

Central Oiler

Submittal for Oil Panel

Prepared by:

Your Company

Your Address

Panel Job: 2013-058

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CONCEPT™, TYPE 4 AND 12



INDUSTRY STANDARDS

Wall-mounting brackets required to maintain UL/CSA external mounting requirement.

CONCEPT solid single-door, door with window and flush-mount models

UL 508A Listed; Type 4, 12; File No. E61997
cUL Listed per CSA C22.2 No. 94; Type 4, 12; File No. E61997

NEMA/EEMAC Type 4, 12, 13
CSA, File No. 42186; Type 4, 12
VDE IP66
IEC 60529, IP66

CONCEPT two-door models

UL 508A Listed; Type 12; File No. E61997
cUL Listed per CSA C22.2 No. 94; Type 12; File No. E61997

NEMA/EEMAC Type 12
CSA, File No. 42186, Type 12
VDE IP 55
IEC 60529, IP55

APPLICATION

CONCEPT™ Enclosures are ideal for machine control applications. With streamlined styling, flush quarter-turn latches and an attractive, durable finish. Available in solid or window single-door and two-door landscape, flush-mount and sloped-top versions for application and mounting flexibility. Two-door landscape models provide full-width access and easy panel installation.

SPECIFICATIONS

- 14, 16 or 18 gauge steel (see table)
- Seams continuously welded and ground smooth
- Corner-formed doors
- Simple easy-to-remove and install hinge pins with built-in captivation clip
- High-torque threadless studs and fasteners on door
- Minimum-width body flange provides maximum door opening (210 degrees)
- External formed body flange
- Panel mounting studs fit optional CONCEPT panels and other accessories
- Mounting holes in back of body for optional external wall-mount brackets
- Hidden hinges
- Doors are interchangeable and easily removed by pulling clip-style hinge pins
- Seamless foam-in-place gasket
- Quarter-turn slotted latch(es)
- Door alignment device on doors wider than 30 in.
- Four hinges on 60-in.-high enclosures
- Grounding stud on body; bonding provision on door (except window-door models)
- Provisions for thermoplastic data pocket (right-hand hinged door on two-door models)
- Hardware kit with panel mounting nuts, panel grounding hardware and sealing washers
- Single-door enclosures have a three-point latch system on enclosures where A is equal to or greater than 42-in. with quarter-turn, slotted latch
- Window-door enclosures have a clear polycarbonate window flush with door surface
- Mounting frame on flush-mount enclosures extends completely around enclosure
- Two-door enclosures have a overlapping door design which provides full-width access
- Two door enclosures have a three-point latch system on right-hand hinged door furnished with flush slotted insert
- Illustrated instruction sheet

FINISH

Two standard finishes are available: ANSI 61 gray or RAL 7035 textured light-gray polyester powder paint inside and out.

ACCESSORIES

Door Stop Kit
Handles
Lock Inserts
CONCEPT™ Panels
Mounting-Bracket Kits

MODIFICATION AND CUSTOMIZATION

Hoffman excels at modifying and customizing products to your specifications. Contact your local Hoffman sales office or distributor for complete information.

BULLETIN: CW1

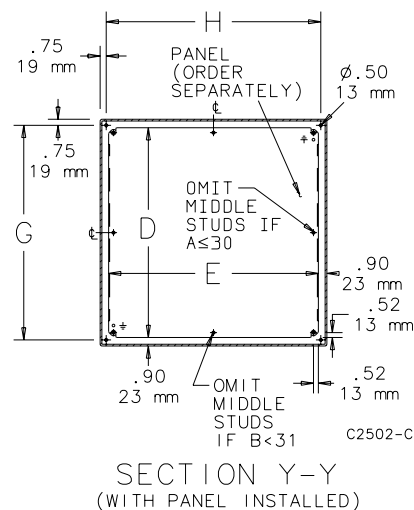
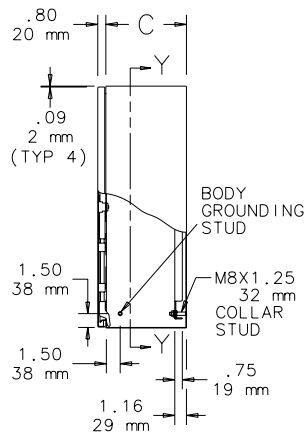
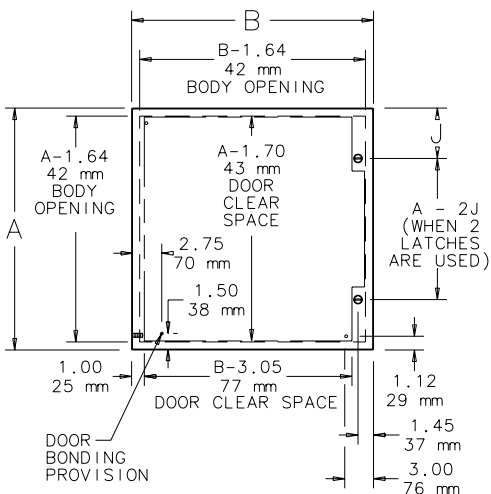
Standard Product **Single-Door Enclosures**

Catalog Number	AxBxC in./mm	Finish	Door Ga.	Body Ga.	CONCEPT Panel	Conductive CONCEPT Panel	Panel Size D x E in./mm	Mounting G x H in./mm	Latches qty.	Latches style	J in./mm
CSD12126	12.00 x 12.00 x 6.00 305 x 305 x 152	ANSI 61 Gray	16	18	CP1212	CP1212G	10.20 x 10.20 259 x 259	10.50 x 10.50 267 x 267	1	Quarter-turn	6.00 152
CSD12126LG	12.00 x 12.00 x 6.00 305 x 305 x 152	RAL 7035 Lt. Gray	16	18	CP1212	CP1212G	10.20 x 10.20 259 x 259	10.50 x 10.50 267 x 267	1	Quarter-turn	6.00 152
CSD16126	16.00 x 12.00 x 6.00 406 x 305 x 152	ANSI 61 Gray	16	18	CP1612	CP1612G	14.20 x 10.20 361 x 259	14.50 x 10.50 368 x 267	1	Quarter-turn	8.00 203
CSD16126LG	16.00 x 12.00 x 6.00 406 x 305 x 152	RAL 7035 Lt. Gray	16	18	CP1612	CP1612G	14.20 x 10.20 361 x 259	14.50 x 10.50 368 x 267	1	Quarter-turn	8.00 203
CSD16166	16.00 x 16.00 x 6.00 406 x 406 x 152	ANSI 61 Gray	16	18	CP1616	CP1616G	14.20 x 14.20 361 x 361	14.50 x 14.50 368 x 368	1	Quarter-turn	8.00 203
CSD16166LG	16.00 x 16.00 x 6.00 406 x 406 x 152	RAL 7035 Lt. Gray	16	18	CP1616	CP1616G	14.20 x 14.20 361 x 361	14.50 x 14.50 368 x 368	1	Quarter-turn	8.00 203
CSD16206	16.00 x 20.00 x 6.00 406 x 508 x 152	ANSI 61 Gray	16	18	CP2016	CP2016G	18.20 x 14.20 462 x 361	14.50 x 18.50 368 x 470	1	Quarter-turn	8.00 203
CSD16206LG	16.00 x 20.00 x 6.00 406 x 508 x 152	RAL 7035 Lt. Gray	16	18	CP2016	CP2016G	18.20 x 14.20 462 x 361	14.50 x 18.50 368 x 470	1	Quarter-turn	8.00 203
CSD20166	20.00 x 16.00 x 6.00 508 x 406 x 152	ANSI 61 Gray	16	18	CP2016	CP2016G	18.20 x 14.20 462 x 361	18.50 x 14.50 470 x 368	1	Quarter-turn	10.00 254
CSD20166LG	20.00 x 16.00 x 6.00 508 x 406 x 152	RAL 7035 Lt. Gray	16	18	CP2016	CP2016G	18.20 x 14.20 462 x 361	18.50 x 14.50 470 x 368	1	Quarter-turn	10.00 254
CSD20206	20.00 x 20.00 x 6.00 508 x 508 x 152	ANSI 61 Gray	16	18	CP2020	CP2020G	18.20 x 18.20 462 x 462	18.50 x 18.50 470 x 470	1	Quarter-turn	10.00 254
CSD20206LG	20.00 x 20.00 x 6.00 508 x 508 x 152	RAL 7035 Lt. Gray	16	18	CP2020	CP2020G	18.20 x 18.20 462 x 462	18.50 x 18.50 470 x 470	1	Quarter-turn	10.00 254
CSD24166	24.00 x 16.00 x 6.00 610 x 406 x 152	ANSI 61 Gray	16	18	CP2416	CP2416G	22.20 x 14.20 564 x 361	22.50 x 14.50 572 x 368	1	Quarter-turn	12.00 305
CSD24166LG	24.00 x 16.00 x 6.00 610 x 406 x 152	RAL 7035 Lt. Gray	16	18	CP2416	CP2416G	22.20 x 14.20 564 x 361	22.50 x 14.50 572 x 368	1	Quarter-turn	12.00 305
CSD24206	24.00 x 20.00 x 6.00 610 x 508 x 152	ANSI 61 Gray	16	18	CP2420	CP2420G	22.20 x 18.20 564 x 462	22.50 x 18.50 572 x 470	1	Quarter-turn	12.00 305
CSD24206LG	24.00 x 20.00 x 6.00 610 x 508 x 152	RAL 7035 Lt. Gray	16	18	CP2420	CP2420G	22.20 x 18.20 564 x 462	22.50 x 18.50 572 x 470	1	Quarter-turn	12.00 305
CSD24246	24.00 x 24.00 x 6.00 610 x 610 x 152	ANSI 61 Gray	14	16	CP2424	CP2424G	22.20 x 22.20 564 x 564	22.50 x 22.50 572 x 572	2	Quarter-turn	5.00 127
CSD24246LG	24.00 x 24.00 x 6.00 610 x 610 x 152	RAL 7035 Lt. Gray	14	16	CP2424	CP2424G	22.20 x 22.20 564 x 564	22.50 x 22.50 572 x 572	2	Quarter-turn	5.00 127
CSD16128	16.00 x 12.00 x 8.00 406 x 305 x 203	ANSI 61 Gray	16	18	CP1612	CP1612G	14.20 x 10.20 361 x 259	14.50 x 10.50 368 x 267	1	Quarter-turn	8.00 203
CSD16128LG	16.00 x 12.00 x 8.00 406 x 305 x 203	RAL 7035 Lt. Gray	16	18	CP1612	CP1612G	14.20 x 10.20 361 x 259	14.50 x 10.50 368 x 267	1	Quarter-turn	8.00 203
CSD16168	16.00 x 16.00 x 8.00 406 x 406 x 203	ANSI 61 Gray	16	18	CP1616	CP1616G	14.20 x 14.20 361 x 361	14.50 x 14.50 368 x 368	1	Quarter-turn	8.00 203
CSD16168LG	16.00 x 16.00 x 8.00 406 x 406 x 203	RAL 7035 Lt. Gray	16	18	CP1616	CP1616G	14.20 x 14.20 361 x 361	14.50 x 14.50 368 x 368	1	Quarter-turn	8.00 203
CSD16208	16.00 x 20.00 x 8.00 406 x 508 x 203	ANSI 61 Gray	16	18	CP2016	CP2016G	18.20 x 14.20 462 x 361	14.50 x 18.50 368 x 470	1	Quarter-turn	8.00 203
CSD16208LG	16.00 x 20.00 x 8.00 406 x 508 x 203	RAL 7035 Lt. Gray	16	18	CP2016	CP2016G	18.20 x 14.20 462 x 361	14.50 x 18.50 368 x 470	1	Quarter-turn	8.00 203
CSD20168	20.00 x 16.00 x 8.00 508 x 406 x 203	ANSI 61 Gray	16	18	CP2016	CP2016G	18.20 x 14.20 462 x 361	18.50 x 14.50 470 x 368	1	Quarter-turn	10.00 254
CSD20168LG	20.00 x 16.00 x 8.00 508 x 406 x 203	RAL 7035 Lt. Gray	16	18	CP2016	CP2016G	18.20 x 14.20 462 x 361	18.50 x 14.50 470 x 368	1	Quarter-turn	10.00 254
CSD20208	20.00 x 20.00 x 8.00 508 x 508 x 203	ANSI 61 Gray	16	18	CP2020	CP2020G	18.20 x 18.20 462 x 462	18.50 x 18.50 470 x 470	1	Quarter-turn	10.00 254
CSD20208LG	20.00 x 20.00 x 8.00 508 x 508 x 203	RAL 7035 Lt. Gray	16	18	CP2020	CP2020G	18.20 x 18.20 462 x 462	18.50 x 18.50 470 x 470	1	Quarter-turn	10.00 254
CSD20248	20.00 x 24.00 x 8.00 508 x 610 x 203	ANSI 61 Gray	16	18	CP2420	CP2420G	22.20 x 18.20 564 x 462	18.50 x 22.50 470 x 572	1	Quarter-turn	10.00 254
CSD20248LG	20.00 x 24.00 x 8.00 508 x 610 x 203	RAL 7035 Lt. Gray	16	18	CP2420	CP2420G	22.20 x 18.20 564 x 462	18.50 x 22.50 470 x 572	1	Quarter-turn	10.00 254
CSD24168	24.00 x 16.00 x 8.00 610 x 406 x 203	ANSI 61 Gray	16	18	CP2416	CP2416G	22.20 x 14.20 564 x 361	22.50 x 14.50 572 x 368	1	Quarter-turn	12.00 305
CSD24168LG	24.00 x 16.00 x 8.00 610 x 406 x 203	RAL 7035 Lt. Gray	16	18	CP2416	CP2416G	22.20 x 14.20 564 x 361	22.50 x 14.50 572 x 368	1	Quarter-turn	12.00 305
CSD24208	24.00 x 20.00 x 8.00 610 x 508 x 203	ANSI 61 Gray	16	18	CP2420	CP2420G	22.20 x 18.20 564 x 462	22.50 x 18.50 572 x 470	1	Quarter-turn	12.00 305
CSD24208LG	24.00 x 20.00 x 8.00 610 x 508 x 203	RAL 7035 Lt. Gray	16	18	CP2420	CP2420G	22.20 x 18.20 564 x 462	22.50 x 18.50 572 x 470	1	Quarter-turn	12.00 305
CSD24248	24.00 x 24.00 x 8.00 610 x 610 x 203	ANSI 61 Gray	14	16	CP2424	CP2424G	22.20 x 22.20 564 x 564	22.50 x 22.50 572 x 572	2	Quarter-turn	5.00 127
CSD24248LG	24.00 x 24.00 x 8.00 610 x 610 x 203	RAL 7035 Lt. Gray	14	16	CP2424	CP2424G	22.20 x 22.20 564 x 564	22.50 x 22.50 572 x 572	2	Quarter-turn	5.00 127
CSD24308	24.00 x 30.00 x 8.00 610 x 762 x 203	ANSI 61 Gray	14	16	CP3024	CP3024G	28.20 x 22.20 716 x 564	22.50 x 28.50 572 x 724	2	Quarter-turn	5.00 127
CSD24308LG	24.00 x 30.00 x 8.00 610 x 762 x 203	RAL 7035 Lt. Gray	14	16	CP3024	CP3024G	28.20 x 22.20 716 x 564	22.50 x 28.50 572 x 724	2	Quarter-turn	5.00 127

Catalog Number	AxByC in./mm	Finish	Door Ga.	Body Ga.	CONCEPT Panel	Conductive CONCEPT Panel	Panel Size D x E in./mm	Mounting G x H in./mm	Latches qty.	Latches style	J in./mm
CSD363016	36.00 x 30.00 x 16.00 914 x 762 x 406	ANSI 61 Gray	14	14	CP3630	CP3630G	34.20 x 28.20 869 x 716	34.50 x 28.50 876 x 724	2	Quarter-turn	5.00 127
CSD363016LG	36.00 x 30.00 x 16.00 914 x 762 x 406	RAL 7035 Lt. Gray	14	14	CP3630	CP3630G	34.20 x 28.20 869 x 716	34.50 x 28.50 876 x 724	2	Quarter-turn	5.00 127
CSD483616	48.00 x 36.00 x 16.00 1219 x 914 x 406	ANSI 61 Gray	14	14	CP4836	CP4836G	46.20 x 34.20 1173 x 869	46.50 x 34.50 1181 x 876	1	3-point	24.00 610
CSD483616LG	48.00 x 36.00 x 16.00 1219 x 914 x 406	RAL 7035 Lt. Gray	14	14	CP4836	CP4836G	46.20 x 34.20 1173 x 869	46.50 x 34.50 1181 x 876	1	3-point	24.00 610
CSD242420	24.00 x 24.00 x 20.00 610 x 610 x 508	ANSI 61 Gray	14	14	CP2424	CP2424G	22.20 x 22.20 564 x 564	22.50 x 22.50 572 x 572	2	Quarter-turn	5.00 127
CSD242420LG	24.00 x 24.00 x 20.00 610 x 610 x 508	RAL 7035 Lt. Gray	14	14	CP2424	CP2424G	22.20 x 22.20 564 x 564	22.50 x 22.50 572 x 572	2	Quarter-turn	5.00 127
CSD302420	30.00 x 24.00 x 20.00 762 x 610 x 508	ANSI 61 Gray	14	14	CP3024	CP3024G	28.20 x 22.20 716 x 564	28.50 x 22.50 724 x 572	2	Quarter-turn	5.00 127
CSD302420LG	30.00 x 24.00 x 20.00 762 x 610 x 508	RAL 7035 Lt. Gray	14	14	CP3024	CP3024G	28.20 x 22.20 716 x 564	28.50 x 22.50 724 x 572	2	Quarter-turn	5.00 127
CSD363020	36.00 x 30.00 x 20.00 914 x 762 x 508	ANSI 61 Gray	14	14	CP3630	CP3630G	34.20 x 28.20 869 x 716	34.50 x 28.50 876 x 724	2	Quarter-turn	5.00 127
CSD363020LG	36.00 x 30.00 x 20.00 914 x 762 x 508	RAL 7035 Lt. Gray	14	14	CP3630	CP3630G	34.20 x 28.20 869 x 716	34.50 x 28.50 876 x 724	2	Quarter-turn	5.00 127

Purchase panels separately.

Optional NEMA-size panels require conversion kit Catalog Number CCPM4.



CONCEPT® Accessories

Door Stop Kit



Door Stop Kit secures the door in the open position. Kit can be installed at the top or bottom of a door which opens horizontally. Door opening angle can be easily adjusted by means of a wing nut. Stop arm slides neatly out of the way when the door is closed. All parts are plated. Mounting hardware included.

- Door stop kits should not be installed on enclosures configured with a swing-out panel or swing-out rack frame
- Door stop kits cannot be used with CONCEPT window doors

Bulletin: A80

Catalog Number	Finish
ADSTOPK	Plated Steel

Data Pockets



Data Pockets provide convenient storage for wiring diagrams, operation manuals and other documentation inside an enclosure. Pocket mounts on studs located on the inside of a solid-door enclosure. Constructed of high-impact thermoplastic, pockets are dark gray and have cutout areas for easy access and visibility to contents. Mounting hardware included.

Bulletin: UX1Y

Catalog Number	Length x Width	
	in./mm	Fits CONCEPT Enclosure
ADP1	6.00 x 6.00 152 x 152	when A is less than or equal to 24 and B is less than or equal to 24
ADP2	12.00 x 12.00 305 x 305	when A is greater than or equal to 30 and B is greater than or equal to 20

Use ADP2 when A = 24 and B = 30

Lock Inserts



Lock inserts can be substituted for the standard 3-mm double-bit latch insert. Inserts have a chrome finish. Matching key is zinc die-cast.

Bulletin: A4GY, CWY

Catalog Number	Description
CLKTM7	Triangular 7-mm insert with key
CLKSM7	Square 7-mm insert with key
CLKDBM3	Double bit with key
CLKSLOT	Slotted Insert no key

Mounting-Bracket Kits



Mounting-Bracket Kits are field installable. Composite and stainless steel brackets are rated to Type 4X. Set of four (4) brackets can support 500 lb. maximum load. All hardware is included. Four brackets per kit.

Mounting brackets are required to maintain UL/CSA external mounting requirement.

Bulletin: A80

Catalog Number	Description
CMFK	Steel
CMFKSS	Stainless Steel
CMTGFT	Composite

Thermal-magnetic molded case circuit breakers shown on Pages 6-21 thru 6-25 are permanent trip UL Listed, CSA certified, IEC rated, and also meet the requirements of Federal Specification W-C-375B/GEN as indicated on Pages 6-4 thru 6-8. For I-LINE® molded case circuit breakers, see listings on Pages 8-24-8-34.



FAL
 1-pole
 15-100 Amperes



FAL/FHL
 2-pole
 15-100 Amperes



FAL/FHL/FCL
 3-pole
 15-100 Amperes

Interrupting Ratings (kA)

	FAL240	FAL480	FCL
240 V	10	18 (1P), 25 (2, 3P)	100
480 V	...	18	65
600 V	...	...	...

AccessoriesPages 6-37-6-39
 Optional LugsPages 6-40, 6-41
 DimensionsPage 6-45, 6-46
 EnclosuresPages 6-47-6-50
 Catalog Numbering SystemPage 6-23

F Frame – 100 A, Thermal-Magnetic (240 Vac)

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings		Standard Interrupting		Terminal Wire Range
	Hold	Trip	Catalog Number	Price	
1-Pole, 120 Vac					
15	275	600	FAL12015	\$126.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al
20	275	600	FAL12020	126.	
25	275	600	FAL12025	126.	
30	275	600	FAL12030	126.	
35	400	850	FAL12035	126.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al
40	400	850	FAL12040	126.	
45	400	850	FAL12045	126.	
50	400	850	FAL12050	126.	
60	800	1450	FAL12060	126.	
70	800	1450	FAL12070	166.	
80	800	1450	FAL12080	166.	
90	900	1700	FAL12090	166.	
100	900	1700	FAL12100	166.	
2-Pole, 240 Vac					
15	275	600	FAL22015	\$211.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al
20	275	600	FAL22020	211.	
25	275	600	FAL22025	211.	
30	275	600	FAL22030	211.	
35	400	850	FAL22035	211.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al
40	400	850	FAL22040	211.	
45	400	850	FAL22045	211.	
50	400	850	FAL22050	211.	
60	800	1450	FAL22060	211.	
70	800	1450	FAL22070	345.	
80	800	1450	FAL22080	345.	
90	900	1700	FAL22090	345.	
100	900	1700	FAL22100	345.	
3-Pole, 240 Vac					
15	275	600	FAL32015	\$314.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al
20	275	600	FAL32020	314.	
25	275	600	FAL32025	314.	
30	275	600	FAL32030	314.	
35	400	850	FAL32035	314.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al
40	400	850	FAL32040	314.	
45	400	850	FAL32045	314.	
50	400	850	FAL32050	314.	
60	800	1450	FAL32060	314.	
70	800	1450	FAL32070	447.	
80	800	1450	FAL32080	447.	
90	900	1700	FAL32090	447.	
100	900	1700	FAL32100	447.	

F Frame – 100 A, Thermal-Magnetic (480 Vac)

Continuous Current Rating @ 40° C	AC Magnetic Trip Settings		Standard Interrupting		Extra High Interrupting		Terminal Wire Range	FC Lugs
	Hold	Trip	Catalog Number	Price	Catalog Number	Price		
1-Pole, 277 Vac, 125 Vdc								
15	275	600	FAL14015	\$159.	...	...	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al	...
20	275	600	FAL14020	159.	...	...		
25	275	600	FAL14025	159.	...	...		
30	275	600	FAL14030	159.	...	...		
35	400	850	FAL14035	159.	...	...	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al	...
40	400	850	FAL14040	159.	...	...		
45	400	850	FAL14045	159.	...	...		
50	400	850	FAL14050	159.	...	...		
60	800	1450	FAL14060	159.	...	...		
70	800	1450	FAL14070	198.	...	...		
80	800	1450	FAL14080	198.	...	...		
90	900	1700	FAL14090	198.	...	...		
100	900	1700	FAL14100	198.	...	...		
2-Pole, 480 Vac, 250 Vdc†▲								
15	275	600	FAL24015	\$387.	FCL24015	\$ 919.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al	CU30FA4 1-#14-#10 AWG CU only
20	275	600	FAL24020	387.	FCL24020	919.		
25	275	600	FAL24025	387.	FCL24025	919.		
30	275	600	FAL24030	387.	FCL24030	919.		
35	400	850	FAL24035	387.	FCL24035	919.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al	AL100FA4 1-#14-#3 AWG CU or 1-#12-#1 AWG AL
40	400	850	FAL24040	387.	FCL24040	919.		
45	400	850	FAL24045	387.	FCL24045	919.		
50	400	850	FAL24050	387.	FCL24050	919.		
60	800	1450	FAL24060	387.	FCL24060	919.		
70	800	1450	FAL24070	500.	FCL24070	1131.		
80	800	1450	FAL24080	500.	FCL24080	1131.		
90	900	1700	FAL24090	500.	FCL24090	1131.		
100	900	1700	FAL24100	500.	FCL24100	1131.		
3-Pole, 480 Vac, 250 Vdc†								
15	275	600	FAL34015	\$496.	FCL34015	\$1149.	AL50FA #14-#4 AWG Cu or #12-#4 AWG Al	CU30FA4 1-#14-#10 AWG CU only
20	275	600	FAL34020	496.	FCL34020	1149.		
25	275	600	FAL34025	496.	FCL34025	1149.		
30	275	600	FAL34030	496.	FCL34030	1149.		
35	400	850	FAL34035	496.	FCL34035	1149.	AL100FA #14-#1/0 AWG Cu or #12-#1/0 AWG Al	AL100FA4 1-#14-#3 AWG CU or 1-#12-#1 AWG AL
40	400	850	FAL34040	496.	FCL34040	1149.		
45	400	850	FAL34045	496.	FCL34045	1149.		
50	400	850	FAL34050	496.	FCL34050	1149.		
60	800	1450	FAL34060	496.	FCL34060	1149.		
70	800	1450	FAL34070	587.	FCL34070	1413.		
80	800	1450	FAL34080	587.	FCL34080	1413.		
90	900	1700	FAL34090	587.	FCL34090	1413.		
100	900	1700	FAL34100	587.	FCL34100	1413.		

▲ FCL 2-pole circuit breaker built using 3-pole module.
 † FCL circuit breakers are not rated for 250 Vdc.



Type L Circuit Breaker Mechanisms

Type L door-mounted, variable depth operating mechanisms feature heavy duty, all metal construction with trip indication. All can be padlocked in the "OFF" position when the enclosure door is open. Further, the handle assemblies can be locked "OFF" with up to three padlocks, which also locks when the door is closed. (The 3" handle accepts one padlock.) Complete kits are rated for NEMA Type 1, 3R, and 12 enclosures. They include a handle assembly, operating mechanism, and shaft assembly.



Operating Mechanism

Table 8.47: Complete Kits

Complete Kit Does Not Include Circuit Breaker			Includes: Operating Mechanism Standard 6 in. Handle Standard Shaft Kit			Includes: Operating Mechanism Standard 6 in. Handle Long Shaft Kit			Includes: Operating Mechanism Short 3 in. Handle Long Shaft Kit		
Use With			Type	\$ Price	Mounting Depth ▲ Min. – Max.	Type	\$ Price	Mounting Depth ▲ Min. – Max.	Type	\$ Price	Mounting Depth ▲ Min. – Max.
Circuit Breaker or Interrupter Type	No. of Poles	Frame Size (A)									
GJL	3	75, 100	LG1	140.00	5-1/2–10-1/4	LG4	158.00	5-1/2–20-7/8	LG3	198.00	5-1/2–20-7/8
FAL, FCL, FHL	2–3	100	LN1	140.00	5-1/2–10-7/16	LN4	158.00	5-1/2–21	LN3	198.00	5-1/2–21
KAL, KCL, KHL	2–3	250	LP1	171.00	6-1/4–11-3/16	LP4	189.00	6-1/4–21-3/4	LP3	230.00	6-1/4–21-3/4
NSF, PowerPact® H and J	2–3	250	LJ1	171.00	5-1/2–10-3/4	LJ4	189.00	5-1/2–21-3/8	—	—	—
LAL, LHL, Q4L	2–3	400	LR1	242.00	6-5/16–10-7/8	LR4	255.00	6-5/16–21-1/2	3 in. handles are not recommended for use with these circuit breakers.		
MEL, MXL	2–3	800	LT1	242.00	7-3/16–11-5/8	LT4	255.00	7-3/16–22-1/4			
MAL, MHL	2–3	1200	LT1	242.00	7-3/16–11-5/8	LT4	255.00	7-3/16–22-1/4			
NAL, NCL, NEL, NXL	2–3	1200	LX1	242.00	8-1/4–12-3/4	LX4	255.00	8-1/4–23-3/8			
PowerPact M and P ▼	3	1200	LW1★	242.00	7-3/16–11-5/8	LW4★	255.00	7-3/16–22-1/4			

Table 8.48: Component Parts

Use With			3 in. Handle Assemblies Type 1, 3R, 12		Standard Handle Assemblies Type 1, 3R, 12		Operating Mechanism Includes Lockout		Standard Shaft (Support Bracket Not Required)			Long Shaft (Support Bracket Included)		
Circuit Breaker or Interrupter Type	No. of Poles	Frame Size (A)	Type	\$ Price	Type	\$ Price	Type	\$ Price	Mounting Depth ▲ Min. – Max.	Type	\$ Price	Mounting Depth ▲ Min. – Max.	Type	\$ Price
GJL	3	75, 100	LH3	90.00	LH6	50.00	LG7	68.00	5-1/2–10-7/16	LS8	21.50	5-1/2–21	LS13	35.60
FAL, FCL, FHL	2–3	100	LH3	90.00	LH6	50.00	LF1	71.00	5-1/2–10-7/16	LS8	21.50	5-1/2–21	LS12	35.60
KAL, KCL, KHL	2–3	250	LH3	90.00	LH6	50.00	LK1	105.00	6-1/4–11-3/16	LS8	21.50	6-1/4–21-3/4	LS12	35.60
NSF, PowerPact H and J	2–3	250	LH3	90.00	LH6	50.00	LJ7	105.00	5-1/2–10-1/4	LS8	21.50	5-1/2–21-3/8	LS13	35.60
LAL, LHL, Q4L	2–3	400	3 in. handles are not recommended for use with these circuit breakers.		LH6	50.00	LL1	170.00	6-5/16–10-7/8	LS8	21.50	6-5/16–21-1/2	LS10	35.60
MEL, MXL	2–3	800			LH8	50.00	LM1	170.00	7-3/16–11-5/8	LS8	21.50	7-3/16–22-1/4	LS10	35.60
MAL, MHL	2–3	1200			LH8	50.00	LM1	170.00	7-3/16–11-5/8	LS8	21.50	7-3/16–22-1/4	LS10	35.60
NAL, NCL, NEL, NXL	2–3	1200			LH8	50.00	LX7	170.00	8-1/4–12-3/4	LS8	21.50	8-1/4–23-3/8	LS10	35.60
PowerPact M and P ▼	3	1200			LHP8	50.00	LW7	170.00	7-3/16–11-5/8	LS8	21.50	7-3/16–22-1/4	LS10	35.60

- ▲ Mounting depth measured from circuit breaker mounting surface (control panel) to outside of enclosure door in inches.
- Types LT1, LT4, LX1, and LX4 include an 8 in. handle rather than a 6 in. handle.
- ◆ Note: These operating mechanisms cannot be used with any LA/LH circuit breaker with an MB or MT suffix.
- ★ Type LW1 and LW4 include an 8 in. handle (9421LHP8) rather than a 6 in. handle.
- ▼ These circuit breakers must use the 9421LHP** or LCP** handles only.

Table 8.49: NEMA Type 4 and 4X Handle Assemblies ▲

Use With			Standard Handle Assemblies				Special 3 in. Version			
Circuit Breaker or Interrupter Type	No. of Poles	Frame Size (A)	NEMA Type 1, 3R, 4, 12 (Painted)		NEMA Type 1, 3R, 4, 4X, 12 (Chrome Plated)		NEMA Type 1, 3R, 4, 12 (Painted)		NEMA Type 1, 3R, 4, 4X, 12 (Chrome Plated)	
			Type	\$ Price	Type	\$ Price	Type	\$ Price	Type	\$ Price
GJL	3	75	LH46	90.00	LC46	149.00	LH43	165.00	LC43	233.00
FAL, FCL, FHL	2–3	100	LH46	90.00	LC46	149.00	LH43	165.00	LC43	233.00
KAL, KCL, KHL	2–3	250	LH46	90.00	LC46	149.00	LH43	165.00	LC43	233.00
NSF, PowerPact H and J	2–3	250	LH46	90.00	LC46	149.00	LH43	165.00	LC43	233.00
LAL, LHL, Q4L	2–3	400	LH46	90.00	LC46	149.00				
MEL, MXL	2–3	800	LH48	90.00	LC48	149.00				
MAL, MHL	2–3	1000	LH48	90.00	LC48	149.00				
NAL, NCL, NEL, NXL	2–3	1200	LH48	90.00	LC48	149.00				
PowerPact M and P	3	1200	LHP48	90.00	LCP48	149.00				

- ▲ Due to gasketing, NEMA Type 3 & 4 handle assemblies are NOT trip indicating.

Table 8.50: IEC Style Operating Mechanisms

Circuit Breaker or Interrupter Type	Type 1, 4, 4X, 12			Operating Mechanism Includes Lockout		Extension Shafts			
	Color	Type	\$ Price	Type	\$ Price	Mounting Depth		Type	\$ Price
						Min.	Max.		
GJL	Red/Yellow	NW3	90.00	LG8	\$71.00	6-1/8	10-3/4	NS16	28.70
	Black	NW3B	90.00			6-1/8	17-7/8	NS336▲	35.60

- ▲ Contains support bracket.

Table 8.51: Electrical Interlock Kits—Class 9999 ▲

Description	Class	Type	\$ Price
Single Pole Double Throw	9999	R47	131.00
Double Pole Double Throw	9999	R48	221.00

- ▲ Optional accessory for use with 9421L operating mechanisms.

Note: Not used with GJL, NAL, NCL, NEL, NXL, NSF, NSJ, PowerPact® C, D, H, and J circuit breakers; use field-installed circuit breaker interlocks instead.



3 in. Handle Assembly



Standard Handle Assembly

QOU Unit Mount

Miniature Circuit Breakers

Class 720

Square D
www.squared.com
 FOR CURRENT INFORMATION



Low Ampere QOU Miniature Circuit Breakers

General Specifications Common to All Low Ampere QOU Circuit Breakers

- Terminal lug wire size 1 – #14 - #2 AWG Cu or Al.
- Reversible line and load lugs for convenient flush or surface mount wiring.
- DIN mount (symmetrical rail 35 x 7.5 DIN/EN 50 022).
- UL Listed as HACR type – 15-70 A.
- Field installable quick connectors.
- Single handle with internal common trip.
- UL Listed 48 Vdc (5,000 AIR).
- Bulk pack circuit breakers do not have mounting feet included.

Special Ordering Instructions:

For Bulk Packed QOU Circuit Breakers and Accessories

QOU circuit breakers and accessories must be ordered in multiples of the quantities listed. Units provided in standard quantity of one are individually packaged; standard quantities greater than one are bulk packed. Bulk packed circuit breakers do not include mounting brackets.

EXAMPLE:

Individual pack – small quantity orders: To receive five QOU220 circuit breakers, order five individual QOU220 circuit breakers at **\$55.00** each. Product will be individually packaged, and will include necessary mounting feet.

Bulk pack – large quantity order. To order 440 QOU220 circuit breakers using bulk packaging, order 440 QOU220B at **\$53.00** each. Product will be packaged in 22 packages of 20 pieces each. Product will not include mounting feet. To order mounting feet, order 880 pieces of QOUMFB2. Product will be packaged in eleven packages of 80 pieces each.

For QOUQ Low Amp Circuit Breakers with Four Point Quick Connect Terminals

QOUQ Low Amp circuit breakers with four point quick connect terminals are provided with permanent factory installed terminals which are affixed to the Load or “OFF” end of the circuit breaker. This special terminal will accommodate up to four 1/4 inch female quick connect wire terminations. Total ampacity of these connections must not exceed the rating of the circuit breaker. Price addition is **\$5.60** for single-pole, **\$11.20** for 2-pole and **\$16.80** for 3-pole circuit breakers.

EXAMPLE:

To order QOUQ circuit breakers, change the Catalog Number prefix from “QOU” to “QOUQ”. To order a QOU220 with factory installed four point quick connect terminals, order one QOUQ220 circuit breaker at **\$55.00** each plus **\$5.60** per pole (a total price of **\$65.60**).

Interrupting Ratings..... Page 6-2
 Accessories.....Pages 6-37, 6-38, 6-43
 Dimensions..... Pages 6-45, 6-46

Low Ampere QOU Series 3 Circuit Breaker

No. of Poles	Description	AIR Rating	Voltage Rating	Ampere Rating	Catalog Number	Unit Price	Order Qty.
One	Thermal-Magnetic Circuit Breaker	10,000 AIR	120/240 Vac	10	QOU110 QOU110B	\$ 25.50 24.00	1 40
		5,000 AIR	277 Vac	10	QYU110□ QYU110B□	77.00 76.00	1 40
		10,000 AIR	120/240 Vac	15	QOU115 QOU115B	25.50 24.00	1 40
				15	QOU115HM QOU115HMB	25.50 24.00	1 40
		5,000 AIR	277 Vac	15	QYU115□ QYU115B□	77.00 76.00	1 40
		10,000 AIR	120/240 Vac	20	QOU120 QOU120B	25.50 24.00	1 40
				20	QOU120HM QOU120HMB	25.50 24.00	1 40
		5,000 AIR	277 Vac	20	QYU120□ QYU120B□	77.00 76.00	1 40
		10,000 AIR	120/240 Vac	25	QOU125 QOU125B	25.50 24.00	1 40
		5,000 AIR	277 Vac	25	QYU125□ QYU125B□	77.00 76.00	1 40
		10,000 AIR	120/240 Vac	30	QOU130 QOU130B	25.50 24.00	1 40
		5,000 AIR	277 Vac	30	QYU130□ QYU130B□	77.00 76.00	1 40
		10,000 AIR	120/240 Vac	35	QOU135 QOU135B	25.50 24.00	1 40
				40	QOU140 QOU140B	25.50 24.00	1 40
				45	QOU145 QOU145B	25.50 24.00	1 40
				50	QOU150 QOU150B	25.50 24.00	1 40
				60	QOU160 QOU160B	25.50 24.00	1 40
				70	QOU170 QOU170B	49.40 44.90	1 40
Two	Thermal-Magnetic Circuit Breaker	10,000 AIR	120/240 Vac	10	QOU210 QOU210B	55.00 53.00	1 20
				15	QOU215 QOU215B	55.00 53.00	1 20
			240 Vac	15	QOU215H QOU215HB	107.00 102.00	1 20
			120/240 Vac	20	QOU220 QOU220B	55.00 53.00	1 20
			240 Vac	20	QOU220H QOU220HB	107.00 102.00	1 20
			120/240 Vac	25	QOU225 QOU225B	55.00 53.00	1 20
			240 Vac	25	QOU225H QOU225HB	107.00 102.00	1 20
			120/240 Vac	30	QOU230 QOU230B	55.00 53.00	1 20
			240 Vac	30	QOU230H QOU230HB	107.00 102.00	1 20
			120/240 Vac	35	QOU235 QOU235B	55.00 53.00	1 20
				40	QOU240 QOU240B	55.00 53.00	1 20
				45	QOU245 QOU245B	55.00 53.00	1 20
				50	QOU250 QOU250B	55.00 53.00	1 20
			240 Vac	60	QOU200 QOU200B	55.00 53.00	1 20
				60	QOU260 QOU260B	55.00 53.00	1 20
				70	QOU270 QOU270B	109.00 107.00	1 20
Three	Thermal-Magnetic Circuit Breaker	10,000 AIR	240 Vac	10	QOU310 QOU310B	181.00 178.00	1 40
				15	QOU315 QOU315B	181.00 178.00	1 40
				20	QOU320 QOU320B	181.00 178.00	1 40
				25	QOU325 QOU325B	181.00 178.00	1 40
				30	QOU330 QOU330B	181.00 178.00	1 40
				35	QOU335 QOU335B	181.00 178.00	1 40
				40	QOU340 QOU340B	181.00 178.00	1 40
				45	QOU345 QOU345B	181.00 178.00	1 40
				50	QOU350 QOU350B	181.00 178.00	1 40
				60	QOU360 QOU360B	181.00 178.00	1 40
	Non-Auto Switch	N/A	240 Vac	60	QOU300 QOU300B	181.00 178.00	1 40

□ UL Recognized Component, Supplementary Protector.

Note: See ordering instructions above left, all catalog numbers ending in B must be ordered in bulk package quantities.





■ Features :

- Universal AC input/Full range
- Protections: Short circuit / Overload / Over voltage
- Cooling by free air convection
- Can be installed on DIN rail TS-35/7.5 or 15
- NEC class 2 / LPS compliant
- Built in DC OK active signal
- LED indicator for power on
- No load power consumption<0.75W
- 100% full load burn-in test
- 3 years warranty



SPECIFICATION

SPECIFICATION					
MODEL		MDR-20-5	MDR-20-12	MDR-20-15	MDR-20-24
OUTPUT	DC VOLTAGE	5V	12V	15V	24V
	RATED CURRENT	3A	1.67A	1.34A	1A
	CURRENT RANGE	0 ~ 3A	0 ~ 1.67A	0 ~ 1.34A	0 ~ 1A
	RATED POWER	15W	20W	20W	24W
	RIPPLE & NOISE (max.) Note.2	80mVp-p	120mVp-p	120mVp-p	150mVp-p
	VOLTAGE ADJ. RANGE	4.75 ~ 5.5V	10.8 ~ 13.2V	13.5 ~ 16.5V	21.6 ~ 26.4V
	VOLTAGE TOLERANCE Note.3	±2.0%	±1.0%	±1.0%	±1.0%
	LINE REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	LOAD REGULATION	±1.0%	±1.0%	±1.0%	±1.0%
	SETUP, RISE TIME Note.5	500ms, 30ms/230VAC 1000ms, 30ms/115VAC at full load			
HOLD UP TIME (Typ.)	50ms/230VAC 20ms/115VAC at full load				
INPUT	VOLTAGE RANGE	85 ~ 264VAC	120 ~ 370VDC		
	FREQUENCY RANGE	47 ~ 63Hz			
	EFFICIENCY (Typ.)	76%	80%	81%	84%
	AC CURRENT (Typ.)	0.55A/115VAC 0.35A/230VAC			
	INRUSH CURRENT (Typ.)	COLD START 20A/115VAC 40A/230VAC			
	LEAKAGE CURRENT	<1mA / 240VAC			
PROTECTION	OVERLOAD	105 ~ 160% rated output power Protection type : Constant current limiting, recovers automatically after fault condition is removed			
	OVER VOLTAGE	5.75 ~ 6.75V	13.8 ~ 16.2V	17.25 ~ 20.25V	27.6 ~ 32.4V
		Protection type : Shut down o/p voltage, re-power on to recover			
FUNCTION	DC OK ACTIVE SIGNAL (max.)	3.75 ~ 6V / 50mA	9 ~ 13.5V / 40mA	11.5 ~ 16.5V / 40mA	18 ~ 27V / 20mA
ENVIRONMENT	WORKING TEMP.	-20 ~ +70℃ (Refer to output load derating curve)			
	WORKING HUMIDITY	20 ~ 90% RH non-condensing			
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 10 ~ 95% RH			
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)			
	VIBRATION	Component:10 ~ 500Hz, 2G 10min./1cycle, 60min. each along X, Y, Z axes; Mounting: Compliance to IEC60068-2-6			
SAFETY & EMC (Note 4)	SAFETY STANDARDS	UL508, TUV EN60950-1 approved, NEC class 2 / LPS compliant			
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC I/P-FG:1.5KVAC O/P-FG:0.5KVAC			
	ISOLATION RESISTANCE	I/P-O/P, I/P-FG, O/P-FG:100M Ohms/500VDC			
	EMI CONDUCTION & RADIATION	Compliance to EN55011,EN55022 (CISPR22), EN61204-3 Class B			
	HARMONIC CURRENT	Compliance to EN61000-3-2,-3			
	EMS IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, ENV50204, EN55024,EN61000-6-1,EN61204-3, light industry level, criteria A			
OTHERS	MTBF	236.9K hrs min. MIL-HDBK-217F (25℃)			
	DIMENSION	22.5*90*100mm (W*H*D)			
	PACKING	0.19Kg; 72pcs/14.7Kg/0.91CUFT			
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives. 5. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.				

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									
0.5	1	2	2	5	7.5	9		3	0	1	1	LC1D09 ♦♦	94.00	119.00
—	—	—	—	—	—	—	20	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	—	—	—	LC1D40004 ■	296.00	353.00
—	—	—	—	—	—	—	—	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	—	—	—	LC1D65	322.00	379.00
—	—	—	—	—	—	—	—	4	0	0	0	LC1D65004 ■	446.00	503.00
—	—	—	—	—	—	—	—	2	2	—	—	LC1D65008 ■	446.00	503.00
7.5	15	25	30	60	60	80	—	3	—	1	1	LC1D80	363.00	420.00
—	—	—	—	—	—	—	—	4	0	—	—	LC1D80004 ■	489.00	524.00
—	—	—	—	—	—	—	—	2	2	0	0	LC1D80008 ■	489.00	524.00
—	—	30	40	75	100	115	200	3	—	1	1	LC1D115	479.00	479.00
—	—	40	50	100	125	150	—	3	0	—	—	LC1D150	696.00	696.00
—	—	—	—	—	—	—	—	4	—	0	0	LC1D115004	630.00	630.00

- ▲ 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 LC1111	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	L RD01	LR3D01	—	—	60.00
0.16–0.25		L RD02	LR3D02	—	—	
0.25–0.40		L RD03	LR3D03	—	—	
0.40–0.63		L RD04	LR3D04	—	—	
0.63–1		L RD05	LR3D05	—	—	
1–1.6		L RD06	LR3D06	—	—	
1.6–2.5		L RD07	LR3D07	—	—	
2.5–4		L RD08	LR3D08	L RD1508	LR3D1508A1	
4–6		L RD10	LR3D10	L RD1510	LR3D1510A1	
5.5–8	D09–D32	L RD12	LR3D12	L RD1512	LR3D1512A1	62.00
7–10	D09–D32	L RD14	LR3D14	L RD1514	LR3D1514A1	
9–13	D12–D32	L RD16	LR3D16	L RD1516	LR3D1516A1	
12–18	D18–D32	L RD21	LR3D021	L RD1521	LR3D1521A1	
16–24	D25–D32	L RD22	LR3D22	—	—	
17–25	D25–D32	—	—	—	LR3D1522A1	
23–32	D25–D32	L RD32	LR3D32	—	—	73.00
23–28	D25–D32	—	—	L RD1530	LR3D1530A1	
25–32	D25–D32	—	—	L RD1532	LR3D1532A1	
30–38	D32	L RD35	LR3D35	—	—	107.00
17–25	D40–D80	L RD3322	LR3D3322	L RD23522	LR3D3522	
23–32	D40–D80	L RD3353	LR3D3353	L RD23553	LR3D3553	
30–40	D40–D80	L RD3355	LR3D3355	L RD23555	LR3D3555	
37–50	D50–D80	L RD3357	LR3D3357	L RD23557	LR3D3557	
48–65	D50–D80	L RD3359	LR3D3359	L RD23559	LR3D3559	
55–70	D65–D80	L RD3361	LR3D3361	L RD23561	LR3D3561	127.00
63–80	D65–D80	L RD3363	LR3D3363	L RD23563	LR3D3563	
80–104	D80	L RD3365	—	—	—	
80–104	D115–D150	L RD4365	—	—	—	362.00
95–120	D115–D150	L RD4367	—	—	—	
110–140	D150	L RD4369	—	—	—	

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

Contactors & Overload Relays

TeSys™ F-Line Non-reversing

Refer to Catalog 8502CT9901



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 ▲	\$ Price
200 V 208 V	220 V 240 V	460 V 480 V	575 V 600 V	AC-3	AC-1		Panel Mount with Screws	
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
						4	LC1F4004	2133.00
						2	LC1F5002	4324.00
150	200	400	500	500	700	3	LC1F500	4970.00
						4	LC1F5004	5617.00
250	300	600	800	630	1000	2	LC1F6302	5917.00
						3	LC1F630	6872.00
						4	LC1F6304	7582.00
						3	LC1F780	7788.00
Current Rated				780	1600	4	LC1F7804	9940.00
						3	LC1F800	6676.00
—	450	800	900	800	1000	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	—	—

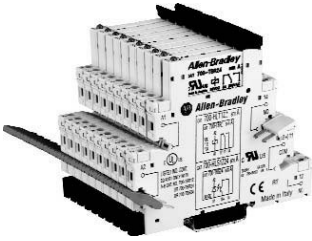
- ▼ Not available for LC1D40 - LC1D150
- △ Not available for LC1D115 or LC1D150
- Not available for LC1F780
- The 600 V coils for the LC1F400 - LC1F630 do not include an auxiliary contact for holding circuits.
- ♦ For additional voltage codes refer to the IEC Contactor and Starter Catalog 8502CT9901.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

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

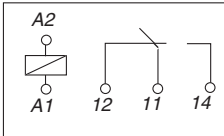
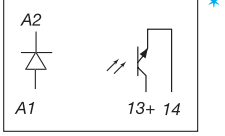
Volts AC/DC	24	48	110	120	127	208	220	240	277	380	415	440	480	575	600	660
50/60 HZ	—	—	FW	FW	FW	—	MW	MW	—	QW	QW	QW	—	—	—	—

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

Bulletin 700-HL
Interposing/Isolation Relays
 Overview/Product Selection

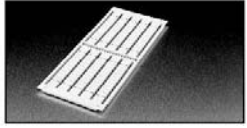
	Bulletin 700-HL “Terminal Block Relay” • Relay and Socket Assembled Interface Modules For High Density Interposing or Isolation Applications • Screw Terminal and Spring Clamp Bases • 6 A Relay, Choice of Silver or Gold Contacts • 2 A Solid-State Relay • SPDT (Relay), 1 N.O. (Solid-State) • Built-in Retainer Clip and Snap-in Marker Lever • Standard LED, Reverse Polarity Protection, and Surge Protection • Externally Replaceable Relay Modules • Unique Leakage Current Suppression Version to Address Industry Concerns of Nuisance Coil Turn-on or Contact Non-Drop Out when Connecting to PLCs with Leakage Current	Table of Contents Product Selection ... this page Accessories 9-51 Specifications 9-52 Approximate Dimensions 9-54 Standards Compliance and Certifications See Specification Table In This Section.
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Product Selection

Standard built-in Features: • LED • Reverse Polarity Protection for DC Inputs • Coil Surge Protection	 Cat. No. 700-HLT1Z24	 Cat. No. 700-HLT2Z24	 Cat. No. 700-HLS1Z24	 Cat. No. 700-HLS2Z24
Specifications			 ★	
Output Type	SPDT (1 C/O); $I_{th} = 6A\ddagger$		1 N.O. solid-state; $I_{th} = 2\text{ A, } 24\text{V DC}$	
Recommended Tightening Torque	0.5 Nm max. (4.4 lb.-in.)			
Wire Range	Screw Terminal: 0.14 mm ² ...2.5 mm ² (#26...#14 AWG), Spring Terminal: 0.2 mm ² ...2.5 mm ² (#24...#14 AWG)			
Approvals	cULus, cURus, ABS, CE			

Assembled Devices	Pkg. Quantity	Cat. No. (Screw Terminals)	Cat. No. (Spring Clamp Terminals)	Pkg. Quantity	Cat. No. (Screw Terminals)	Cat. No. (Spring Clamp Terminals)
Input Voltage						
12V DC	10	700-HLT1Z12†	700-HLT2Z12	—	—	—
24V DC	10	700-HLT1Z24†	700-HLT2Z24	10	700-HLS1Z24†	700-HLS2Z24
48V DC	10	700-HLT1Z48†	700-HLT2Z48	10	700-HLS1Z48†	700-HLS2Z48
12V AC/DC	10	700-HLT1U12	700-HLT2U12	—	—	—
24V AC/DC	10	700-HLT1U24	700-HLT2U24	—	—	—
48V AC/DC	10	700-HLT1U48	700-HLT2U48	—	—	—
110/125V AC/DC	10	700-HLT1U1	700-HLT2U1	10	700-HLS1U1†	700-HLS2U1
220...240V AC/DC	10	700-HLT1U2	700-HLT2U2	10	700-HLS1U2†	700-HLS2U2
Built-in LCSC (leakage current suppression circuit) 120V AC and 125V DC§	10	700-HLT1L1†	—	10	700-HLS1L1†	—
Built-in LCSC (leakage current suppression circuit) 240V AC§	10	700-HLT1L2†	—	10	700-HLS1L2†	—

* Reverse polarity on the output terminals of the solid-state relay will result in the output being “On” regardless of the state of the input voltage.
 † Electromechanical relay to solid-state relay interchangeability is possible.
 ‡ For Gold-plated contacts: Add the letter “X” at the end of the catalog number. For example: if Cat. No. 700-HLT1Z24 is required with gold plating, the new cat. no. is 700-HLT1Z24X.
 § Leakage current suppression up to 2.2 mA off state current.

	Description	Pkg. Quantity	Socket Input Voltage	Cat. No.
 Cat. No. 700-TBR24	Replacement Relays Order must be for 20 relays or multiples of 20.	20	12V	700-TBR12*
			24V	700-TBR24*
			48V	700-TBR48*
			110/125V 220...240V 120V...125V 240V	700-TBR60*
 Cat. No. 700-TBS24	Replacement SSR 4-blade miniature relay for use with 1 N.O. SSR output. Order must be for 20 relays or multiples of 20.	20	24V	700-TBS24
			48V 110/125V 220...240V 120V...125V 240V 120/125V	700-TBS60
 Cat. No. 700-TBJ20B	20-Way Jumper Can be cut to required length. <i>I_{th}</i> =36 A max per 20-way jumper.	1	Color	
			Red	700-TBJ20R
			Gray	700-TBJ20G
			Blue	700-TBJ20B
 Cat. No. 700HN177	End Barrier Used for visual inspection of groups, safe separation of neighboring 700-HL modules that end with jumpers. Order must be for 10 or multiples of 10.	10	Black	700-HN177
	Snap-in Marker These snap-in markers have a 6 x 10 mm surface and snap into the ejection lever for the relay.	100	Blank	1492-MC6X10
			Standard 1492-MC6X10	www.ab.com/catalogs for information
			Custom	†

* For gold-plated contacts: Add the letter "X" at the end of the catalog number. For example: if Cat. No. 700-TBR24 is required with gold plating, the new cat. no. is 700-TBR24X. Also add \$1 (US) to the price per relay.

† Go to <http://www.ab.com/software/termblock/index.html> and download software. Create custom text, save file, and e-mail to your local Allen-Bradley distributor.

Note: Terminal block relay bases are not sold separately.

Bulletin 700-HL
Interposing/Isolation Relays
Specifications*

Cat. No. 700-HLT... (Relay Output)							
Electrical Ratings							
Pilot Duty Rating	6 A NEMA B 300, R 300						
Rated Thermal Current (I_{th})	1-Pole — 6 A						
Rated Insulation Voltage (U_i)	250V IEC, 300V UL/CSA						
Contacts	Inductive	1-Pole					
	24V AC, 1-phase	30 A	▶][◀	5 A	◀][▶		
	120V AC, 1-phase	30 A		3 A			
	240V AC, 1-phase	15 A		1.5 A			
	Make, Break & Continuous V DC	24V DC				1.0 A	
		120V DC				0.2 A	
		240V DC				0.1 A	
Min. Permissible Contact Ratings	12V, 6 mA (72 mW) for Silver Contacts, 8V, 2.5 mA (20 mW) for Gold Contacts						
Permissible Coil Voltage Variation	Pickup:	85...110% of Nominal Voltage at 50 Hz 85...110% of Nominal Voltage at 60 Hz 80...110% of Nominal Voltage at DC			Must Dropout Voltage:	10% of Nominal Voltage at AC 5% of Nominal Voltage at DC	
Power Consumption ±10%	AC	0.3 VA					
	DC	0.2 W					
Design Specification/Test Requirements							
Dielectric Withstand Voltage	Pole to Pole (VRMS)	1000V					
	Contact to Coil (VRMS)	4000V					
Input Voltage	12V AC/DC	24V AC/DC	48V AC/DC	120V AC/DC	240V AC/DC	120V LCSC	240V LCSC
Impedance (Ohms)	1 K	2 K	6 K	26 K	56 K	16 K	35 K
Mechanical							
Degree of Protection	IP20						
Mechanical Life Operations	1 x 10 ⁷						
Electrical Life Operations	6 A Resistive: 100,000 min. 24V DC, 1 A Inductive: 200, 000 min. 120V AC 1 A Inductive: 300,000 min.						
Switching Frequency Operations (no-load)	10 cycles/sec						
Coil Voltages	See Overview/Product Selection						
Operating Time at Nominal Voltage at 20°C (ms)	Pickup	7 ms					
	Dropout	3 ms					
Maximum Operating Rate (full load = 6 A)	6 cycles/min.						
Coil Surge Protection	Per EN 61000-4.5; Surge Immunity (801-5) Class III: 2 kV common and 1 kV differential mode						
Environmental							
Temperature	Operating	−40...+55 °C					
	Storage	−40...100 °C					
Altitude	2000 m (6560 ft)						
Construction							
Insulating Material	Molded High Dielectric Material						
Enclosure	Relay IP67						
Contact Material	Silver Tin Ox., AgSnO or Silver with Gold Plating, AgSnO + Au						
Terminal Markings on Socket	In accordance with EN50 0005						
Certifications	cURus Recognized, File E3125,Guide NLDX 2,cULus Listed, with Allen-Bradley socket, CE Marked (per EU Low Voltage Directive 73/23 EEC 93/68 EEC), ABS (American Bureau of Shipping)						
Standards	EN60947-4-1,EN60947-5-1,IEC 947CSA 22.2,UL 508,NEMA IEE MAC Compliant, ICS-2 Compliant						

* Performance Data – See Important 2, publication A115.

Push Buttons & Operator Interface - XB5 22 mm Double Insulated
Emergency Stop Operators and Yellow Contrast Plates

Mushroom Heads for Maintained Push Buttons



Shape of Head	Type of Push	Diameter of Head	Color	Catalog Number
	Trigger action Push-pull ▲	40 mm	Red	ZB5AT84
	Trigger action Turn to release ▲	30 mm	Red	ZB5AS834
		40 mm	Red	ZB5AS844
	Trigger action Key release (No. 455) ▲	30 mm	Red	ZB5AS934
		40 mm	Red	ZB5AS944 ■
		60 mm	Red	ZB5AS964
	Push-pull	30 mm	Black	ZB5AT24
			Red	ZB5AT44
		40 mm	Black	ZB5AT2
			Red	ZB5AT4
		60 mm	Black	ZB5AX2
			Red	ZB5AX4
	Turn to release	30 mm	Black	ZB5AS42
			Red	ZB5AS44
		40 mm	Black	ZB5AS52
			Red	ZB5AS54
		60 mm	Yellow	ZB5AS55
			Black	ZB5AS62
	Key release (No. 455)	30 mm	Black	ZB5AS72
			Red	ZB5AS74
		40 mm	Black	ZB5AS12
			Red	ZB5AS14 ▲
		60 mm	Black	ZB5AS22
			Red	ZB5AS24

- Other key numbers:
- key No. 421E: add the suffix 12 to the reference.
 - key No. 458A: add the suffix 10 to the reference.
 - key No. 520E: add the suffix 14 to the reference.
 - key No. 3131A: add the suffix 20 to the reference.
- Example:
The reference for a Ø 40 mm red mushroom head for a trigger action, maintained push button, with release by key No. 421E becomes: ZB5AS94412.
- ▲ Maximum number of contact blocks fitted to associated body: 4.

Circular Legends for Emergency Stop Mushroom Heads (yellow background)



Diameter	Text	Catalog Number
60 mm	Blank	ZBY9101
	EMERGENCY STOP	ZBY9330
90 mm	Blank	ZBY8101
	EMERGENCY STOP	ZBY8330

To combine with bodies:
see pages 36017/2 to 36017/6

103547



ZB5 AW743

Heads for Ø 40 latching mushroom head pushbuttons

Shape of head	Type of push	Colour of push	Reference	Weight kg
	Turn to release	White	ZB5 AW713	0,022
		Green	ZB5 AW733	0.022
		Red	ZB5 AW743	0.022
		Yellow	ZB5 AW753	0.022
		Blue	ZB5 AW763	0.022

Heads for illuminated selector switches with standard handle (1)

Shape of head	Number and type of positions	Colour of handle	Reference	Weight kg
Only for use with bodies comprising a light source with integral LED 				
	2 - stay put 	White	ZB5 AK1213	0.021
		Green	ZB5 AK1233	0.021
		Red	ZB5 AK1243	0.021
		Yellow	ZB5 AK1253	0.021
		Blue	ZB5 AK1263	0.021
	2 - spring return from right to left	White	ZB5 AK1413	0.021
		Green	ZB5 AK1433	0.021
		Red	ZB5 AK1443	0.021
		Yellow	ZB5 AK1453	0.021
		Blue	ZB5 AK1463	0.021
	3 - stay put	White	ZB5 AK1313	0.021
		Green	ZB5 AK1333	0.021
		Red	ZB5 AK1343	0.021
		Yellow	ZB5 AK1353	0.021
		Blue	ZB5 AK1363	0.021
	3 - spring return to centre	White	ZB5 AK1513	0.021
		Green	ZB5 AK1533	0.021
		Red	ZB5 AK1543	0.021
		Yellow	ZB5 AK1553	0.021
		Blue	ZB5 AK1563	0.021
	3 - spring return from right to centre	White	ZB5 AK1813	0.021
		Green	ZB5 AK1833	0.021
		Red	ZB5 AK1843	0.021
		Yellow	ZB5 AK1853	0.021
		Blue	ZB5 AK1863	0.021
	3 - spring return from left to centre	White	ZB5 AK1713	0.021
		Green	ZB5 AK1733	0.021
		Red	ZB5 AK1743	0.021
		Yellow	ZB5 AK1753	0.021
		Blue	ZB5 AK1763	0.021

814578



ZB5 AK1213

814579



ZB5 AK1463

(1) NEMA type 13.

Price List for Spring Clamp Products

ZB5 Electrical Components—22 mm Push Buttons



ZB5AZ009



ZBE1015



ZB5AZ1015

Body/Mounting Collar

For use with	Catalog Number	\$ Price
Contact block or light module	ZB5AZ009	5.40

Contact Blocks

Spring terminal connections (1)

Contacts for standard applications

Description	Type of contact			Catalog Number	\$ Price
	Single	1	—	ZBE1015	18.00
		—	1	ZBE1025	18.00
Contact blocks	Single with body/mounting collar	1	—	ZB5AZ1015	24.00
		—	1	ZB5AZ1025	24.00
		2	—	ZB5AZ1035	42.00
		—	2	ZB5AZ1045	42.00

Light Modules

Spring terminal connections (1)

Description	Supply voltage	Color of light source	Catalog Number	\$ Price
Integral LED (to combine with heads for integral LED)	12 Vac/Vdc	White	ZBVJ15	57.00
		Green	ZBVJ35	57.00
		Red	ZBVJ45	57.00
		Orange	ZBVJ55	57.00
		Blue	ZBVJ65	57.00
	24 Vac/Vdc	White	ZBVB15	57.00
		Green	ZBVB35	57.00
		Red	ZBVB45	57.00
		Orange	ZBVB55	57.00
		Blue	ZBVB65	57.00
	110–120 Vac	White	ZBVG15	57.00
		Green	ZBVG35	57.00
		Red	ZBVG45	57.00
		Orange	ZBVG55	57.00
		Blue	ZBVG65	57.00
	230–240 Vac	White	ZBVM15	57.00
		Green	ZBVM35	57.00
		Red	ZBVM45	57.00
		Orange	ZBVM55	57.00
		Blue	ZBVM65	57.00

(1) Additional blocks **cannot** be attached to the back of these contact blocks or light modules.

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

Sales transactions (including those for Telemecanique® brand and other products) are subject to the latest published Conditions of Sale of the Square D Company.

Possession of this Price List by any individual or company is not to be construed as our offer to sell any of the products listed herein at the price shown.

Schneider Electric USA
8001 Knightdale Blvd.
Knightdale, NC 27545 USA
1-888 Square D
(1-888-778-2733)
www.Schneider-Electric.us

Bulletin 855PS — Panel Mount Xenon Strobe

855PS – $\frac{B}{a} \quad \frac{10}{b} \quad \frac{ME}{c} \quad \frac{3}{d} \quad \frac{22}{e}$



30 mm Panel Mount Strobe



45 mm Panel Mount Strobe



65 mm Panel Mount Strobe

a

Housing Color	
Code	Description
B	Black

b

Voltage	
Code	Description
12	12V AC/DC
24	24V AC/DC
10	120V AC
20	240V AC
30	12...24V AC/DC

c

Diameter	
Code	Description
SE	30 mm*
ME	45 mm*
LE	65 mm*

* Only available in 12V AC/DC, 24V AC/DC, 120V AC, or 240V AC.

* Only available in 12...24V AC/DC, 120V, or 240V AC.

d

Lens Color	
Code	Description
3	Green
4	Red
5	Amber
6	Blue
7	Clear
8	Yellow

e

Mounting Hole	
Code	Description
22	22.5 mm

Voltage	Diameter [mm]	Lens Color	Cat. No.
24V AC/DC	30	Green	855PS-B24SE322
		Red	855PS-B24SE422
12...24V AC/DC	45	Green	855PS-B30ME322
		Red	855PS-B30ME422
	65	Green	855PS-B30LE322
		Red	855PS-B30LE422
120V AC	30	Green	855PS-B10SE322
		Red	855PS-B10SE422
	45	Green	855PS-B10ME322
		Red	855PS-B10ME422
	65	Green	855PS-B10LE322
		Red	855PS-B10LE422

PRODUCT PROFILE

MicroLogix™ 1400 / 1766

Small Programmable Logic Controller

Advantages

- Expand your application capabilities with up to 7 expansion I/O modules for a maximum of 144 discrete I/O
- Up to 6 embedded 100 kHz high-speed counters (on controllers with dc inputs)
- 2 Serial ports with DF1/DH485/Modbus RTU/DNP3/ASCII protocol support
- Ethernet port provides you with peer-to-peer messaging, web server and email capabilities
- Built-in LCD with backlight allows you to view controller and I/O status, and provides a simple interface for messages, bit / integer monitoring and manipulation

Target Applications

- *General Industrial Machinery (Material Handling, Packaging, Assembly, etc.)*
- *HVAC/Building Automation*
- *SCADA (Oil & Gas, Water/Waste Water, and Electric Power)*
- *Food & Beverage*
- *Pharmaceutical*
- *Commercial Machinery (Vending, Industrial Washers & Dryers, etc.)*



Overview

The new Allen-Bradley® MicroLogix™ 1400 from Rockwell Automation complements the existing MicroLogix family of small programmable logic controllers. MicroLogix 1400 combines the features you demand from MicroLogix 1100, such as EtherNet/IP, online editing, and a built-in LCD, plus provides you with enhanced features, such as: higher I/O count, faster High Speed Counter/PTO and enhanced network capabilities

Take advantage of the built-in LCD with back lighting to set the Ethernet network configuration, display floating point values on a user configurable display, display OEM logos at startup and read or write any binary, integer and long file elements in the data table. Controllers without embedded analog come with 32 digital I/O count, while analog versions have 32 digital I/O and 6 analog I/O. All versions can be expanded using up to seven 1762 I/O modules - the same I/O modules that MicroLogix 1100 and 1200 utilize.

Three embedded communication ports provide you with superior communications capabilities. MicroLogix 1400 offers an isolated RS232C/RS485 combination port; a non-isolated RS232C port; and an RJ-45 port for 10/100 Mbps EtherNet/IP peer-to-peer messaging.

Similar to the rest of the MicroLogix family, MicroLogix 1400 is programmed with RSLogix 500 programming software (Version 8.1 and above) as well as new RSLogix Micro programming software.

SPECIFICATIONS

MicroLogix	1766-L32BWA	1766-L32AWA	1766-L32BXB	1766-L32BWAA	1766-L32AWAA	1766-L32BXBA
Input Power	120/240 VAC		24 VDC	120/240 VAC		24 VDC
Memory	non-volatile battery backed RAM					
User Program / User Data Space	10 K / 10K configurable					
Data Logging / Recipe Storage	128 K (without Recipe) / up to 64 K (after subtracting Data Logging)					
Battery Back-up	Yes					
Back-up Memory Module	Yes					
Digital Inputs	(12) Fast 24VDC (8) Normal 24VDC	(20) 120VAC	(12) Fast 24VDC (8) Normal 24VDC	(12) Fast 24VDC (8) Normal 24VDC	(20) 120VAC	(12) Fast 24VDC (8) Normal 24VDC
Digital Outputs	(12) Relay	(12) Relay	(6) Relay (3) Fast DC (3) Normal DC	(12) Relay	(12) Relay	(6) Relay (3) Fast DC (3) Normal DC
Analog Inputs / Outputs	None			(4) Voltage Inputs / (2) Voltage Outputs		
Serial Ports	(1)RS232C/RS485* , (1)RS232C**					
Serial Protocols	DF1 Full Duplex, DF1 Half Duplex Master/Slave, DF1 Radio Modem, DH-485, Modbus RTU Master/Slave, ASCII, DNP 3 Slave					
Ethernet Ports	(1) 10/100 EtherNet/IP port					
Ethernet Protocols	EtherNet/IP messaging only					
Trim Potentiometers	2 Digital					
High-Speed Inputs	Up to 6 channels @ 100 kHz	N/A	Up to 6 channels @ 100 kHz	Up to 6 channels @ 100 kHz	N/A	Up to 6 channels @ 100 kHz
Real Time Clock	Yes, embedded					
PID	Yes (limited by loop and stack memory)					
PWM /PTO	N/A		3 channel PTO (100kHz)\PWM (40kHz)	N/A		3 channel PTO (100kHz)\PWM (40kHz)
Embedded LCD	Yes					
Floating Point Math	Yes					
Online Editing	Yes					
Operating Temperature	-20 °C to +60 °C					
Storage Temperature	-40 °C (or -30 °C) to +85 °C					

* Isolated. RS232/RS485 combo port. Same as MicroLogix 1100 Comm 0

** Non-isolated RS232. standard D-sub connector.

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Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

PanelView™ Component



Component Family of Human Machine Interface Solutions

Features and Benefits

PanelView C200-C1000

- Optimized for communication with MicroLogix, Micro800 or SLC 500:DF1, DH-485, Ethernet to MicroLogix or SLC 500, and multi-vendor communications
- Display information in several languages including Chinese, Portuguese, French, Italian, German, Spanish and Korean
- Alert operators with alarm messages that include variables
- Upload and download groups of data or parameter settings with recipe feature
- Secure information on screens with user name and password protection

Software

- Design software integrated on the PanelView Component operator interface
- PC-based offline programming software, PanelView Component DesignStation is downloadable

New 4.3" TFT PanelView Component Terminal

- 64k Color Resolution
- Class 1 Div 2 certified
- Built-in Ethernet port



When you need an essential component, with added value, but with a reduced cost, the Allen-Bradley PanelView™ Component family of operator interfaces from Rockwell Automation takes human machine interface solutions to a new level: yours.

OEMs and end users can leverage on new features of PanelView Component, such as built-in programming software and integrated mounting clamps, to help improve productivity and maintenance, while enjoying the convenience and efficiencies of single-source buying.

PanelView Component offers the fundamental features on a full line of displays ranging from 2" to 10", in a compact and easy-to-understand package.

The built-in software on terminal reduces the need for installation on the computer. Simply connect to the PanelView Component through an Ethernet or USB cable and open a web browser. However, programming software (PanelView Component DesignStation) can be downloaded to your computer for offline application design.

Preferred integration with **Allen-Bradley MicroLogix™, Micro800™ and SLC™ 500 families** of programmable logic controllers offers you an ideal control and visualization solution for a wide variety of applications. Communicate via serial networks on all terminals, and take advantage of the Ethernet feature on the 4", 6" and 10" displays. Multi-vendor communications is also available including Modbus, Modbus/TCP, and Siemens MPI.

LISTEN.
THINK.
SOLVE.

PanelView Component Specifications

Type	PanelView C200		PanelView C300		PanelView C400	PanelView C600		PanelView C1000
								
Catalog Number	2711C-F2M	2711C-K2M	2711C-T3M	2711C-K3M	2711C-T4T	2711C-T6M	2711C-T6T	2711C-T10C
DISPLAY								
Size (mm)	2" (49 x 14)		3" (67 x 33)		4.3" (95 x 54)	5.7" (115 x 86)		10.4" (211 x 158)
Resolution (pixels)	122 x 32		128 x 64		480 x 272	320 x 240		640 x 480
Type	Monochrome Transflective STN				Color Transmissive TFT	Monochrome Transmissive FSTN	Color Transmissive TFT	
Operator Input	4 Function Keys	Combination Function/ Numeric Keys	Analog Touch	Combination Function/ Numeric Keys	4 Function Keys & Analog Touch	Analog Touch		
ELECTRICAL								
Communication Port	RS232 (9 pin D-Shell), RS422/RS485 (Connector)				RS232 (9 pin D-Shell), RS422/RS485 (Connector), Ethernet			
Programming Port	USB device port				USB device port, Ethernet			
Real Time Clock	No battery backup				Battery-backed			
Power Requirements	18...30V DC, C200 and C300 5W				18...30V DC, C400 3.5W, C600 10W, C1000 18W			
ENVIRONMENTAL								
Operating Temperature	0...50°C							
Enclosure	NEMA/UL Type 4X (indoor) 12, 13, and IEC IP54, IP65							
Certifications	cULus Listed; CE marked; C-Tick				cULus Listed; CE marked; C-Tick; Class 1 Div 2	cULus Listed; CE marked; C-Tick		
MECHANICAL								
Mounting Mechanism	Integrated Clamps				Quick Lever Clips	Integrated Clamps & Quick Lever Clips		Quick Lever Clips
Weight	0.2 kg	0.3 kg	0.2 kg	0.3 kg	0.35 kg	0.7 kg		1.6 kg
Dimensions Overall (H x W x D, mm)	80 x 116 x 54	119 x 139 x 55	80 x 116 x 57	119 x 139 x 55	113 x 138 x 43	154 x 209 x 57		250 x 308 x 54
Cutout Dimensions (mm)	64 x 99	99 x 119	64 x 99	99 x 119	99 x 119	135 x 189		231 x 289

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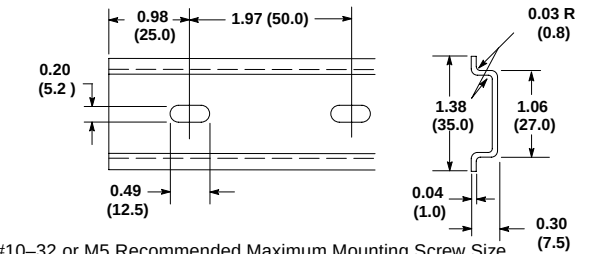
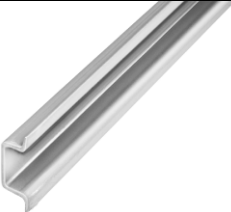
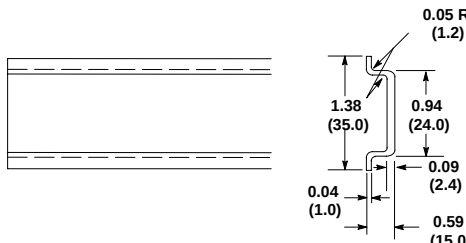
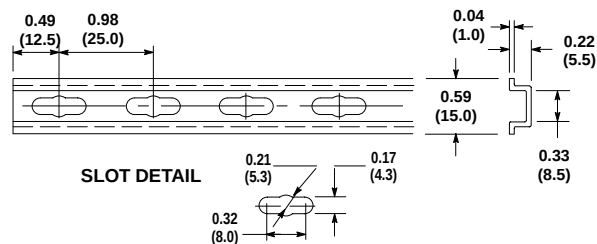
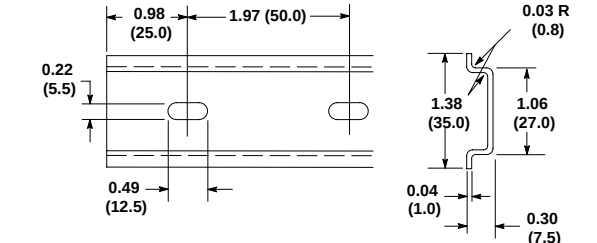
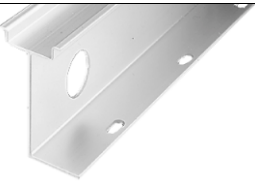
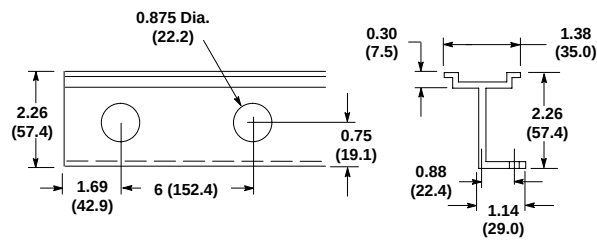
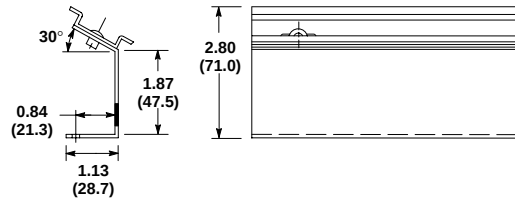
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DIN Mounting Rails

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

❶ Dimensions shown in inches (millimeters). Dimensions are not intended to be used for manufacturing purposes.
 ❷ 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

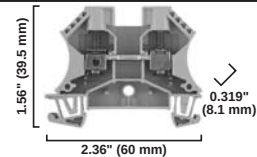
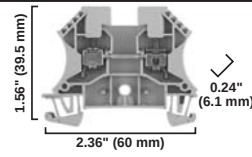
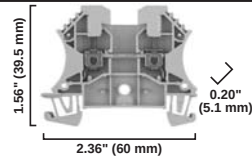
Standard Feed-Through Blocks

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		CSA	IEC	ATEX		CSA	IEC	ATEX		CSA	IEC	ATEX
Voltage Rating	600V AC/DC		800V AC/DC	550V AC/DC	600V AC/DC		800V AC/DC	690V AC/DC	600V AC/DC		800V AC/DC	550V 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.

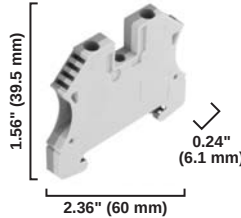
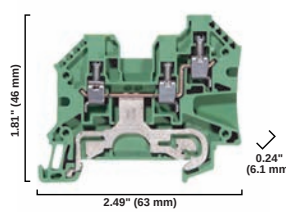
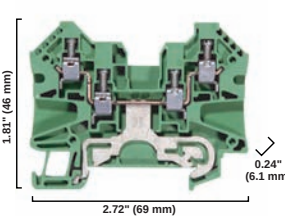
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Preferred availability cat. nos. are printed in bold


Allen-Bradley

Screw Connection Terminal Blocks

Grounding Blocks, Continued

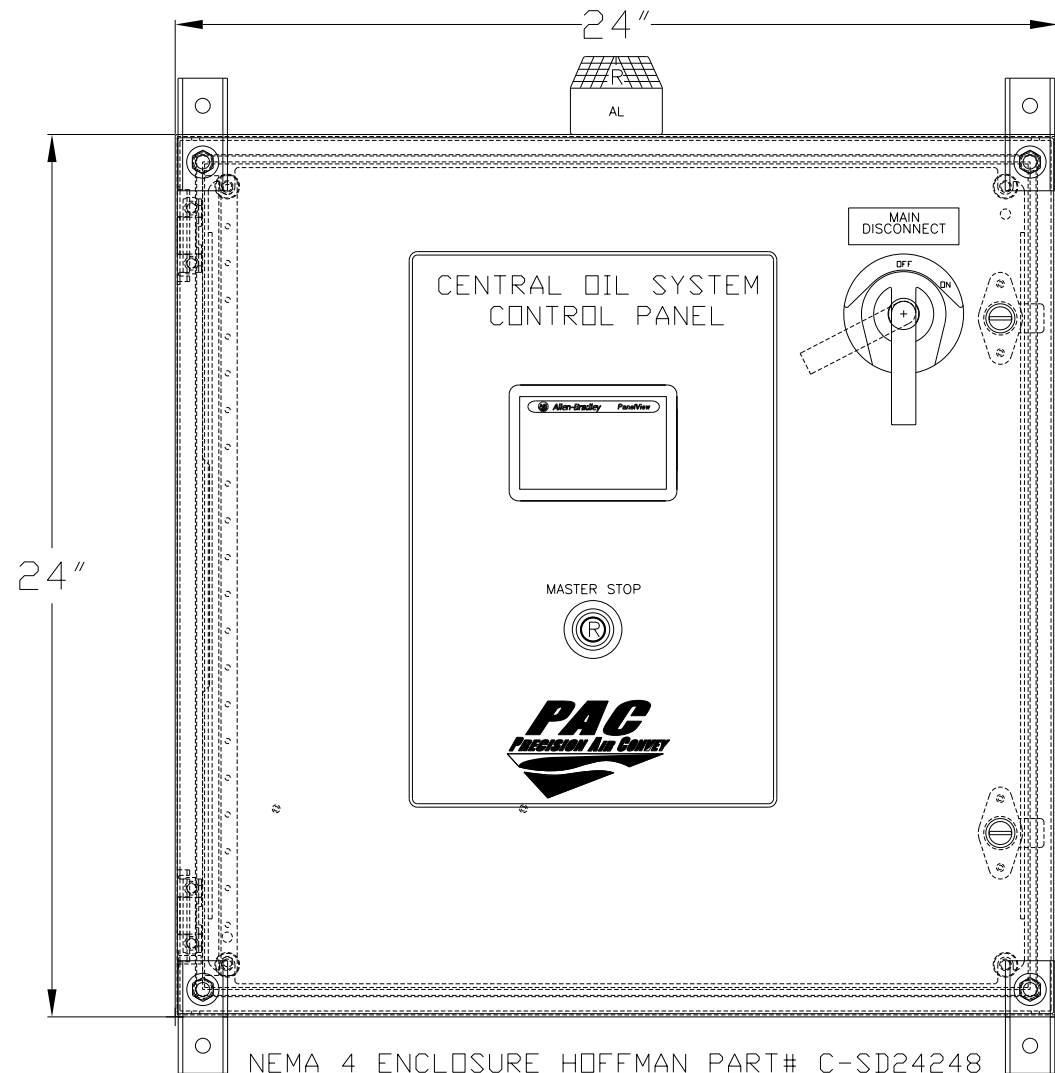
	1492-JG4				1492-JG4TW			1492-JG4Q		
Dimensions are not intended to be used for manufacturing purposes. Note: Height dimension is measured from top of rail to top of terminal block.										
Specifications	Feed-Through Ground Block				Single-level ground block with twin connection points on one side			Single-level ground block with twin connection points on both sides		
Certifications		CSA	IEC	ATEX		CSA	IEC		CSA	IEC
Voltage Rating	—				—			—		
Maximum Current	Grounding				Grounding			Grounding		
Wire Range (Rated Cross Section)	#22...10 AWG		4 mm ²	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.
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.
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.

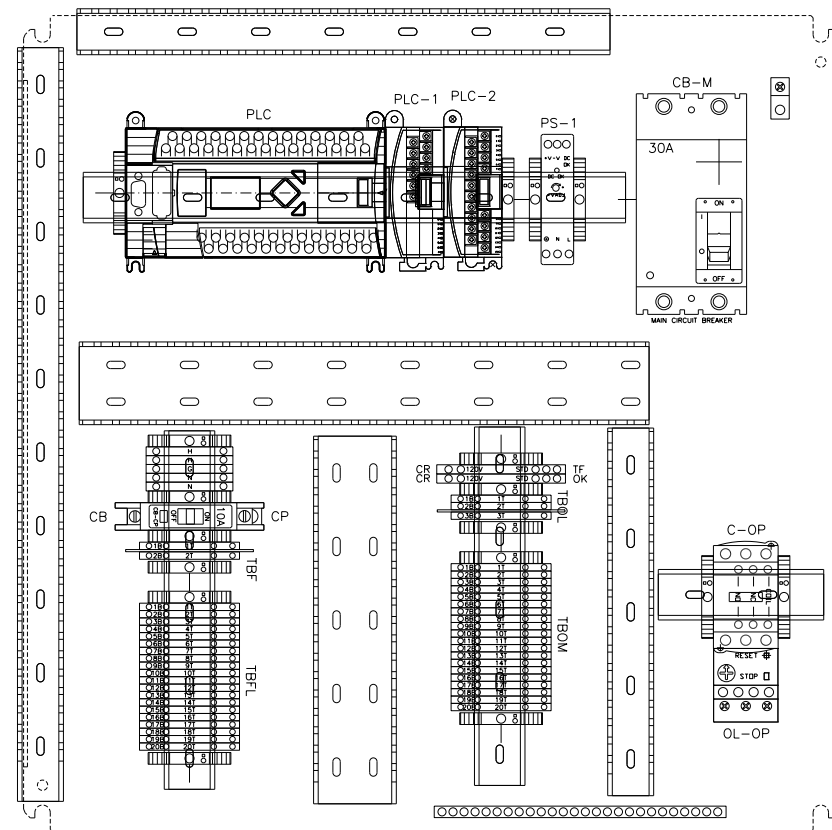
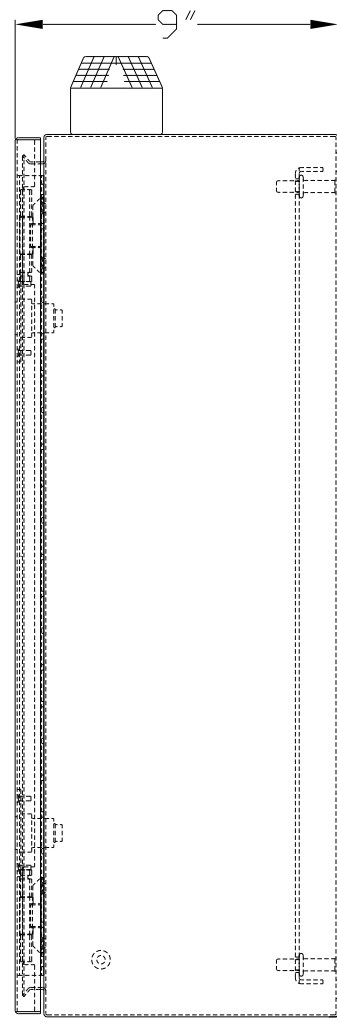
Screw Connection Terminal Blocks

Multi-Circuit Feed-Through Blocks

	1492-JD3				1492-JD4				1492-JT3M		
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	Two-Level Feed-Through Terminal Block				Two-Level, two-circuit feed-through terminal block				Three-level, three-circuit terminal block with ground point		
Certifications		CSA	IEC	ATEX		CSA	IEC	ATEX		CSA	IEC
Voltage Rating	600V AC/DC	300V AC/DC	400V AC/DC	275V AC/DC	600V AC/DC	300V AC/DC	800V AC/DC	550V AC/DC	300V AC/DC		400V AC/DC
Maximum Current	20 A	10 A	24 A	21 A	35 A	30 A	32 A	28 A	10 A		24 A
Wire Range (Rated Cross Section)	#22...12 AWG	26...12 AWG	2.5 mm ²	2.5 mm ² (20...14 AWG)	#26...10 AWG		0.5...4 mm ²	4 mm ² (20...12 AWG)	#22...12 AWG	#26...10 AWG	0.5...2.5 mm ²
Wire Strip Length	0.39 in. (10 mm)				0.315 in. (8 mm)				0.28 in. (7 mm)		
Recommended Tightening Torque	4.5...7.1 lb•in. (0.5...0.8 N•m)				4.5 lb•in. (0.5 N•m)				4.4 lb•in. (0.5 N•m)		
Density	59 pcs/ft (196 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.
Color:	Grey	1492-JD3	100		1492-JD4	100			1492-JT3M	50	
	Red	1492-JD3-RE	100		1492-JD4-RE	100			—	—	
	Blue	1492-JD3-B	100		1492-JD4-B	100			—	—	
	Black	1492-JD3-BL	100		1492-JD4-BL	100			—	—	
	Green	1492-JD3-G	100		1492-JD4-G	100			—	—	
	Yellow	1492-JD3-Y	100		1492-JD4-Y	100			—	—	
	Orange	1492-JD3-OR	100		1492-JD4-O	100			—	—	
	Brown	1492-JD3-BR	100		1492-JD4-BR	100			—	—	
	White	1492-JD3-W	100		1492-JD4-W	100			—	—	
Accessories	Cat. No.		Pkg Qty.		Cat. No.		Pkg Qty.		Cat. No.		Pkg Qty.
Mounting Rails:	199-DR1		10		199-DR1	10			199-DR1	10	
1 m Symmetrical DIN (Steel)	1492-DR5		10		1492-DR5	10			1492-DR5	10	
1 m Symmetrical DIN (Aluminum)	1492-DR6		2		1492-DR6	2			1492-DR6	2	
1 m Hi-Rise Sym. DIN (Aluminum)	1492-DR7		2		1492-DR7	2			1492-DR7	2	
1 m Angled Hi-Rise Sym. DIN (Steel)	1492-EBJD3		20		1492-EBJD4	20			1492-EBJ3TM	20	
End Barrier	Grey	1492-EBJD3-B	20		1492-EBJD4-B	20			—	—	
	Blue	1492-EBJD3-Y	20		—	—			—	—	
	Yellow	—	20		—	—			—	—	
End Anchor and Retainers:	1492-ERL35		20		—	—			—	—	
Screwless End Retainer	1492-EAJ35		100		—	—			—	—	
DIN Rail — Normal Duty	1492-EAHJ35		50		1492-EAHJ35	50			1492-EAHJ35	50	
DIN Rail — Heavy Duty	—		—		1492-CJLJ6-41	10			—	—	
Jumpers:	1492-CJJ5-10		20		1492-CJLJ6-10	20			—	—	
Screw Center Jumper — 10-pole	1492-CJJ5-4		50		1492-CJLJ6-4	60			—	—	
Screw Center Jumper — 4-pole	1492-CJJ5-3		50		1492-CJLJ6-3	60			—	—	
Screw Center Jumper — 3-pole	1492-CJJ5-2		50		1492-CJLJ6-2	60			—	—	
Screw Center Jumper — 2-pole	—		—		—	—			1492-SJ6A-50	5	
Insulated Side Jumper — 50-Pole	1492-SJ5A-24		50		—	—			—	—	
Insulated Side Jumper — 24-Pole	1492-SJ5A-10		50		—	—			—	—	
Insulated Side Jumper — 10-Pole	1492-T1		1		—	—			—	—	
Screw Type Jumper Notching Tool	1492-PPJD3		20		1492-PPJD3	20			1492-PPJD3	20	
Other Accessories:	1492-TPS23		20		—	—			—	—	
Partition Plate	1492-TP23		20		—	—			—	—	
Test Plug Socket	1492-GM35		25		1492-GM35	25			1492-GM35	25	
Test Plug	1492-M5X8 (144/card)		5		1492-MR6X8 (120/card)	5			1492-MR6X8 (120/card)	5	
Group Marking Carrier	1492-M5X5 (200/card)		5		1492-M6X5 (200/card)	5			1492-M6X5 (200/card)	5	
Marking Systems:	—		—		—	—			—	—	
Snap-in marker cards	—		—		—	—			—	—	
Snap-in marker cards	—		—		—	—			—	—	



NEMA 4 ENCLOSURE HOFFMAN PART# C-SD24248
WITH A BACKPANEL PART# C-P2424
WITH AN WALL MOUNT KIT PART# C-MFK

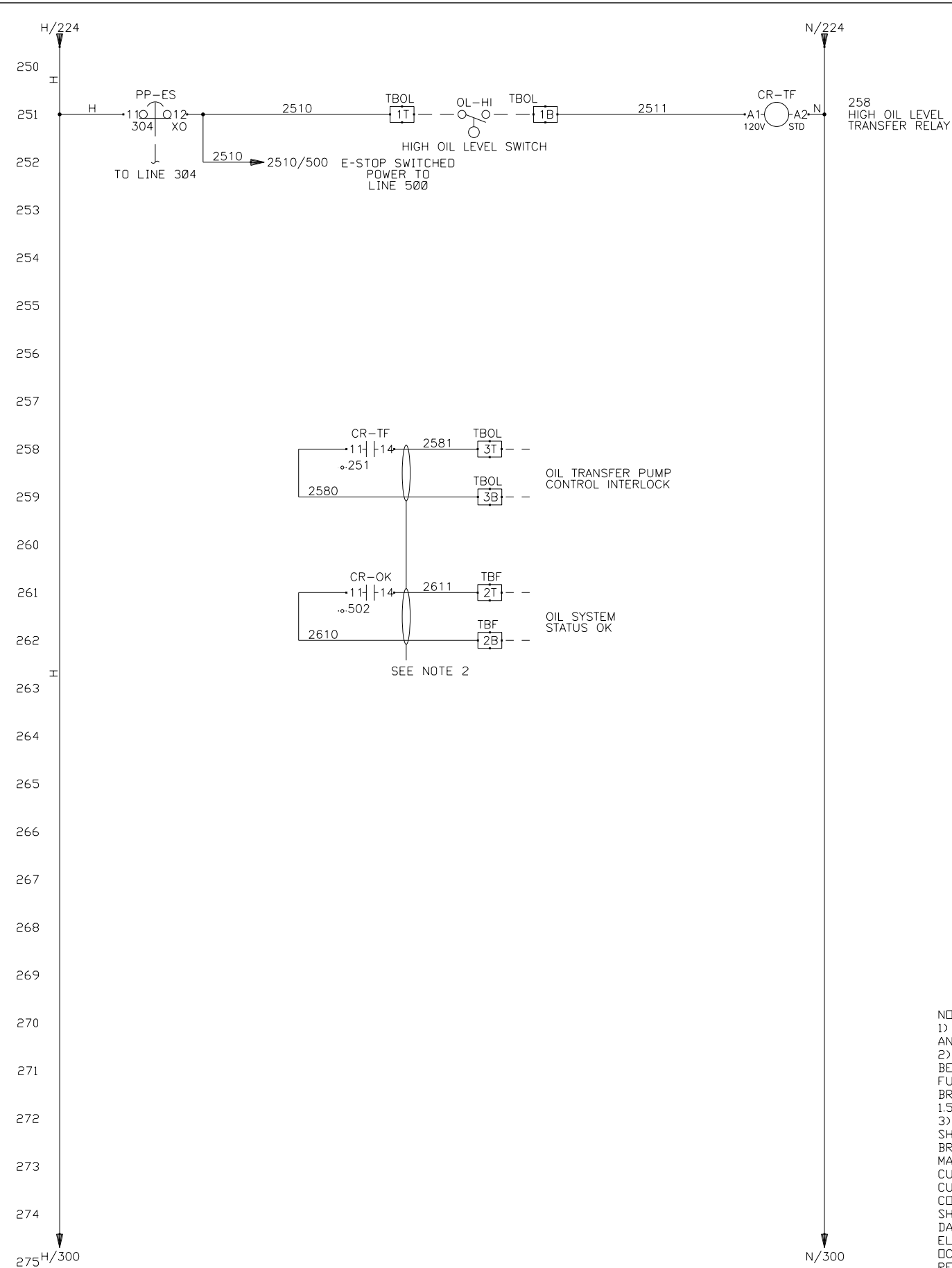
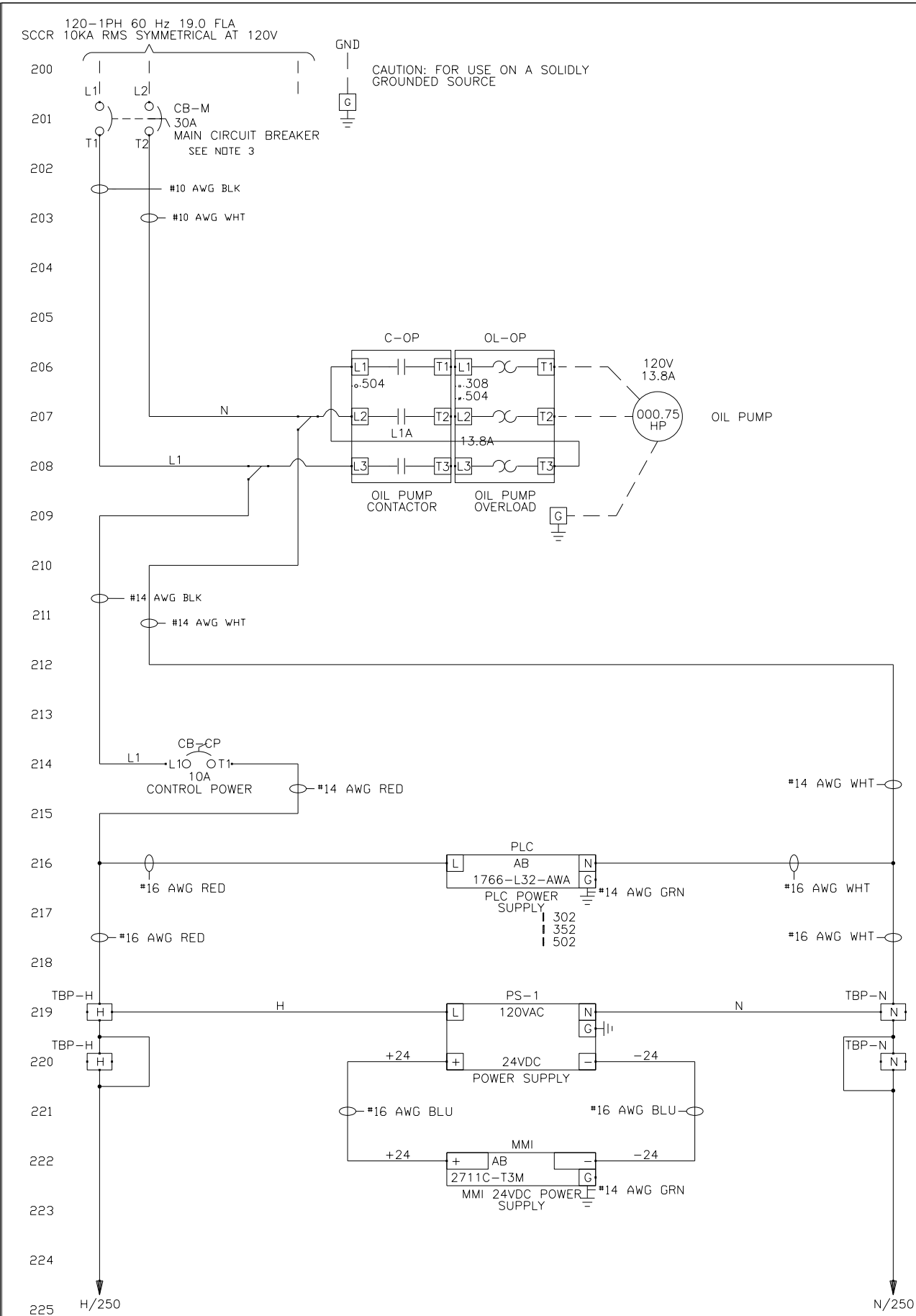


PANEL TO BE UL LISTED (usUL, cUL)
INDUSTRIAL CONTROL PANEL
UL508A FILE NO E109698

REV	DATE	PURPOSE:	BY	CHKD	DESIGNED RN	DATE 12/2011	FOR: YOUR CUSTOMER	ENCLOSURE LAYOUT CENTRAL OIL SYSTEM OILER PANEL
					DRAWN RN	DATE 12/2011	THIS DRAWING, AND ALL REPRESENTED DATA, ARE THE PROPERTY OF THE NAMED COMPANY IN THE TITLE BLOCK. THIS DRAWING SHALL NOT BE REPRODUCED, COPIED, OR DISCLOSED EXCEPT FOR MAINTENANCE PURPOSES BY THE USING CUSTOMER.	DRAWING SET: 2013-058 OILER PANEL
					CHECKED DKS	DATE 12/2011		SHEET: 1 OF 7



YOUR COMPANY
YOUR ADDRESS
YOUR PHONE NO.
YOUR WEBSITE



NOTES:
1) ITEMS IN DASHED LINES PROVIDED AND INSTALLED BY OTHERS
2) #16 YELLOW WIRE, THIS WIRING TO BE PROTECTED BY A 10AMP OR LESS FUSE OR CIRCUIT BREAKER. CONTACT RATINGS: 250VAC 15A, 24VDC 1A
3) WARNING: RISK OF FIRE OR ELECTRIC SHOCK-THE OPENING OF THE BRANCH-CIRCUIT PROTECTIVE DEVICE MAY BE AN INDICATION THAT A FAULT CURRENT HAS BEEN INTERRUPTED. ALL CURRENT-CARRYING PARTS AND OTHER COMPONENTS ROTECTED BY THIS DEVICE SHOULD BE EXAMINED AND REPLACED IF DAMAGED.IF BURNOUT OF A CURRENT ELEMENT OF AN OVERLOAD RELAY OCCURS, THE COMPLETE OVERLOAD RELAY MUST BE REPLACED.

REV	DATE	PURPOSE:	BY	CHKD	DESIGNED RN	DATE 12/2011	FOR: YOUR CUSTOMER	POWER SCHEMATIC CENTRAL OIL SYSTEM OILER PANEL
					DRAWN RN	12/2011	THIS DRAWING, AND ALL REPRESENTED DATA, ARE THE PROPERTY OF THE NAMED COMPANY IN THE TITLE BLOCK. THIS DRAWING SHALL NOT BE REPRODUCED, COPIED, OR DISCLOSED EXCEPT FOR MAINTENANCE PURPOSES BY THE USING CUSTOMER.	DRAWING SET: 2013-058 OILER PANEL
					CHECKED DKS	12/2011		SHEET: 2 OF 7

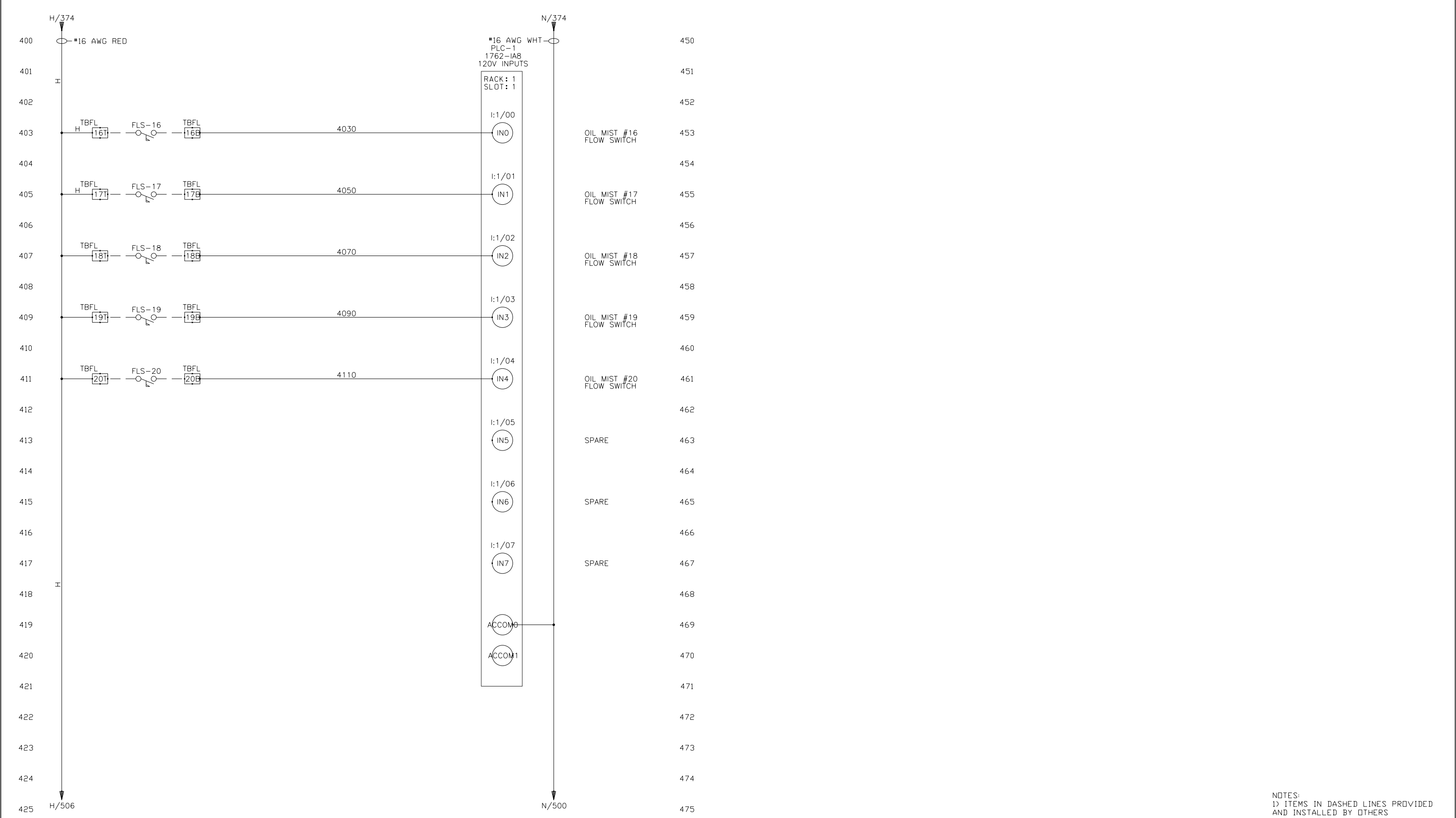


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YOUR WEBSITE



REV	DATE	PURPOSE:	BY	CHKD	DESIGNED RN	DATE 12/2011	FOR: YOUR CUSTOMER	PLC EXPANSION DIGITAL INPUT SCHEMATIC CENTRAL OIL SYSTEM OILER PANEL
					DRAWN RN	DATE 12/2011	THIS DRAWING, AND ALL REPRESENTED DATA, ARE THE PROPERTY OF THE NAMED COMPANY IN THE TITLE BLOCK. THIS DRAWING SHALL NOT BE REPRODUCED, COPIED, OR DISCLOSED EXCEPT FOR MAINTENANCE PURPOSES BY THE USING CUSTOMER.	DRAWING SET: 2013-058 OILER PANEL
					CHECKED DKS	DATE 12/2011		SHEET: 4 OF 7

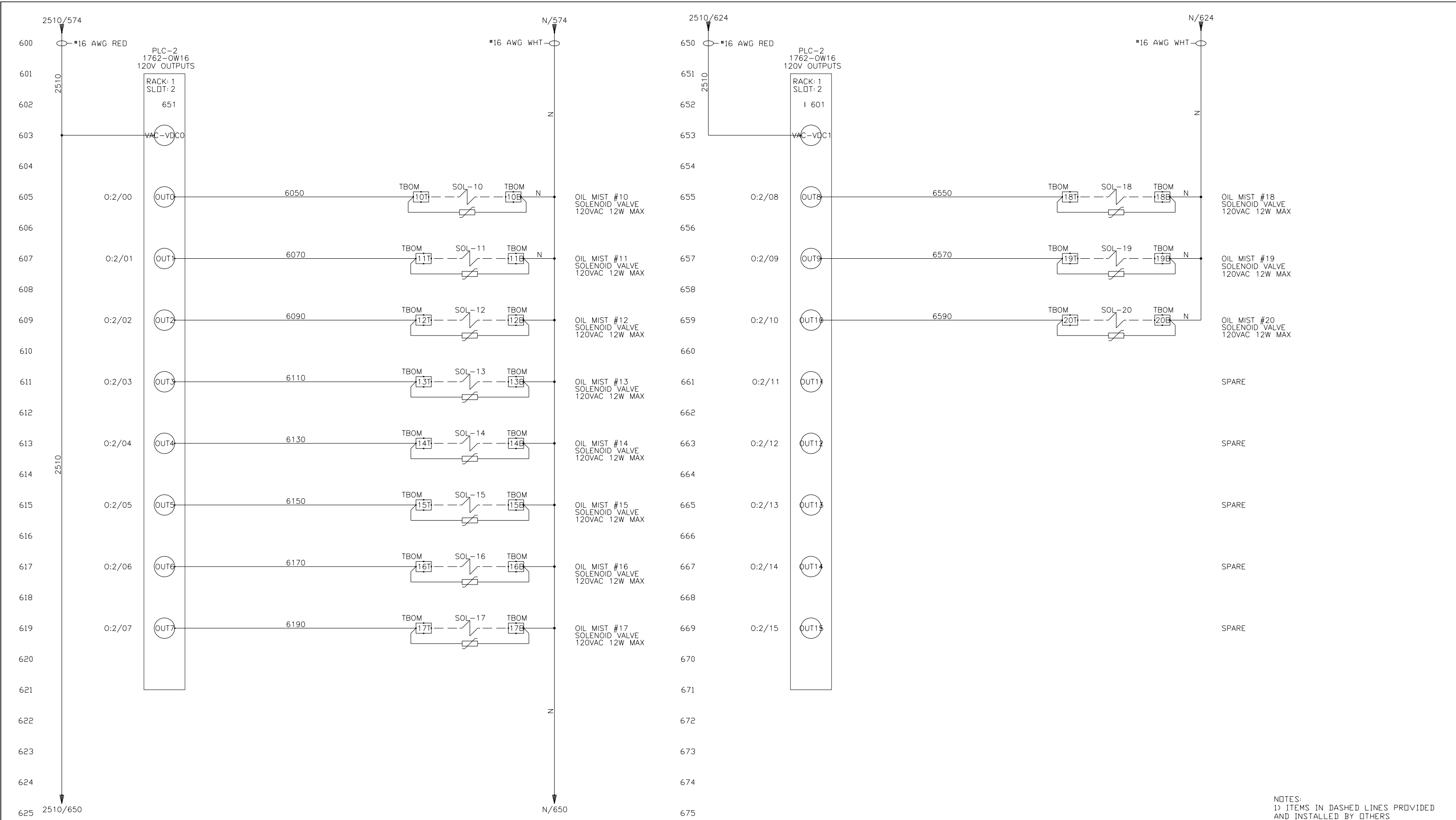


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YOUR WEBSITE

DESIGNED RN	DATE 12/2011	FOR: YOUR CUSTOMER	PLC BASE DIGITAL OUTPUT SCHEMATIC CENTRAL OIL SYSTEM OILER PANEL	
DRAWN RN	DATE 12/2011	THIS DRAWING, AND ALL REPRESENTED DATA, ARE THE PROPERTY OF THE NAMED COMPANY IN THE TITLE BLOCK. THIS DRAWING SHALL NOT BE REPRODUCED, COPIED, OR DISCLOSED EXCEPT FOR MAINTENANCE PURPOSES BY THE USING CUSTOMER.	DRAWING SET: 2013-058 OILER PANEL	
CHECKED DKS	DATE 12/2011		SHEET: 5 OF 7	



NOTES:
1) ITEMS IN DASHED LINES PROVIDED
AND INSTALLED BY OTHERS

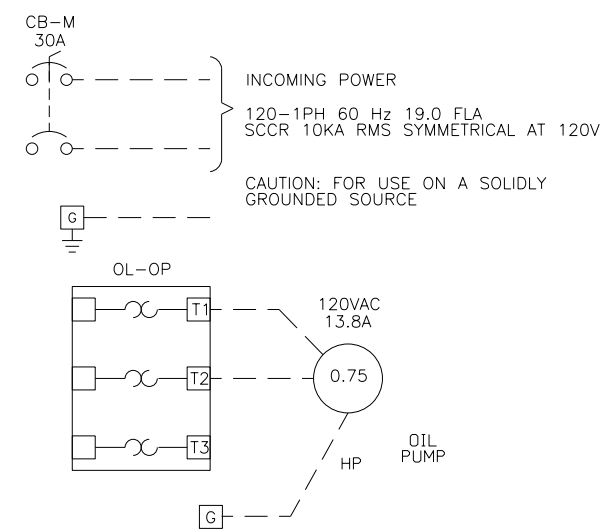
REV	DATE	PURPOSE:	BY	CHKD	DESIGNED RN	DATE 12/2011	FOR: YOUR CUSTOMER	PLC EXPANSION DIGITAL OUPUT SCHEMATIC CENTRAL OIL SYSTEM OILER PANEL
					DRAWN RN	12/2011	THIS DRAWING, AND ALL REPRESENTED DATA, ARE THE PROPERTY OF THE NAMED COMPANY IN THE TITLE BLOCK. THIS DRAWING SHALL NOT BE REPRODUCED, COPIED, OR DISCLOSED EXCEPT FOR MAINTENANCE PURPOSES BY THE USING CUSTOMER.	DRAWING SET: 2013-058 OILER PANEL
					CHECKED DKS	12/2011		SHEET: 6 OF 7



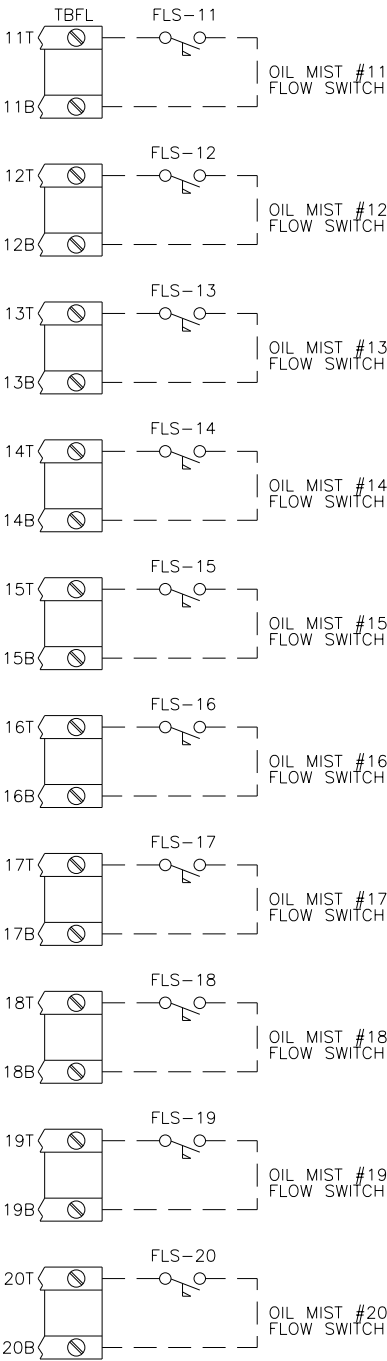
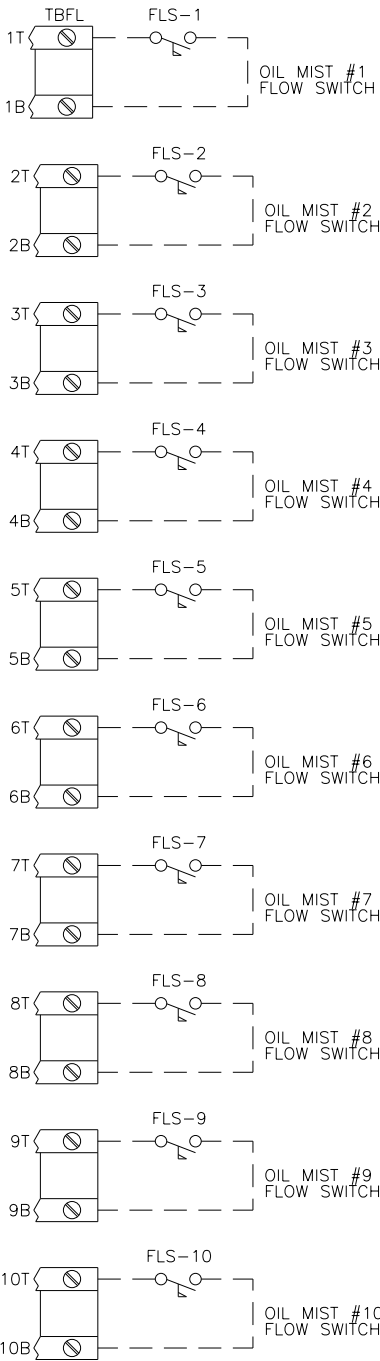
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FIELD CONNECTIONS

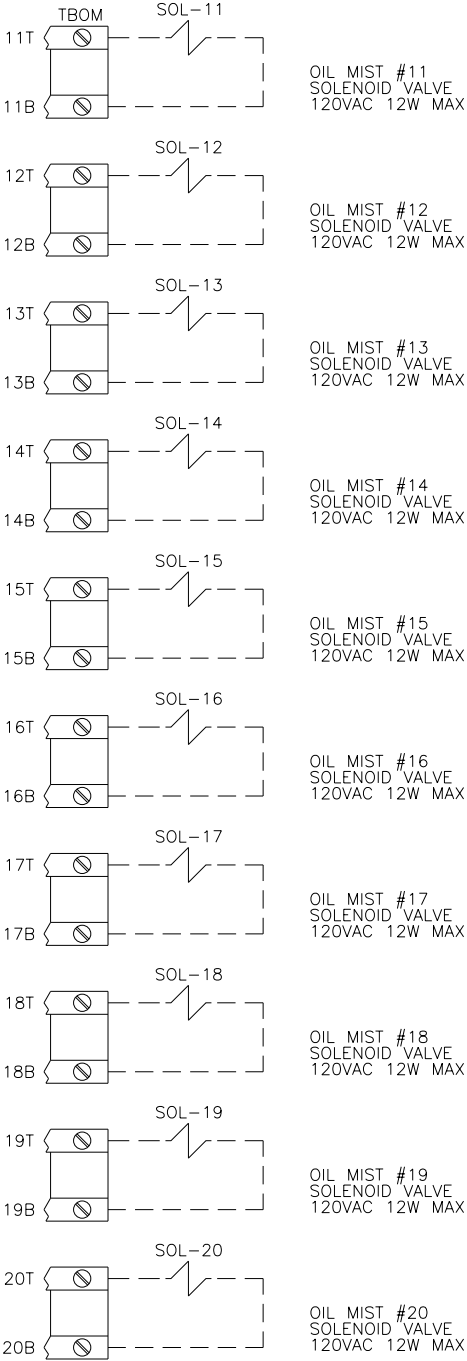
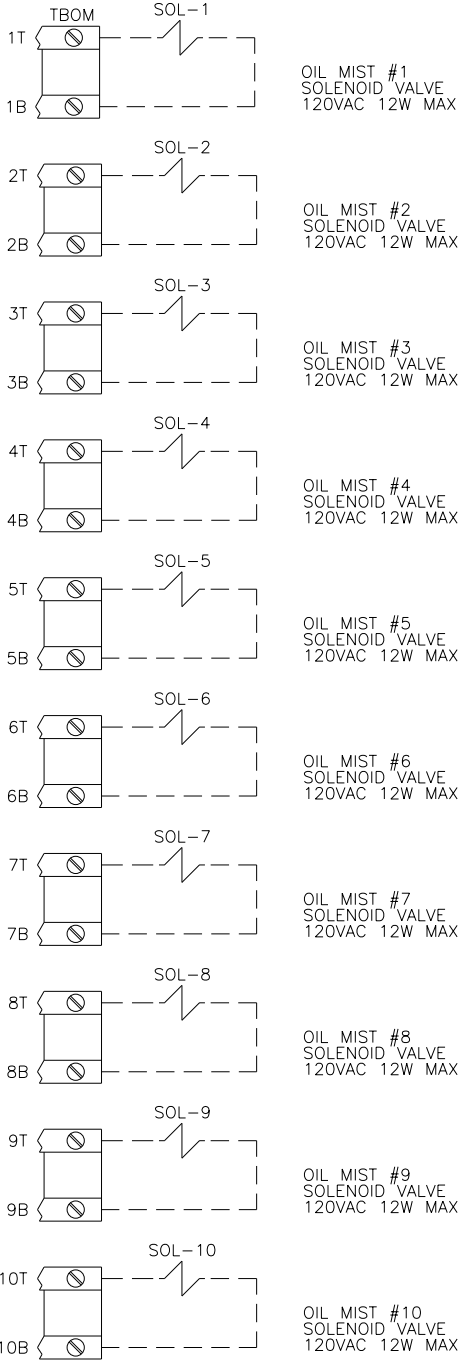
POWER CONNECTIONS



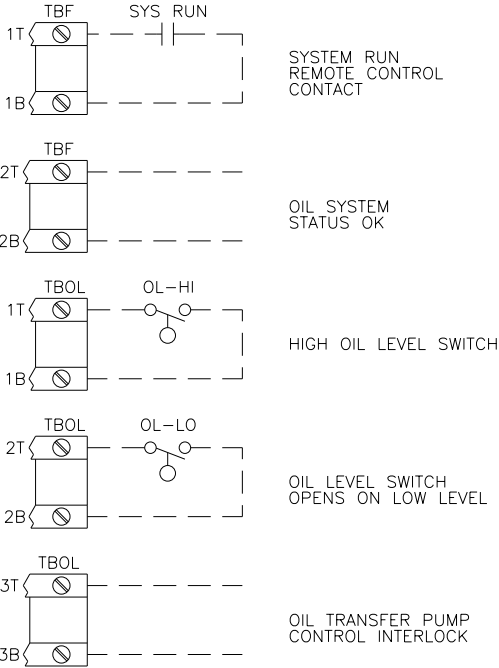
FLOW SWITCH CONNECTIONS



SOLENOID CONNECTIONS



INTERLOCK CONNECTIONS



Your Company

Project Name: Central Oiler

Job No: 2013-058

Bill of Material

Panel Name: Oiler Panel				Typical of	1	Panel(s)
Device ID	Qty	Mfg	Part No	Description		
ENCL-1	1	HO	C-SD-24248	ENCL,NEMA 4,24X24X08		
BP-1	1	HO	C-P2424	BACKPANEL,24X24		
MNT-1	1	HO	C-MFK	MOUNTING KIT,CONCEPT,(4) B-STEEL/ZINC FEET		
CB-M	1	SD	FAL22030	CB,F FRAME,2P,240V,10KAIC,030A		
CBO-M	1	SD	9421-LF1	CB OPER,MECH,THRU-DR,F FRME		
CBO-M	1	SD	9421-LH43	CB OPER,HNDL,THRU-DR,NEMA 4,3 IN,F/G/H/J/K FRME		
CBO-M	1	SD	9421-LS12	CB OPER,SHAFT,LONG,THRU-DR,F/K FRME		
G-1, G-OP	2	BURNDY	KA2U	LUG,ONE HOLE,SCREW COMPRESSION,AL,115A,14-2		
GB-1	1	SD	PK23GTA	GROUND BAR KIT,ALUM,23 CKTS		
CB-CP	1	SD	QOU110	CB,1P,240V,10KAIC,010A,DIN MNT		
PS-24	1	MW	MDR-20-24	PWR SUPP,120V TO 024VDC,DIN MNT,01.0A,CLASS 2		
C-OP	1	SD	LC1-D18-G7	CONTACTOR,IEC,D LINE,600V,018A,1NO,1NC,120V		
OL-OP	1	SD	LRD-21	OL RELAY,IEC,D LINE,012-18A,1NO,1NC,D18-D32		
CR-SI, CR-T	2	AB	700-HLT1-U1	RELAY,1PDT,SLIM LINE,240V,6A,120V,DIN MNT		
PP-ES	1	SD	ZBE-1025	CONTACT,1 NC,SPRING CLAMP		
PP-ES	1	SD	ZB5-AZ009	MNTG COLLAR ONLY		
PP-ES	1	SD	ZB5-AS54	OPER,PUSH-PULL,TWIST REL,40MM,RED		
PA-ES	1	SD	ZBE-1015	CONTACT,1 NO,SPRING CLAMP		
AL-1	1	AB	855PS-B10LE-422	ALARM,LIGHT,STRB,NEMA 4X,065mm,RED,120V		
PLC-1	1	AB	1766-L32-AWA	MICROLOGIX 1400,120V,20 120V IN,12 REL OUT,SERIAL/,ENET		
PLC-S1	1	AB	1762-IA8	MICROLOGIX 1200,EXP I/O,INPUT,DIG,120V,08 PT		
PLC-S2	1	AB	1762-OW16	MICROLOGIX 1200,EXP I/O,OUTPUT,DIG,RELAY,16 PT		
OI-1	1	AB	2711C-T3M	PANELVIEW C,03IN,MONO,TOUCH,NEMA 4X,RS232/485,USB PROG,24VDC		
RF-1	1	AB	1761-CBLPM02	CABLE,MICROLOGIX,MINI DIN TO 9 PIN D,6.5 FT		
TB-	2	AB	199-DR1	ACC,DIN RAIL,3FT		
TB-	15	AB	1492-EAJ35	ACC,END ANCHOR		
TB-	2	AB	1492-J4	J 1 TIER,TERMINAL,0.24 IN		
TB-	6	ACI	1492-M6X12-ACI	1 TIER,MARKER,BLANK,FOR 1492-J4		
TB-	1	AB	1492-EBJ3	J 1 TIER,END BARRIER,FOR J3/J4/J10		
TB-	1	AB	1492-JG4	J 1 TIER,TERMINAL,0.24 IN,GROUND		

Your Company

Project Name: Central Oiler

Job No: 2013-058

Bill of Material

TB-	45	AB	1492-JD3	J 2 TIER,TERMINAL,0.20 IN
TB-	180	ACI	1492-M5X8-ACI	2 TIER,MARKER,BLANK,FOR 1492-JD3
TB-	4	AB	1492-EBJD3	J 2 TIER,END BARRIER,FOR JD3
TB-	5	AB	1492-CJJ5-10	J ACC,JUMPER,CTR,10 POLE,FOR J3/JD3
TB-	2	AB	1492-PPJD3	J 2 TIER,PARTITION PLATE,FOR JD3