Operating Shafts are stainless steel.
- 3/4-14 NPSM threaded body size
- **Long Series:** Accommodates up to 2-1/2" thick enclosure wall thickness.
- **Short Series:** Accommodates up to 1" thick enclosure wall thickness.
- Explosion-Proof Operators are suitable for panel or surface mount applications.
- See Contact Block Information sheet for mounting and rating information.
- Mushroom Push Buttons are 1-1/2" Diameter Aluminum
- Jumbo 2-1/2" Dia. Aluminum Red Mushroom Button available
- Push-Pull Operator available 2 or 3 position

Explosion-Proof Pilot Devices

Nema Type 4, 4X, 7 & 9

Momentary Contact Pushbuttons

Specifications

XPBS - F G A - FS (-CEN)
a b c d e f g ATEX Optional

a = Push Button Heads

Code	Description
B	Standard Push Button Head
MH (red or green button only)	**Standard Mushroom Head-Metal
JMH (red button only)	**Jumbo Mushroom Head-Metal
JMHE (white print/red head)	**Jumbo "Emergency Stop" Engraved

b = Barrel Type

Code	Description
S	Short Barrel
L	Long Barrel

c = Operator Type

Code	Description
E	Extended Head
F	Flush Head
R	For MH / JMH

d = Button Color

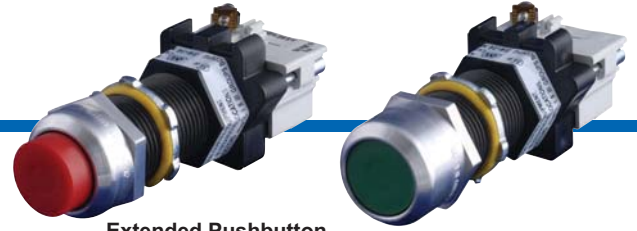
Code	Description
B	Black
BU	Blue
G	Green
R	Red
Y	Yellow

*Note: Does not apply for Jumbo

e = Rubber Boot

Code	Description
XPB-B	PB Black Boot with Guard
XPB-G	PB Green Boot with Guard
XPB-R	PB Red Boot with Guard
XPB-BU	PB Blue Boot with Guard
XPB-Y	PB Yellow Boot with Guard

*Note: This option replaces options C & D



Extended Pushbutton
XPBS-ERC

Flush Pushbutton
XPBS-FGC

f = Contact Blocks

Code	Description
Blank	No Contacts
A	1 N.O.
B	1 N.C.
2A	2 N.O.
2B	2 N.C.
C	1 N.O. / 1 N.C.
*D	2 N.O. / 2 N.C.
E	1 N.C.L.B.
F	1 N.O.E.M.
2E	2 N.C.L.B.
2F	2 N.O.E.M.
*G	1 N.O. / 1 N.C.L.B.
*H	1 N.C. / 1 N.C.L.B.
*J	3 N.O. / 3 N.C.
*K	4 N.O. / 4 N.C.
L	N.O.E.M.-N.C.
M	N.O.E.M.-N.O.
N	N.C.L.B.-N.O.E.M.
P	2 N.O. / 2 N.C. (300V)

g = Accessories

Code	Description
-FS	Finger Safe Option

CONTACT ABBREVIATION

N.O.= Normally Open
 N.C.= Normally Closed
 N.C.L.B.= Normally Closed- Late Break
 N.O.E.M.= Normally Open- Early Make

All contact blocks are rated 600V unless noted.

N4= NEMA 4 locking collar is standard on all Akron Electric operators

3/4"-14 NPSM standard thread

Pushbuttons can also be used with Allen Bradley or C3 Controls contact blocks. (C/F)

*Denotes multiple block configuration

**Mushroom heads are made of Anodized Aluminum (Green or Red Only). Jumbo comes in Red only.

X
P
&
X
M



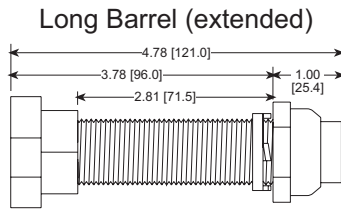
Explosion-Proof Pilot Devices

Nema Type 4, 4X, 7 & 9

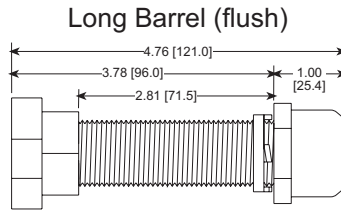
XP PUSHBUTTON OPERATORS DIMENSIONAL DATA

Dimensions (Inches [mm])

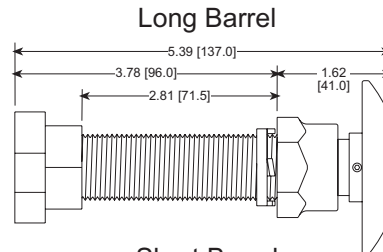
Note: All dimensions are for reference only



Long Barrel (extended)



Long Barrel (flush)



Long Barrel



LR86146

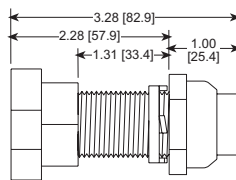


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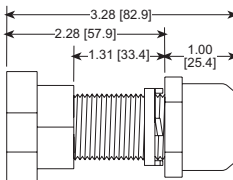


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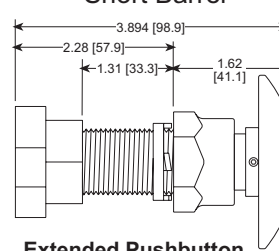
Short Barrel (extended)



Short Barrel (flush)



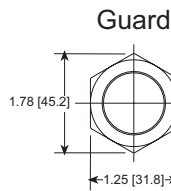
Short Barrel



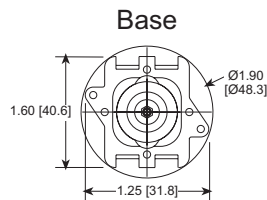
Extended Pushbutton
ex. XPBS-ER

Extended Pushbutton
ex. XPBS-FG

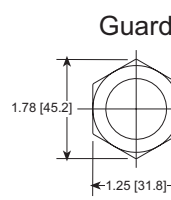
Extended Pushbutton
ex. XPJMHS-RA



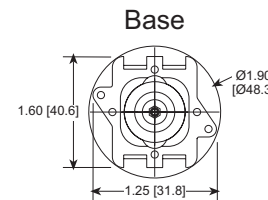
Guard



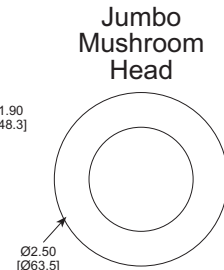
Base



Guard



Base



Jumbo
Mushroom
Head

Features

- Operator bodies are black anodized & teflon-impregnated.
- Operator shafts are stainless steel.
- 3/4-14 NPSM threaded body size.
- Explosion-proof operators are suitable for panel or surface mount applications
- **Long Series:** accommodates up to 2-1/2" thick enclosure wall thickness
- **Short Series:** accommodates up to 1" thick enclosure wall thickness
- Momentary pushbuttons are available in flush and extended versions.
- Momentary pushbuttons are molded thermoplastic protected by a machined aluminum guard.

**CLASS I, Div 1 & 2, GROUPS B, C & D;
CLASS II, Div 1 & 2, GROUPS E, F & G;
CLASS III;
NEMA TYPE 4, 4X, 7 & 9**

UL 698 Industrial Control Equipment for use in hazardous (Classified) locations.

UL 1203 Explosion-Proof and Dust-Ignition Proof Electrical Equipment for use in hazardous (Classified) locations.

CSA C22.2 No. 30-LR86146 Explosion-Proof Enclosures for use in Class I Hazardous locations.

ENM Counting Instruments > Hour Meters > T50 Quartz AC Hour Meter II. > Item # T50B212

Item # T50B212, with NEMA 4x12 Gasket

\$45.00 ([Quantity Discount](#) available)



[larger image](#)

with NEMA 4x12 Gasket

ENM's series T50 AC hour meter in a large 3-hole flange. Includes NEMA 4X. 12 rated panel gasket for water and corrosion resistant panel mounting (see accessories). A quartz crystal time base insures accurate time keeping. This model is also frequency insensitive.

Specifications

Series	T50
Display	6-Digit
Voltage	115 V AC
Reset	None
Size	1.68W x 1.68H x 1.26D Inch
Face Dia - Flange	2.8 Inch
Face Dia - Cutout	2 Inch
Weight	2 oz.
Mounting Style	3-Hole Panel
Power	Less than 0.4 W

[Print](#)

[Back](#)



Explosion-Proof Pilot Devices

Nema Type 4, 4X, 7 & 9

Pilot Lights LED

Specifications



Pigtail-Type Pilot Light
XPLSB-120G



Saddle Clamp Type Pilot Light
XPLSB-TT120G



Transformer Type Pilot Light
XPLSB-T120G

XPL SB - TT 120 R F - FS (-CEN)

a b c d e f ATEX Optional

a = Barrel Type

Code	Description
SB	Short Barrel
LB	Long Barrel

Code	Description
Blank	Pigtail
T	Transformer Type
TT	Saddle Clamp/Terminal Type

c = Voltage

Standard Pilot Light Code	Description
12	12 Volts AC/DC
24	24 Volts AC/DC
48	48 Volts AC/DC
120	120 Volts AC/DC
240	240 Volts AC/DC
Transformer Type Code	Description
9	240/120 Volts AC 50/60 Hz
120	120/12 Volts AC 50/60 Hz
240	240/12 Volts AC 50/60 Hz
380	380/12 Volts AC 50/60 Hz
440	440/12 Volts AC 50/60 Hz
480	480/12 Volts AC 50/60 Hz
600	600/12 Volts AC 50/60 Hz

d = LED Bulb Colors

Code	Color
A	AMBER
B	BLUE
G	GREEN
R	RED
W	WHITE

LED Replacement Bulbs

COLOR OF LED LAMP	VOLTAGE (VAC/DC)	REPLACEMENT P/N
AMBER	12	XPLB12A
BLUE	12	XPLB12B
GREEN	12	XPLB12G
RED	12	XPLB12R
WHITE	12	XPLB12W
AMBER	24	XPLB24A
BLUE	24	XPLB24B
GREEN	24	XPLB24G
RED	24	XPLB24R
WHITE	24	XPLB24W
AMBER	48	XPLB48A
BLUE	48	XPLB48B
GREEN	48	XPLB48G
RED	48	XPLB48R
WHITE	48	XPLB48W
AMBER	120	XPLB120A
BLUE	120	XPLB120B
GREEN	120	XPLB120G
RED	120	XPLB120R
WHITE	120	XPLB120W
AMBER	240	XPLB240A
BLUE	240	XPLB240B
GREEN	240	XPLB240G
RED	240	XPLB240R
WHITE	240	XPLB240W

e = Lamp Options

Code	Description
Blank	LED
F	Flashing

f = Accessory

Code	Description
-FS	Finger Safe on Terminal Type

N4= NEMA 4 locking collar is standard on all Akron Electric operators

3/4"-14 NPSM standard thread

X P & X M

Explosion-Proof Pilot Devices

Nema Type 4, 4X, 7 & 9

XP Pilot Light Operators Dimensional Data

Dimensions (Inches [mm])

Note: All dimensions are for reference only



LR86146

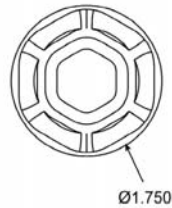


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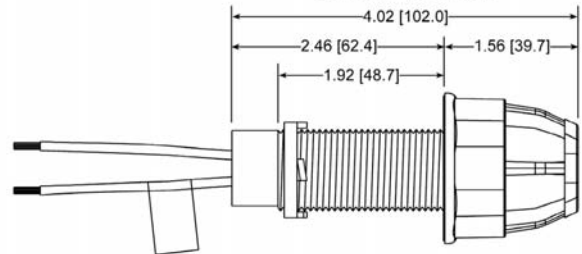


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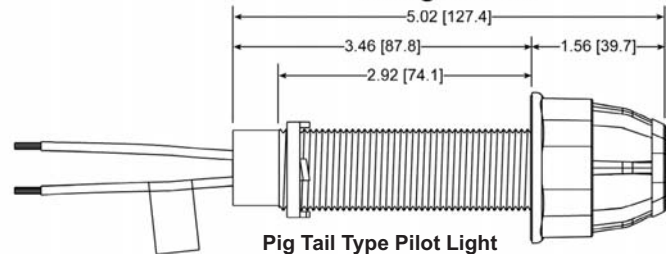
Lens Guard



Short Barrel



Long Barrel



Pig Tail Type Pilot Light
ex. XPLL-B-120A

CLASS I, Div 1 & 2, GROUPS B, C & D;
CLASS II, Div 1 & 2, GROUPS E, F & G;
CLASS III,
NEMA TYPE 4, 4X, 7 & 9

UL 698 Industrial Control Equipment in Hazardous (Classified) Locations.


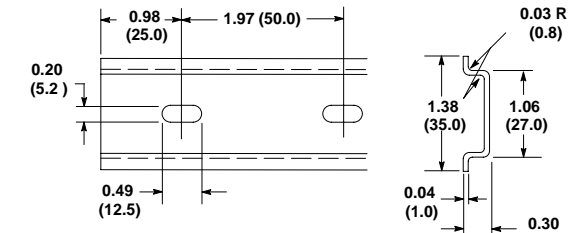

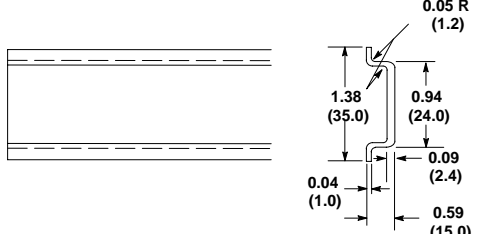

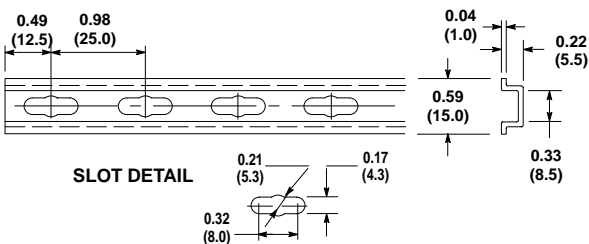

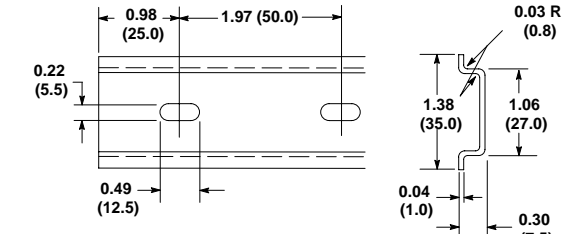
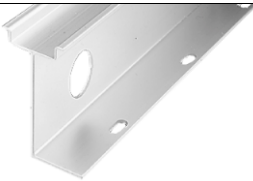
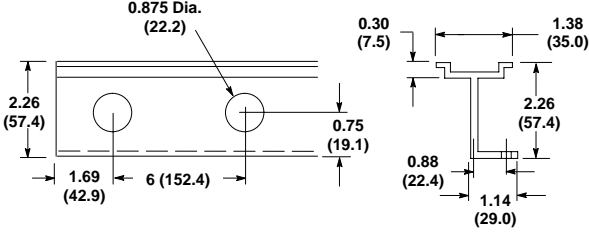

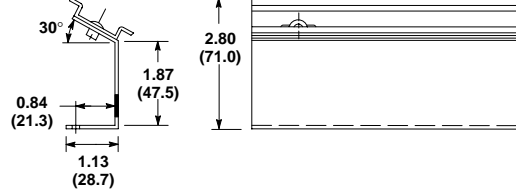
UL 1203 Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations.

CSA 22.2 No. 30-LR86146 Explosion-Proof Electrical Equipment for use in Hazardous Locations.

FEATURES

- XPL Transformer Series is equipped with bayonet base receptacles and 12 volt LED lamps
- 3/4-14 NPSM threaded body size.
- Explosion-Proof Pilot Lights are suitable for panel or surface mount applications.
- **Long Series:** Accommodates up to 2-1/2" thick enclosure wall thickness.
- **Short Series:** Accommodates up to 1-1/2" thick enclosure wall thickness.
- Standard 8" flexible leads for connection to contact blocks. (Consult Factory for custom lengths).
- Lens cap guard comes standard with a light gray powder coat finish.
- Standard sealed construction can be re-lamped from the front by removal of the lens guard. (Disconnect all power prior to performing this procedure).
- XP Pilot Light Series is equipped with bayonet receptacle bases and your choice of 12, 24, 48, 120 or 240 volt LED lamps.
- LED lamps have an operating life upwards of 100,000 hours @ 25 Deg. C ambient temperature. Specify voltage desired.
- Available light bulb colors are Red, White, Blue, Green and Amber.
- See Contact Block Information sheet for mounting and rating information.

DIN Mounting Rails

Item	Description	Pcs./Pkg.	Dimensions ①
<p>199-DR1</p> 	<p>Symmetrical Rail 35 mm x 7.5 mm 3.28' (1 m) long Zinc-Plated, Yellow Chromated Steel EN50022</p> <p>DIN #3</p>	<p>10</p>	 <p>#10–32 or M5 Recommended Maximum Mounting Screw Size</p>
<p>199-DR4</p> 	<p>Heavy Duty Symmetrical Rail 35 mm x 15 mm 3.28' (1 m) long Zinc-Plated, Yellow Chromated Steel EN50022</p> <p>DIN #3</p>	<p>5</p>	
<p>1492-DR3</p> 	<p>Mini 15 mm x 5.5 mm Rail 3.28' (1 m) long Zinc-Plated, Yellow Chromated Steel EN50045</p> <p>DIN #2</p>	<p>5</p>	 <p>#8–32 or M4 Recommended Maximum Mounting Screw Size</p>
<p>1492-DR5</p> 	<p>Symmetrical Rail 35 mm x 7.5 mm 3.28' (1 m) long Copper-Free Aluminum EN50022</p> <p>For 1492 Terminal Blocks Only</p> <p>DIN #3</p>	<p>10</p>	 <p>#12–24 or M5 Recommended Maximum Mounting Screw Size</p>
<p>1492-DR6 ②</p> 	<p>Symmetrical Rail 35 mm x 7.5 mm 2.26" (57.4 mm) high 3.28' (1 m) long Copper-Free Aluminum</p> <p>For 1492 Terminal Blocks Only</p> <p>DIN #3</p>	<p>2</p>	 <p>Wire insulator plug for wire access through rail — use Heyco</p>
<p>1492-DR7 ②</p> 	<p>Symmetrical Rail 35 mm x 7.5 mm 2.80" (71.0 mm) high 3.28' (1 m) long Angled 30° Zinc-Plated, Chromated Steel</p> <p>DIN #3</p>	<p>2</p>	 <p>For mounting rail details, see Cat. No. 199-DR1</p>

① Dimensions shown in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.
 ② 0.218" (5.5 mm) x 0.50" (12.7 mm) slotted mounting holes every 3" (76.2 mm) starting 1.69" (42.9 mm) from end.

Screw Connection Terminal Blocks

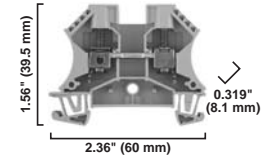
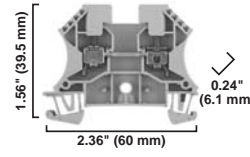
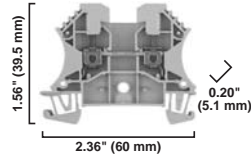
Standard Feed-Through Blocks

1492-J3

1492-J4

1492-J6

Dimensions are not intended to be used for manufacturing purposes.
Note: Height dimension is measured from top of rail to top of terminal block.



Specifications	Feed-Through Terminal Block				Feed-Through Terminal Block				Feed-Through Terminal Block			
Certifications												
Voltage Rating	600V AC/DC				600V AC/DC				600V AC/DC			
Maximum Current	65 A	50 A	24 A	21 A	35 A	25 A	32 A	28 A	50 A	41 A	36 A	
Wire Range (Rated Cross Section)	#22... 12 AWG	#26... 12 AWG	2.5 mm ²	2.5 mm ² (#20... 14 AWG)	#22... 10 AWG	#26... 10 AWG	4 mm ²	4 mm ² (#20... 12 AWG)	#22...8 AWG	6 mm ²	6 mm ² (#20... 10 AWG)	
Wire Strip Length	0.39 in. (10 mm)				0.39 in. (10 mm)				0.47 in (12 mm)			
Recommended Tightening Torque	4.5...7.1 lb•in. (0.5...0.8 N•m)				9.0 lb•in. (1.0 N•m)				14.2 lb•in (1.6 N•m)			
Density	59 pcs/ft (196 pcs/m)				49 pcs/ft (163 pcs/m)				37 pcs/ft (123 pcs/m)			
Housing Temperature Range	-58...+248 °F (-50...+120 °C)				-58...+248 °F (-50...+120 °C)				-58...+248 °F (-50...+120 °C)			
Short-Circuit Current Rating	See page 12-43											

Terminal Blocks	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.	
Color:	Grey	1492-J3	100	1492-J4	100	1492-J6	100
	Red	1492-J3-RE	100	1492-J4-RE	100	1492-J6-RE	100
	Blue	1492-J3-B	100	1492-J4-B	100	1492-J6-B	100
	Black	1492-J3-BL	100	1492-J4-BL	100	1492-J6-BL	100
	Green	1492-J3-G	100	1492-J4-G	100	1492-J6-G	100
	Yellow	1492-J3-Y	100	1492-J4-Y	100	1492-J6-Y	100
	Orange	1492-J3-OR	100	1492-J4-OR	100	1492-J6-OR	100
	Brown	1492-J3-BR	100	1492-J4-BR	100	1492-J6-BR	100
	White	1492-J3-W	100	1492-J4-W	100	1492-J6-W	100

Accessories	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.
Mounting Rails:						
1 m Symmetrical DIN (Steel)	199-DR1	10	199-DR1	10	199-DR1	10
1 m Symmetrical DIN (Aluminum)	1492-DR5	10	1492-DR5	10	1492-DR5	10
1 m Hi-Rise Sym. DIN (Aluminum)	1492-DR6	2	1492-DR6	2	1492-DR6	2
1 m Angled Hi-Rise Sym. DIN (Steel)	1492-DR7	2	1492-DR7	2	1492-DR7	2
End Barriers						
Grey	1492-EBJ3	50	1492-EBJ3	50	1492-EBJ3	50
Blue	1492-EBJ3-B	50	1492-EBJ3-B	50	1492-EBJ3-B	50
Yellow	1492-EBJ3-Y	50	1492-EBJ3-Y	50	1492-EBJ3-Y	50
End Anchors and Retainers:						
Screwless End Retainer	1492-ERL35	20	1492-ERL35	20	1492-ERL35	20
DIN Rail — Normal Duty	1492-EAJ35	100	1492-EAJ35	100	1492-EAJ35	100
DIN Rail — Heavy Duty	1492-EAHJ35	50	1492-EAHJ35	50	1492-EAHJ35	50
Jumpers:*						
Screw Center Jumper — 10-pole	1492-CJJ5-10	20	1492-CJJ6-10	20	1492-CJJ8-10	20
Screw Center Jumper — 4-pole	1492-CJJ5-4	50	1492-CJJ6-4	50	1492-CJJ8-4	50
Screw Center Jumper — 3-pole	1492-CJJ5-3	50	1492-CJJ6-3	50	1492-CJJ8-3	50
Screw Center Jumper — 2-pole	1492-CJJ5-2	50	1492-CJJ6-2	50	1492-CJJ8-2	50
Plug-in Center Jumper — 50-Pole	1492-CJLJ5-50	10	1492-CJLJ6-41 (41-pole)	10	—	—
Plug-in Center Jumper — 10-Pole	1492-CJLJ5-10	20	1492-CJLJ6-10	20	—	—
Plug-in Center Jumper — 9-Pole	1492-CJLJ5-9	20	—	—	—	—
Plug-in Center Jumper — 8-Pole	1492-CJLJ5-8	20	—	—	—	—
Plug-in Center Jumper — 7-Pole	1492-CJLJ5-7	20	—	—	—	—
Plug-in Center Jumper — 6-Pole	1492-CJLJ5-6	20	—	—	—	—
Plug-in Center Jumper — 5-Pole	1492-CJLJ5-5	20	—	—	—	—
Plug-in Center Jumper — 4-Pole	1492-CJLJ5-4	60	1492-CJLJ6-4	60	—	—
Plug-in Center Jumper — 3-Pole	1492-CJLJ5-3	60	1492-CJLJ6-3	60	—	—
Plug-in Center Jumper — 2-Pole	1492-CJLJ5-2	60	1492-CJLJ6-2	60	—	—
Insulated Side Jumper — 24-Pole	1492-SJ5B-24	50	—	—	—	—
Insulated Side Jumper — 10-Pole	1492-SJ5B-10	50	—	—	—	—
Screw Type Jumper Notching Tool	1492-T1	1	1492-T1	1	1492-T1	1
Other Accessories:						
Partition Plate	1492-EBJ16	20	1492-EBJ16	20	1492-EBJ16	20
Test Plug Socket	1492-TPS23	20	1492-TPS23L	50	1492-TPS23L	50
Test Plug	1492-TP23	20	1492-TP23	20	1492-TP23	20
Test Plug (Stackable)	1492-TPJ5	25	1492-TPJ6	25	—	—
Electrical Warning Plate	1492-EWPJ5	25	1492-EWPJ5	25	1492-EWPJ8	50
Group Marking Carrier	1492-GM35	25	1492-GM35	25	1492-GM35	25
Marking Systems:						
Snap-in Marker Cards	1492-M5X12 (144/card)	5	1492-M6X12 (120/card)	5	1492-MR8X12 (84/card)	5
	1492-M5X5 (200/card)	5	1492-M6X5 (200/card)	5	1492-M8X5 (160/card)	5

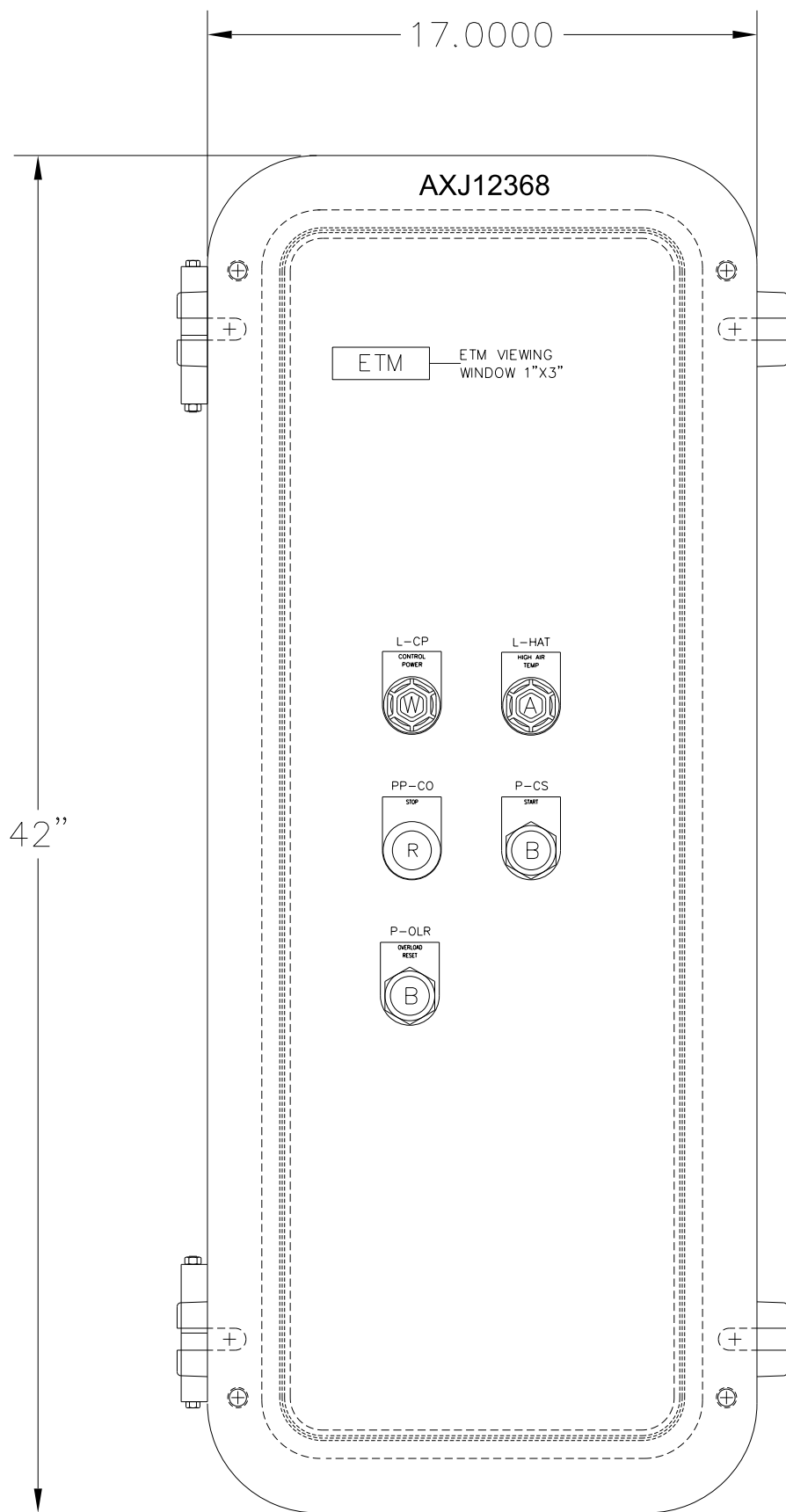
* Use of center jumpers may affect spacings, requiring derating of terminal blocks. See page 12-78 for details.

Screw Connection Terminal Blocks

Grounding Blocks, Continued

	1492-JG4				1492-JG4TW			1492-JG4Q		
<p>Dimensions are not intended to be used for manufacturing purposes. Note: Height dimension is measured from top of rail to top of terminal block.</p>										
Specifications	<i>Feed-Through Ground Block</i>				<i>Single-level ground block with twin connection points on one side</i>			<i>Single-level ground block with twin connection points on both sides</i>		
Certifications	UL	CSA	IEC	ATEX	UL	CSA	IEC	UL	CSA	IEC
Voltage Rating	—				—			—		
Maximum Current	Grounding				Grounding			Grounding		
Wire Range (Rated Cross Section)	#22...10 AWG		4 mm ² (#20...12 AWG)		#30...10 AWG		0.5...4 mm ²	#30...10 AWG		0.5...4 mm ²
Wire Strip Length	0.39 in. (10 mm)				0.394 in. (10 mm)			0.394 in. (10 mm)		
Recommended Tightening Torque	9 lb•in. (1.0 N•m)				6.2 lb•in. (0.7 N•m)			6.2 lb•in. (0.7 N•m)		
Mounting Torque - Center Screw	4.4...7.1 lb•in. (0.5...0.8 N•m)				—			—		
Density	49 pcs/ft (163 pcs/m)				49 pcs/ft (163 pcs/m)			49 pcs/ft (163 pcs/m)		
Housing Temperature Range	-58...+248 °F (-50...+120 °C)				-58...+248 °F (-50...+120 °C)			-58...+248 °F (-50...+120 °C)		
Short-Circuit Current Rating	See page 12-43									
Terminal Blocks	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.
Color: Green/Yellow	1492-JG4	100	1492-JG4TW	50	1492-JG4Q	50				
Accessories	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.	Cat. No.	Pkg Qty.
Mounting Rails:										
1 m Symmetrical DIN (Steel)	199-DR1	10	199-DR1	10	199-DR1	10				
1 m Symmetrical DIN (Aluminum)	1492-DR5	10	1492-DR5	10	1492-DR5	10				
1 m Hi-Rise Sym. DIN (Aluminum)	1492-DR6	2	1492-DR6	2	1492-DR6	2				
1 m Angled Hi-Rise Sym. DIN (Steel)	1492-DR7	2	1492-DR7	2	1492-DR7	2				
End Barrier Yellow	Not Required	—	1492-EBJ4TW-Y	50	1492-EBJ4Q-Y	50				
End Anchors:										
Screwless End Retainer	1492-ERL35	20	1492-ERL35	20	1492-ERL35	20				
DIN Rail - Normal Duty	1492-EAJ35	100	1492-EAJ35	100	1492-EAJ35	100				
DIN Rail - Heavy Duty	1492-EAHJ35	50	1492-EAHJ35	50	1492-EAHJ35	50				
Group Marking Rail Mount Group Marking Carrier	1492-GM35	25	1492-GM35	25	1492-GM35	25				
End Anchor Top Marker Carrier*	—	—	1492-GMC	50	1492-GMC	50				
Cat. No. 1492-GMC Top Marker Tag	—	—	1492-M5X30 (20/card)	5	1492-M5X30 (20/card)	5				
Marking Systems:										
Snap-in marker cards	1492-M6X12 (120/card)	5	1492-MR6X12 (120/card)	5	1492-MR6X12 (120/card)	5				
Snap-in marker cards	1492-M6X5 (200/card)	5	1492-M6X12 (120/card)	5	1492-M6X12 (120/card)	5				

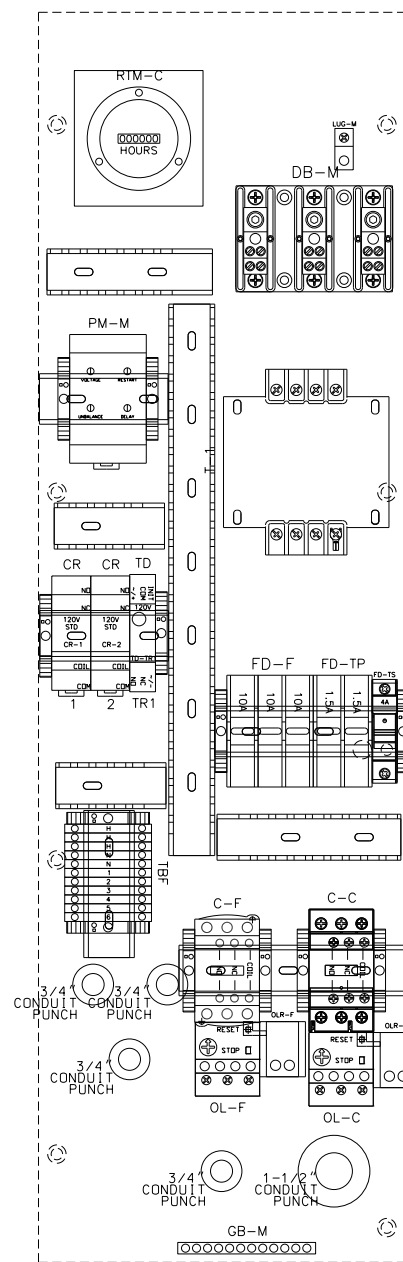
* The Bulletin 1492-GMC marker carrier installs directly on the top of a 1492-EAJ35 end anchor or a 1492-ERL35 end retainer for group marking purposes.



NEMA 7 ENCLOSURE

TAG LEGEND
 L- = LIGHT
 LP- = LIGHTED PUSHBUTTON
 P- = PUSHBUTTON
 S- = SELECTOR SWITCH
 T- = TAG

NAME LEGEND
 L-CP CONTROL POWER
 L-HAT HIGH AIR TEMP
 P-CS START
 P-OLR OVERLOAD RESET
 PP-CO STOP



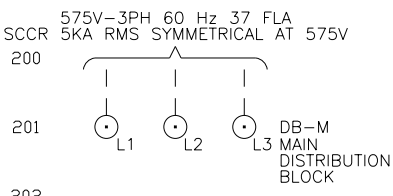
REV	DATE	PURPOSE:	BY	CHKD

YOUR COMPANY
 YOUR ADDRESS
 YOUR PHONE NO.
 YOUR WEBSITE

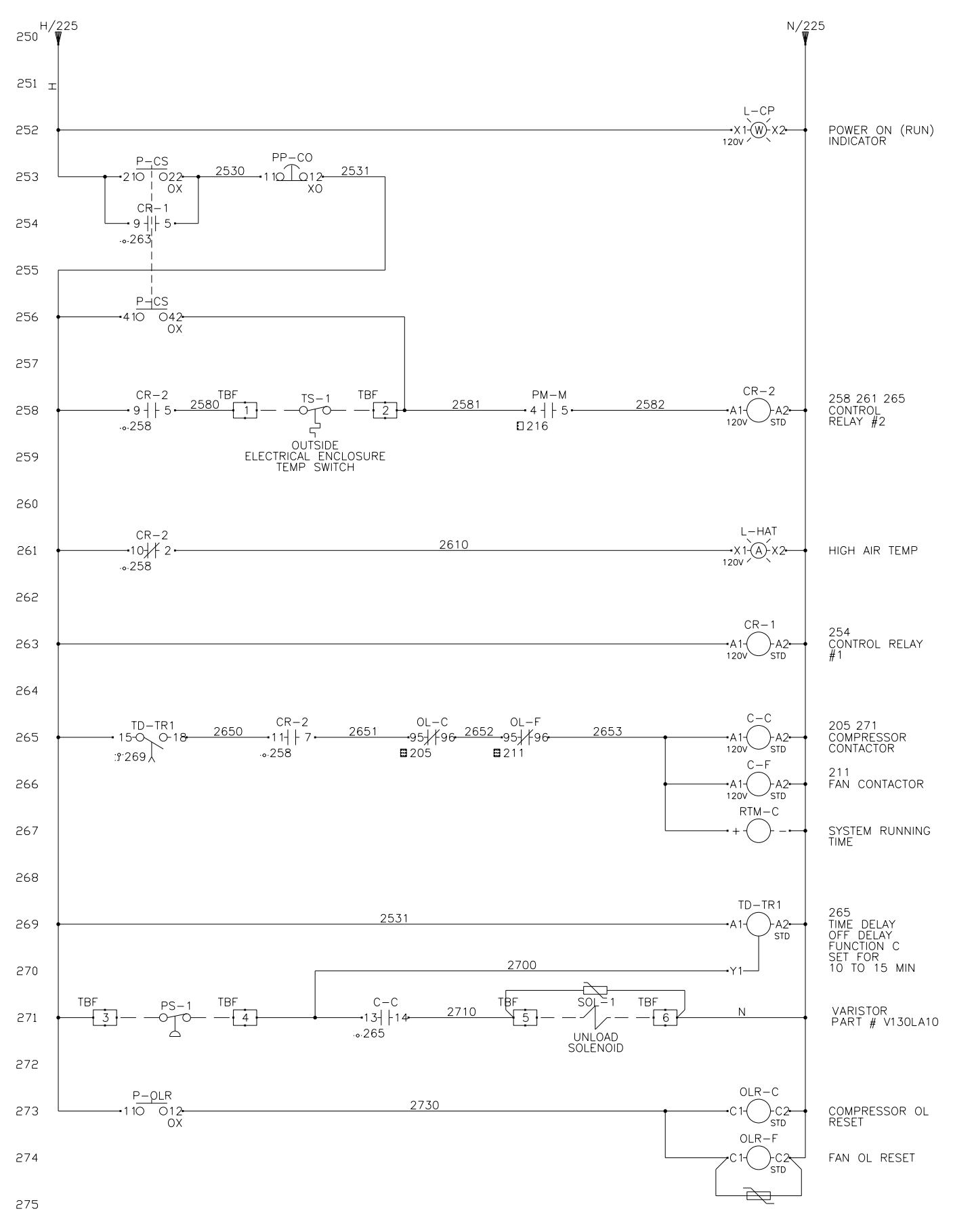
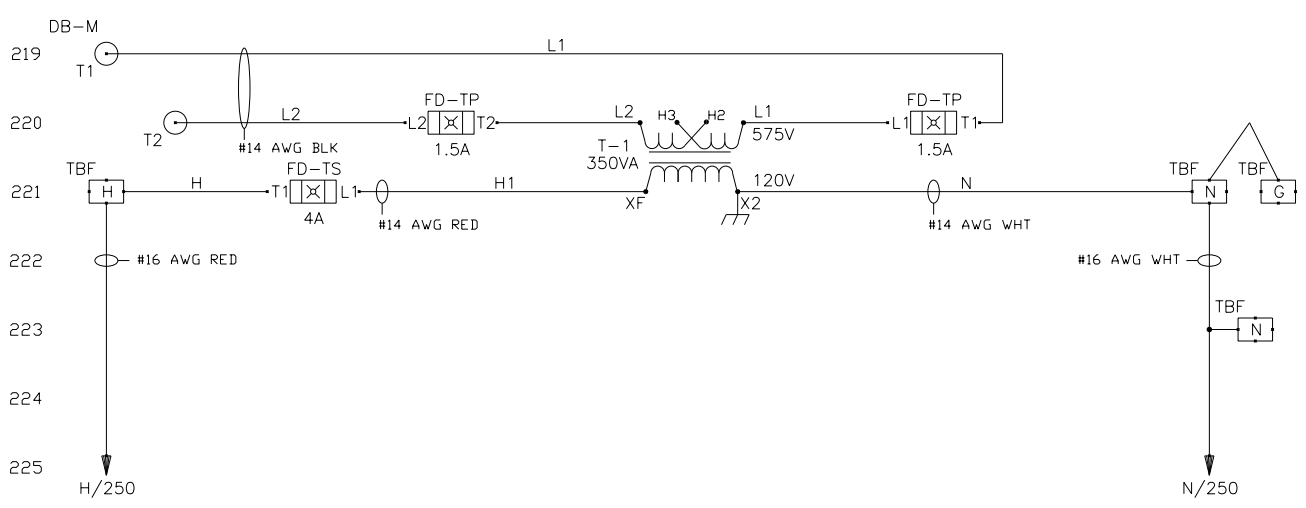
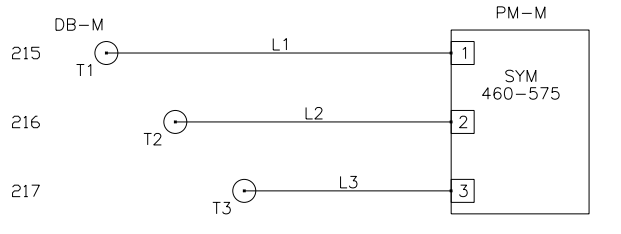
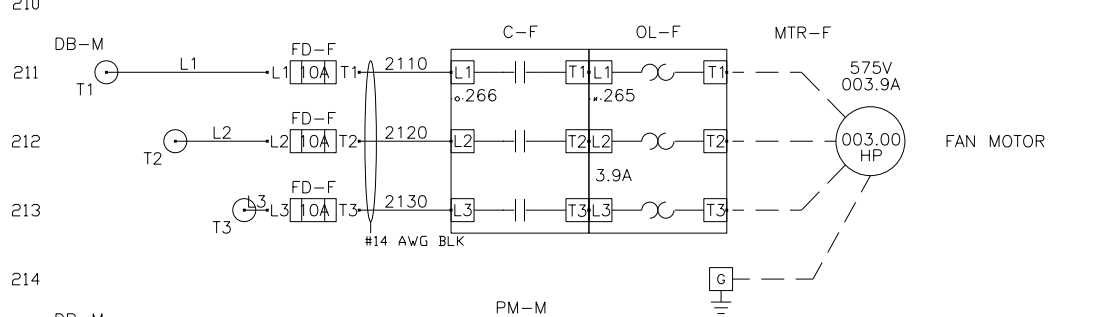
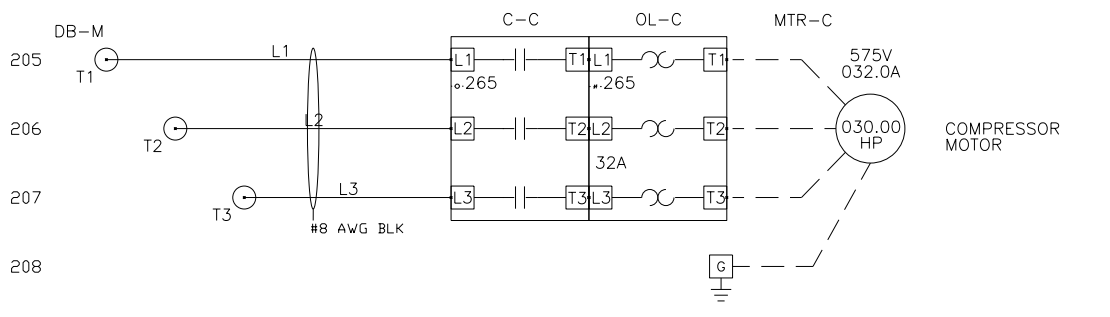
DESIGNED	DATE
DRAWN	DATE
CHECKED	DATE

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ENCLOSURE LAYOUT
 NEMA 7 COMPRESSOR PANEL
 NEMA 7 PANEL
 DRAWING SET:
 2013-376 NEMA 7 PANEL



GND
AT INSTALLATION CUSTOMER IS TO PROVIDE A 60AMP DISCONNECT AND BRANCH CIRCUIT OVERCURRENT PROTECTION IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE (NEC) AND OR ANY LOCAL CODES



REV	DATE	PURPOSE:	BY	CHKD

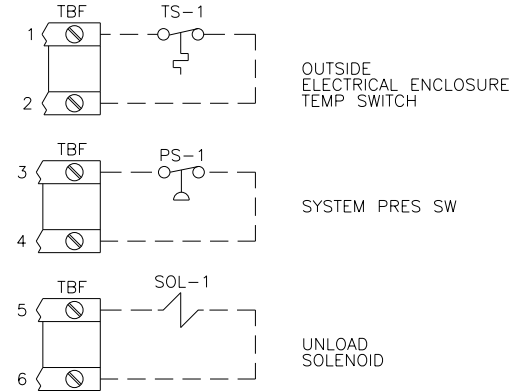
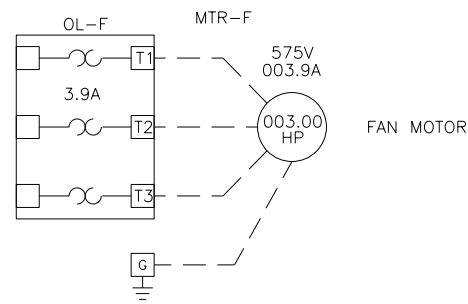
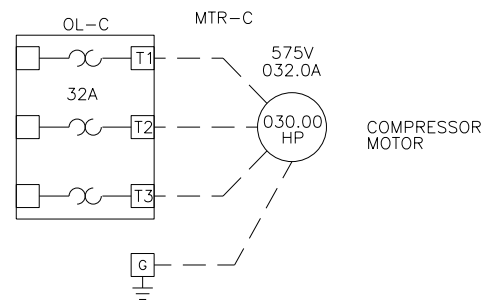
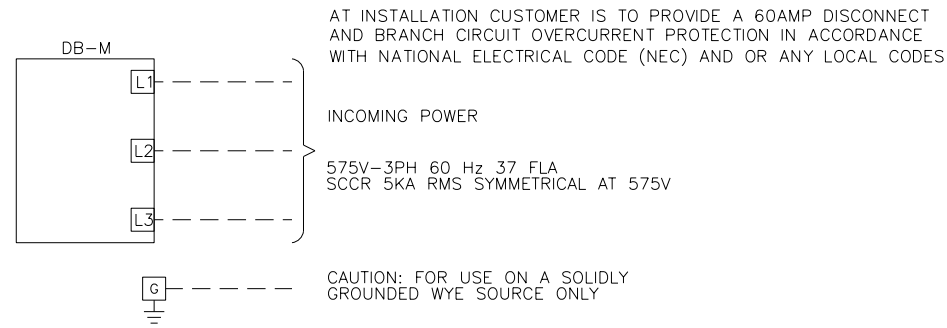


DESIGNED	DATE	FOR:
JW	3/2013	YOUR CUSTOMER
DRAWN	DATE	
JW	3/2013	
CHECKED	DATE	

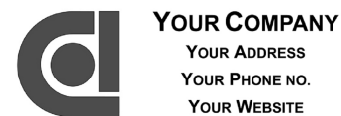
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POWER SCHEMATIC NEMA 7 COMPRESSOR PANEL NEMA 7 PANEL	
DRAWING SET: 2013-376 NEMA 7 PANEL	SHEET: 2 OF 3

FIELD CONNECTIONS



REV	DATE	PURPOSE:	BY	CHKD



DESIGNED JW	DATE 3/2013
DRAWN JW	DATE 3/2013
CHECKED	DATE

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YOUR CUSTOMER

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FIELD CONNECTIONS
NEMA 7 COMPRESSOR PANEL
NEMA 7 PANEL

DRAWING SET:
2013-376 NEMA 7 PANEL

Your Company

Project Name: NEMA 7 Compressor Panel

Job No: 2013-376

Bill of Material

Panel Name: NEMA 7 Control Panel

Typical of 4

Panel(s)

Device ID	Qty	Mfg	Part No	Description
ENCL-1	1	AKRON	QUOTE 52341	2012-479,NEMA7,CXJ 12368-3H2-N1-N4-N5 (5)N6-G8(1x3)
Unassigned	1	AKRON	2003ACB	CONTACT BLOCK,1NO,1NC
DB-M	1	AUTODIR	HPB104-3	DIST BLK,FEEDER,OPN,3P,600V,(1) 8-2/0 TO (04) 14-4
PM-M	1	SYM	460-575	PH MON,3 PH,575V,1PDT,240V,10A,DIN MNT
T-1	1	SD	9070T-350-D5	XFMR,OPEN,1 PH,NO FB,600V-120V,0350VA
T-1	1	BUSS	CHCC2D-IU	FUSE HOLDER,2P,600V,030A,13/32X1-1/2,CC TYPE,DIN MNT,NEON
T-1	1	BUSS	CHM1D-IU	FUSE HOLDER,1P,600V,030A,13/32X1-1/2,STD TYPE,DIN MNT,NEON
T-1	2	BUSS	FNQ-R1-1/2	FUSE,600V,200KAIC,01.5A,13/32X1-1/2,TD
T-1	1	BUSS	FNM-4	FUSE,250V,10KAIC,04.0A,13/32X1-1/2,TD
G-M	1	BURNDY	KA2U	LUG,ONE HOLE,SCREW COMP,AL,115A,14-2
GB-M	1	SD	PK9GTA	GROUND BAR KIT,ALUM,09 CKTS
C-C	1	SD	LC1-D32-G7	CONTACTOR,IEC,D LINE,600V,032A,1NO,1NC,120V
OL-C	1	SD	LRD-35	OL RELAY,IEC,D LINE,030-35A,1NO,1NC,D32-D38
OLR-C, OLR-F	2	SD	LAD-703F	OL RESET,SOLENOID,FOR LRD01 TO LRD32,120V
FD-F	1	BUSS	CHCC3DU	FUSE HOLDER,3P,600V,030A,13/32X1-1/2,CC TYPE,DIN MNT
F-F	3	BUSS	LP-CC-10	FUSE,600V,200KAIC,10A,13/32X1-1/2,TD
C-F	1	SD	LC1-D09-G7	CONTACTOR,IEC,D LINE,600V,009A,1NO,1NC,120V
OL-F	1	SD	LRD-08	OL RELAY,IEC,D LINE,002.5-4A,1NO,1NC,D09-D32
CR-1, CR-2	2	SD	RXZ-E2M114-M	SOCKET,RX,4PDT,240V,06A,14 BL,DIN MNT
CR-1, CR-2	2	SD	RXM-4AB2-F7	RELAY,RXM,4PDT,240V,06A,W/IND,MAN OP,120V,14 BL
TD-TR1	1	SD	RE17-RMMU	RE17,TIMER,ON/OFF/INT/FLASH,0.1S-100H.1PDT,8A,DIN MNT,24-240V
PP-CO	1	AKRON	XPPPL-2RC	PUSH-PULL,2 POS,RED,2NO,2NC,LONG BARREL
P-CS, P-OLR	2	AKRON	XPBL-FGP	PB,FLUSH,GRN,2 NO,2 NC,LONG BARREL
RTM-C	1	ENM	T50B212	METER,ELAPSED TIME,NEMA 4X,PNL MNT, 120V
Z-C	1	ACI	Z-BKT-P22	Z BRACKET,22MM HOLE, 4HX2WX3D
L-CP	1	AKRON	XPLLB-TT120W	PILOT LIGHT,WHT,120V,LONG BARREL
L-CT	1	AKRON	XPLLB-TT120A	PILOT LIGHT,AMB,120V,LONG BARREL
TB-	1	AB	199-DR1	ACC,DIN RAIL,3FT
TB-	15	AB	1492-J4	J 1 TIER,TERMINAL,0.24 IN

Your Company

Project Name: NEMA 7 Compressor Panel

Job No: 2013-376

Bill of Material

TB-	1	AB	1492-JG4	J 1 TIER,TERMINAL,0.24 IN,GROUND
TB-	30	ACI	1492-M6X12-ACI	1 TIER,MARKER,BLANK,FOR 1492-J4
TB-	2	AB	1492-EBJ3	J 1 TIER,END BARRIER,FOR J3/J4/J10
TB-	12	AB	1492-EAJ35	ACC,END ANCHOR