DK CONTROLS, LLC.
3680 W ROYAL LN., SUITE 175
IRVING, TX 75063
972.893.6939

ENGINEERING SUBMITTAL

FILE

JOB NAME: SIGNAL RIDGE LIFT STATION UPGRADE
QUOTE #: 062416-02
DATE: 8/18/2016
CUSTOMER: FC CUNY
CONTACT: CAMERON SLOWN
REV: A
ENGINEER: JACOB MOCK

POWER

[X] 480V 3-PHASE
[ ] 120/240 HI LEG DELTA 3-PHASE
[ ] 208Y/120V 3-PHASE
[ ] 120/240V 1-PHASE
[ ] 120V

CONTROL SYSTEM

TYPE OF CONTROL PANEL: SOFT START
NUMBER OF MOTORS: 3
MOTOR HP: 100/125/125
CONTROL TYPE: PLC

ENCLOSURE

MATERIAL: 316SS
NEMA RATING: 4X
SIZE: 74X72X18
MODIFICATIONS: DEAD FRONT, PADLOCKABLE
MOUNTING STYLE: FLOOR

NOTES:

- PANEL WILL BE UL 508 LISTED.
- KIMARK TO SUPPLY SCADA SYSTEM

DK CONTROLS, LLC.
3680 W ROYAL LN., SUITE 175
IRVING, TX 75063
972.893.6939

BILL OF MATERIALS

8/1/2016

QUOTE NO.
062416-02

JOB NAME
SIGNAL RIDGE LIFT STATION UPGRADE

CUSTOMER
FC CUNY

ENGINEER
JACOB MOCK

QTY	DESCRIPTION	MFG	PART NO.	P#
1	ENCLOSURE, 74X72X18, NEMA 4X, 316SS, FLOOR MOUNT	HOFF	A74H7218SS6LP3PT	1
1	BACKPLATE, 68X68	HOFF	A72P72	2
2	DEAD FRONT, 68X31.88 PANELS	HOFF	A72SP36F3	3
1	ENCLOSURE LIGHT, 120V, 28”, W/ SWITCH	HOFF	LF120V28	4
2	FLOURESCENT BULB	HOFF	F14T5	5
1	TOGGLE SWITCH FOR LIGHT, IVORY, 15A	HUBBELL	HBL1201I	6
1	FACEPLATE FOR LIGHT SWITCH, IVORY	HUBBELL	NP1I	7
1	THERMOSTAT, NO	HOFF	ATEMNO	8
1	PANEL HEATER, 120V, 400 WATT, W/ THERMOSTAT	HOFF	DAH4001B	9
3	SOFT START, 125HP @ 480V	SQD	ATS48C17Y	10
3	CONTACTOR, 125HP @ 480V, AC-3 RATED 185A, 120V COIL	SQD	LC1F185G7	11
3	OVERLOAD, 132-220A	SQD	LR9F5371	12
1	MOLDED CASE CIRCUIT BREAKER, 500A, M-FRAME, 3-POLE	SQD	MJL36500	13
3	MOLDED CASE CIRCUIT BREAKER, 250A, L-FRAME, 3-POLE	SQD	LAL36250	14
2	MULTITAP LUGS FOR M-FRAME BREAKER	SQD	AL800M23K	15
1	PHASE MONITOR RELAY, 480V, 11-PIN	TIMEMARK	A258B	16
1	RELAY BASE, 11-PIN	SQD	RUZC3M	17

DK CONTROLS, LLC.
3680 W ROYAL LN., SUITE 175
IRVING, TX 75063
972.893.6939

1	CIRCUIT BREAKER, 20A, 2-POLE, C-CURVE	EATON	FAZ-C20/2-NA	18
1	CIRCUIT BREAKER, 20A, 1-POLE, C-CURVE	EATON	FAZ-C20/1-NA	19
3	CIRCUIT BREAKER, 15A, 1-POLE, C-CURVE	EATON	FAZ-C15/1-NA	20
1	UPS, 120V, 1500W	APC	679-SMT1500	21
1	SURGE PROTECTION DEVICE, 120V	PHOENIX	2905333	22
1	CONTROL TRANSFORMER, 1000VA, 480-120V	SQD	9070TF1000D1	23
2	FUSE, TIME DELAY, CLASS CC, 6AMP	BUSS	FNQR6	24
1	FUSE, TIME DELAY, MIDGET, 20AMP	BUSS	FNM20	25
2	FUSE, TIME DELAY, MIDGET, 2.5AMP	BUSS	FNM2-1/2	26
3	SELECTOR SWITCH, 3-POSITION, MAINTAINED, IOI	SQD	9001SKS43B	27
1	SELECTOR SWITCH, 3-POSITION, MAINTAINED, III	SQD	9001SKS42B	28
1	SELECTOR SWITCH, 4-POSITION, MAINTAINED	SQD	9001SKS88B	29
9	CONTACT BLOCK, 1NO	SQD	9001KA2	30
2	CONTACT BLOCK, 1NO/1NC	SQD	9001KA1	31
1	PUSHBUTTON, MOMENTARY, BLACK	SQD	9001SKR1B	32
3	PILOT LIGHT, 120V, RED, PUSH-TO-TEST	SQD	9001SKT1R31	33
8	PILOT LIGHT, 120V, AMBER, PUSH-TO-TEST	SQD	9001SKT1A31	34
3	ELAPSED TIME METER	ENM	T50B2	35
3	ETM GASKET	ENM	B20017	36
1	ALARM BEACON, PANEL MOUNT, RED, 120V	FEDERAL SIGNAL	LP3E-120R	37
1	ALARM HORN, PANEL MOUNT, 120V	FEDERAL SIGNAL	350-120-30	38
2	DUPLEX RECEPTACLE, 20AMP, 120V	AB	1492-REC20G	39
3*	PUMP MONITORING RELAY, 120V	FLYGT	MINICAS II	40
38	RELAY, 2-POLE, 120V	IDEC	RJ2S-CL-A120	41
4	RELAY, 2-POLE, 24VDC	IDEC	RJ2S-CL-D24	42
42	RELAY BASE, BLADE TYPE, 2-POLE	IDEC	SJIS-05B	43
3	ON DELAY TIMER, 8-PIN	IDEC	GE1A-B10MA110	44
3	RELAY BASE, 8-PIN	SQD	8501NR51	45
1	POWER SUPPLY, 120V INPUT-24VDC OUTPUT, 2.5AMP	SOLA	SDN-2.5-24-100P	46
3	PDB, (1)500-4:(2)350-6, 3-POLE	MERSEN	69063	47
3	AUXILIARY CONTACT, 2NO/2NC	SQD	LADN22	48
3	FUSE, 1/4AMP, CLASS CC	BUSS	FNQR1/4	49
2	FUSE BLOCK, 1-POLE, MIDGET	BUSS	BM603-1PQ	50
1	FUSE BLOCK, 3-POLE, CLASS CC	BUSS	BC603-3PQ	51
100	TERMINAL BLOCK	PHOENIX	3209549	52

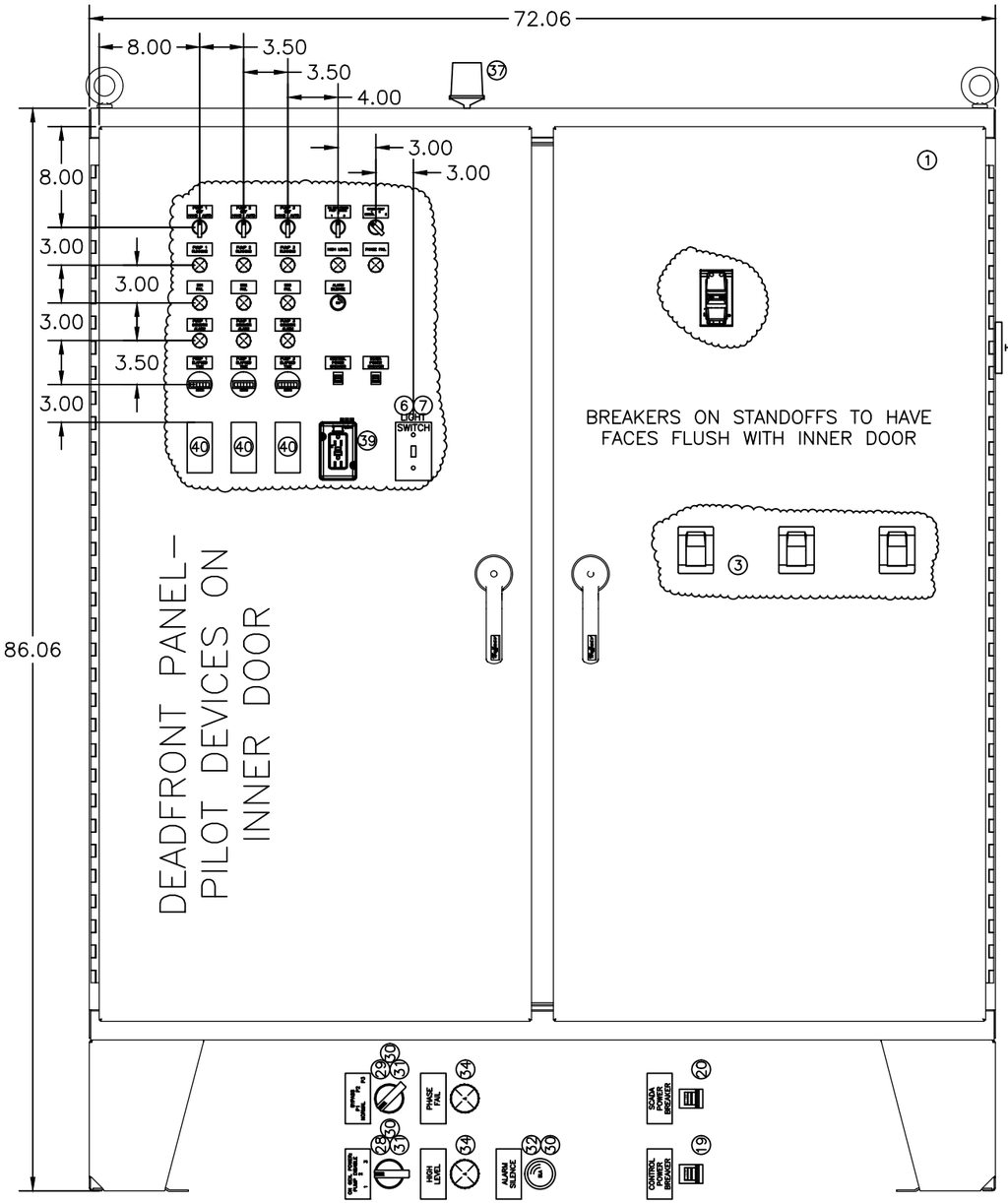
DK CONTROLS, LLC.
3680 W ROYAL LN., SUITE 175
IRVING, TX 75063
972.893.6939

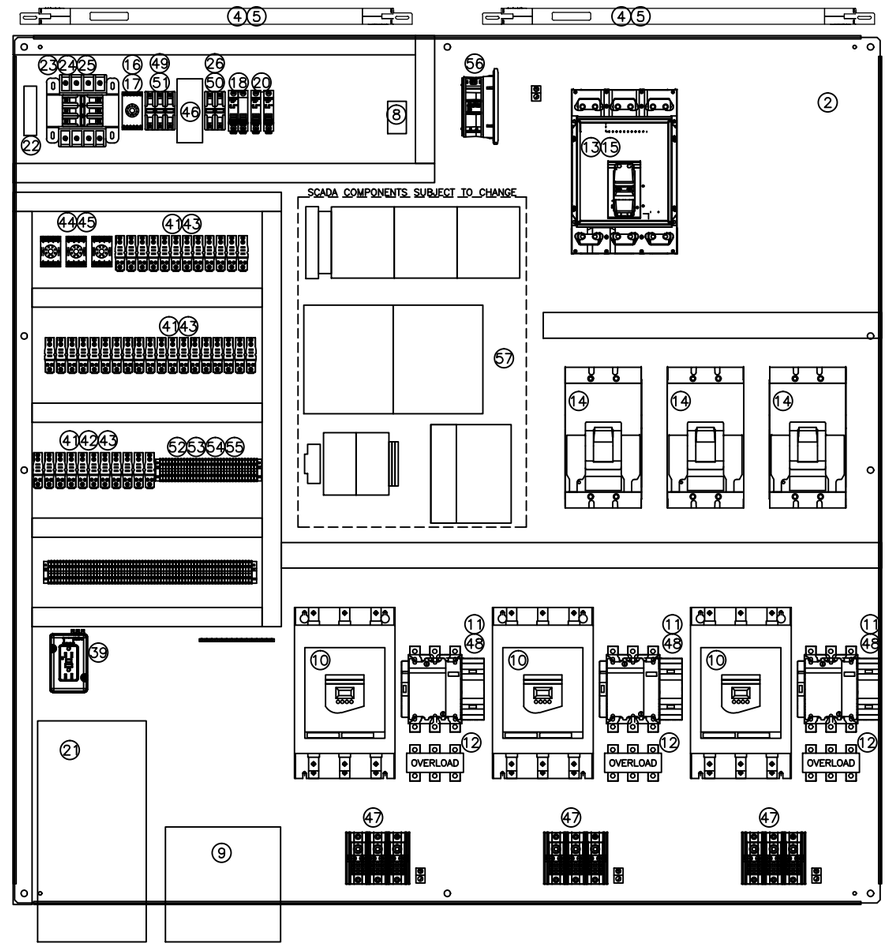
2	END PLATE	PHOENIX	3030488	53
4	END ANCHOR	PHOENIX	3022276	54
2	JUMPER, 10-POLE	PHOENIX	3030213	55
1	CIRCULATION FAN	SQD	SCE-N12FA44	56
1**	SCADA PACKAGE	KIMARK		57

Special Notes:

*2/3 relays existing, supplied by customer

**Supplied as full package by Kimark





REVISIONS			
REV	DESCRIPTION	DATE	BY

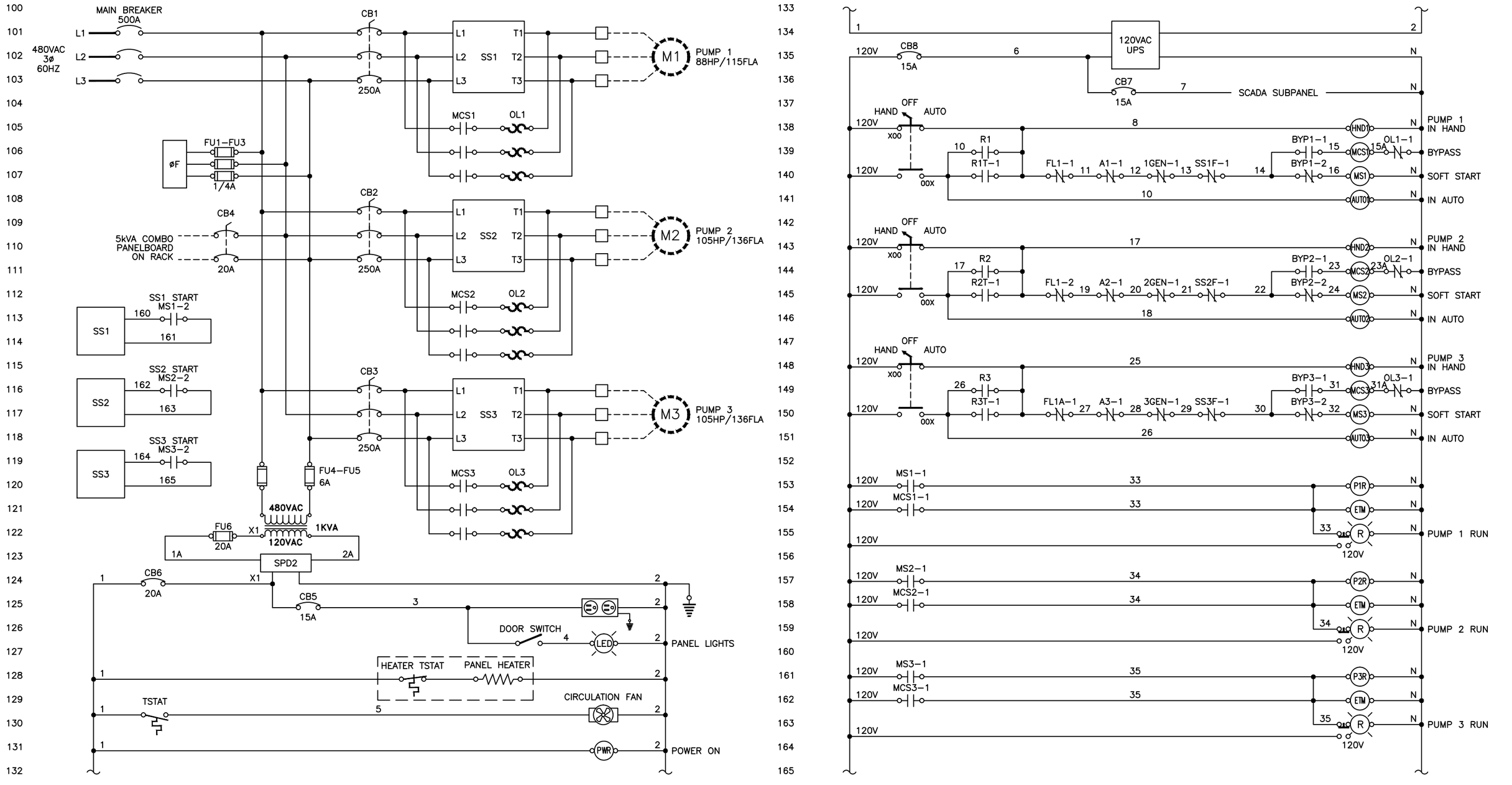
APPROVED:		DATE	
CHECKED:		DATE	
BY:	JC	DATE	0816
ASSEMBLY #:		QTY:	
SCALE:	NA		

DK CONTROLS, LLC
3680 W. Royal Ln, #175
Irving, TX 75063
Phone 972.893.6939
Fax 972.893.6949

DK CONTROLS, LLC

TITLE: SIGNAL RIDGE LIFT STATION
PANEL LAYOUT

CUSTOMER	DWG. NO.:	REV.
FC CUNY	25585-L	A



NOTES:

1) ALL WIRING CONNECTED TO THIS CABINET MUST BE RATED AT LEAST 60° AND BE COPPER.
2)
3)
4)

REVISIONS			
REV	DESCRIPTION	DATE	BY

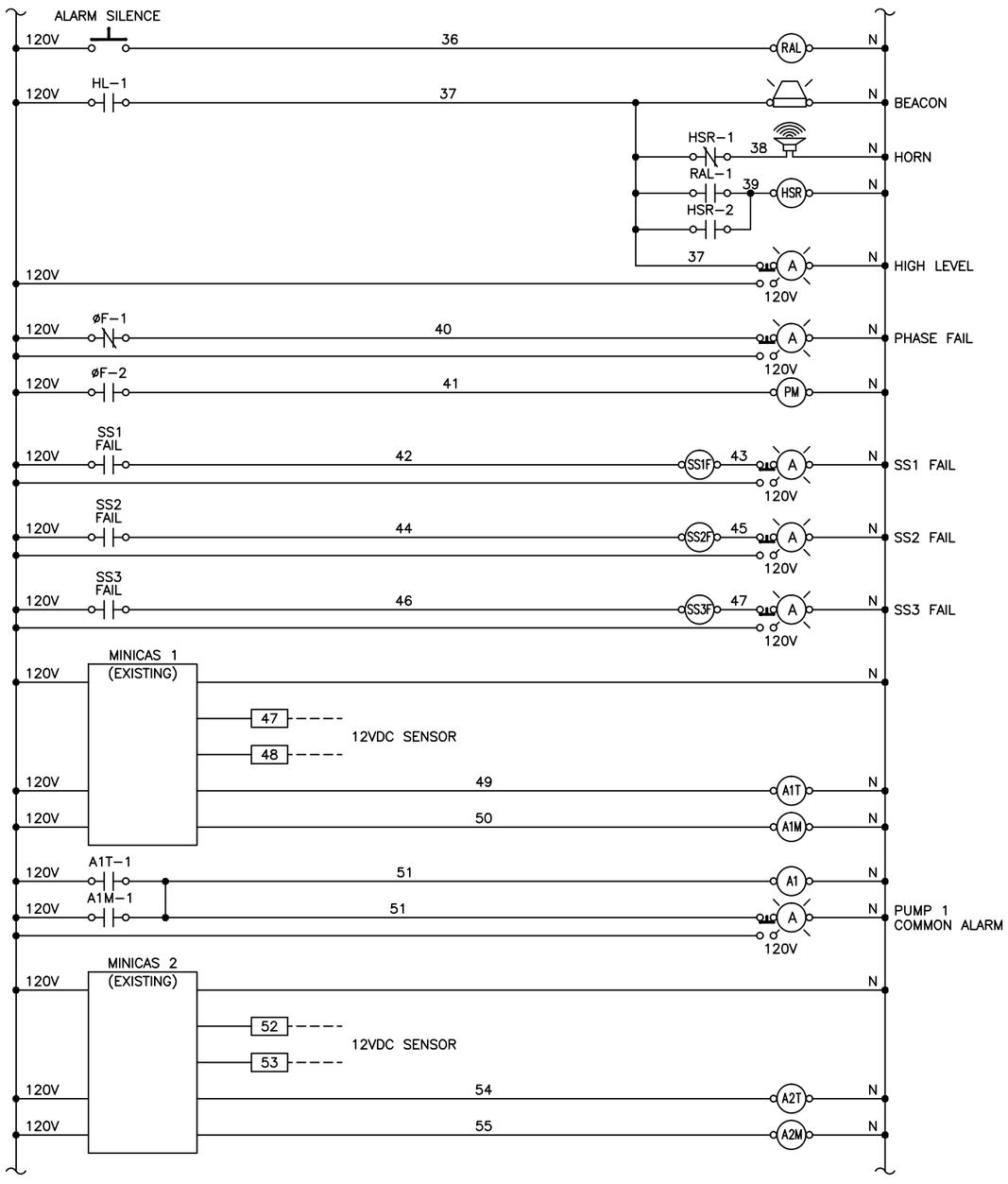
APPROVED:	DATE
CHECKED:	DATE
BY: JC	DATE 0816
ASSEMBLY #:	QTY:
SCALE: NA	

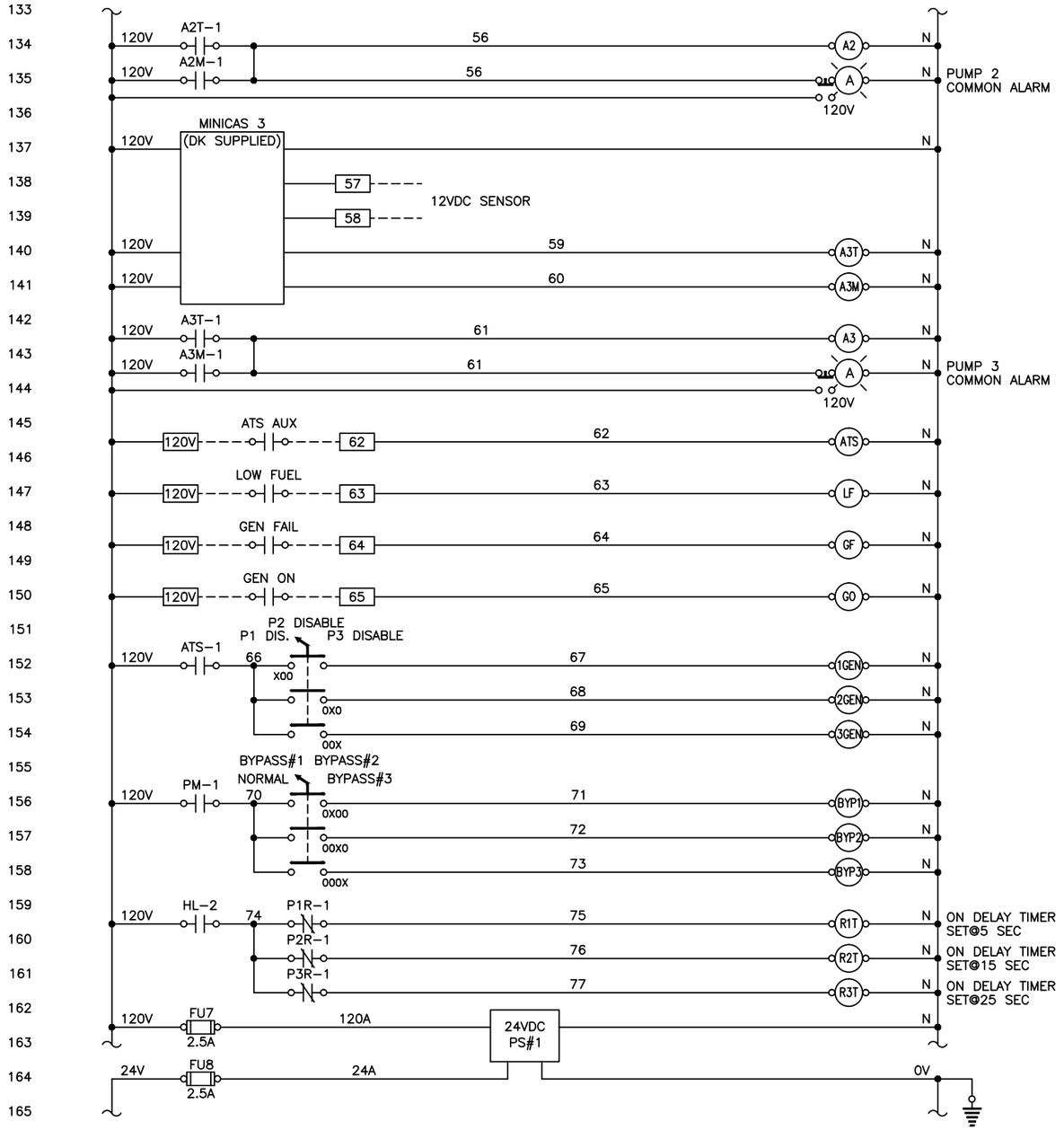
DK CONTROLS, LLC
3680 W. Royal Ln, #175
Irving, TX 75063
Phone 972.893.6939
Fax 972.893.6949

DK CONTROLS, LLC

TITLE: SIGNAL RIDGE LIFT STATION
WIRING DIAGRAM

CUSTOMER	DWG. NO.:	REV.
FC CUNY	25585–1	A





REVISIONS			
REV	DESCRIPTION	DATE	BY

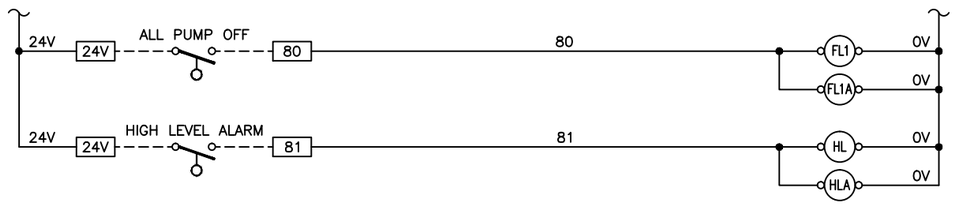
APPROVED:	DATE
CHECKED:	DATE
BY: JC	DATE 0816
ASSEMBLY #:	QTY:
SCALE: NA	

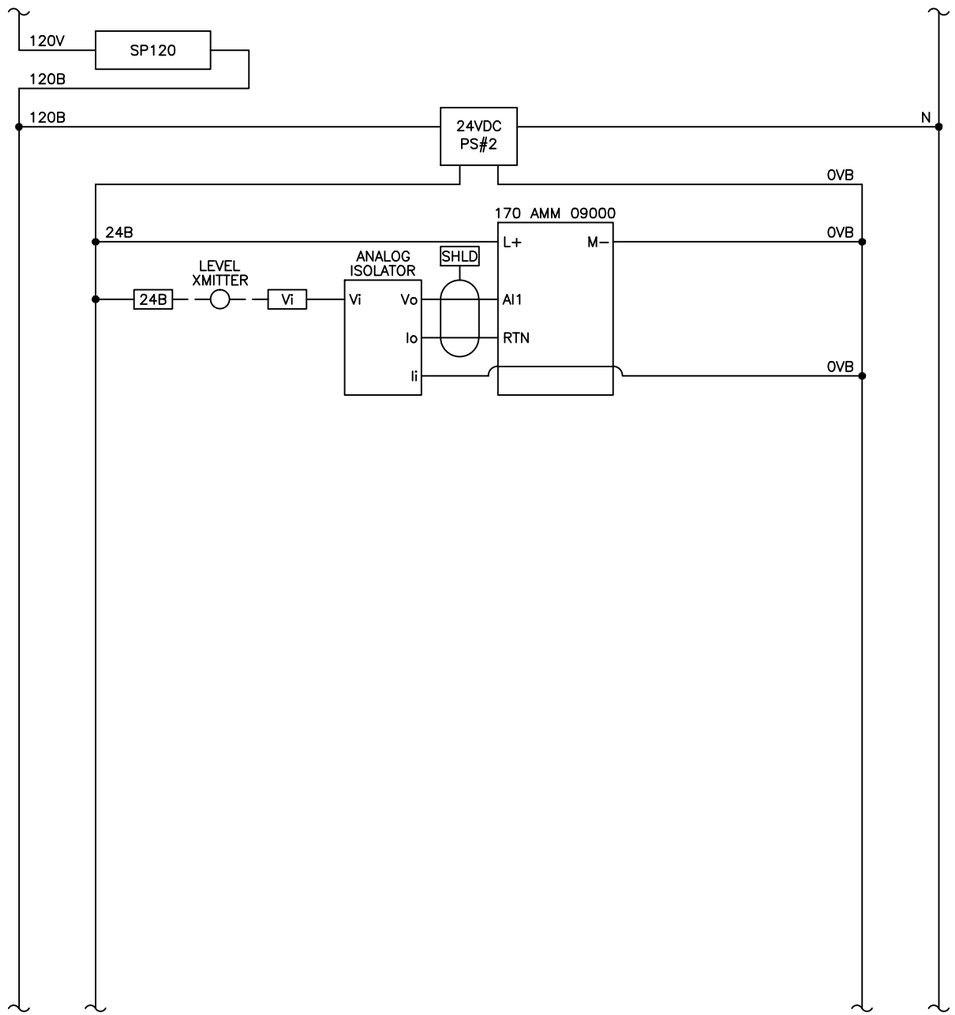
DK CONTROLS, LLC
3680 W. Royal Ln, #175
Irving, TX 75063
Phone 972.893.6939
Fax 972.893.6949

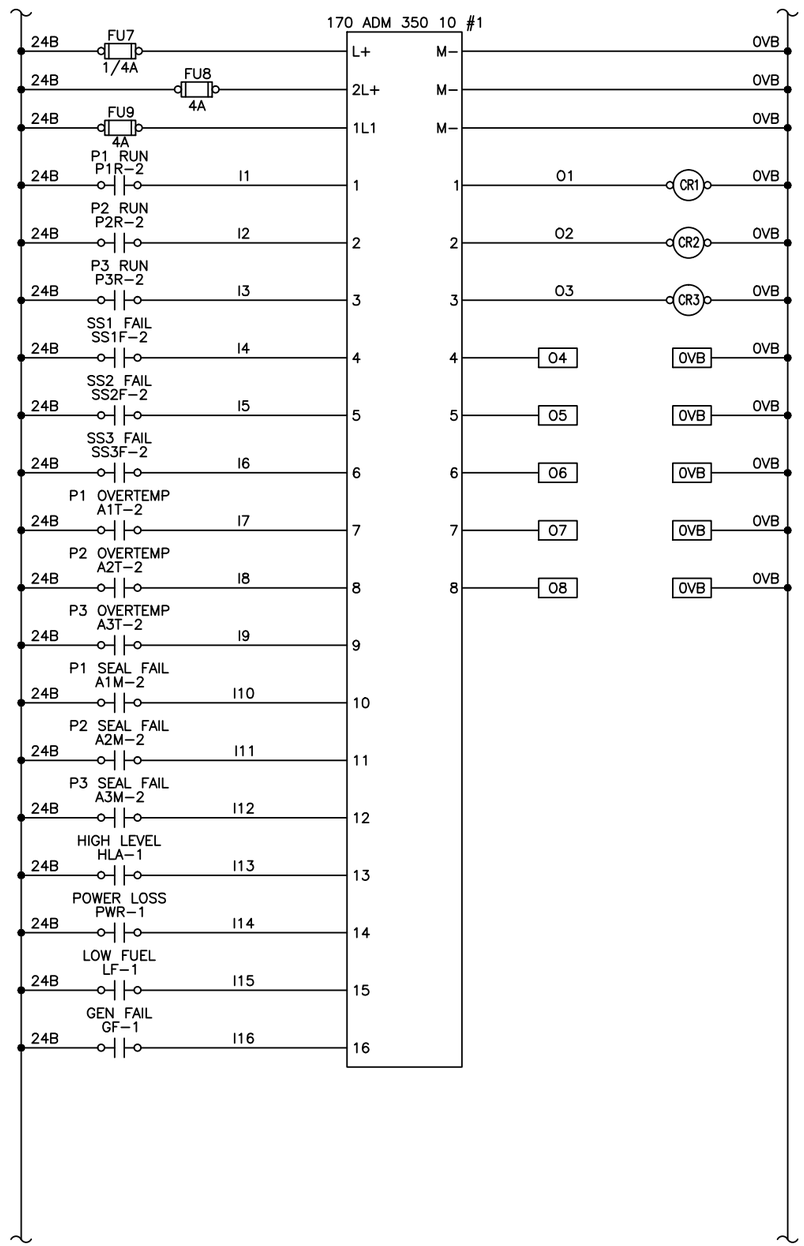
DK CONTROLS, LLC

TITLE:
SIGNAL RIDGE LIFT STATION
WIRING DIAGRAM

CUSTOMER	DWG. NO.:	REV.
FC CUNY	25585-2	A







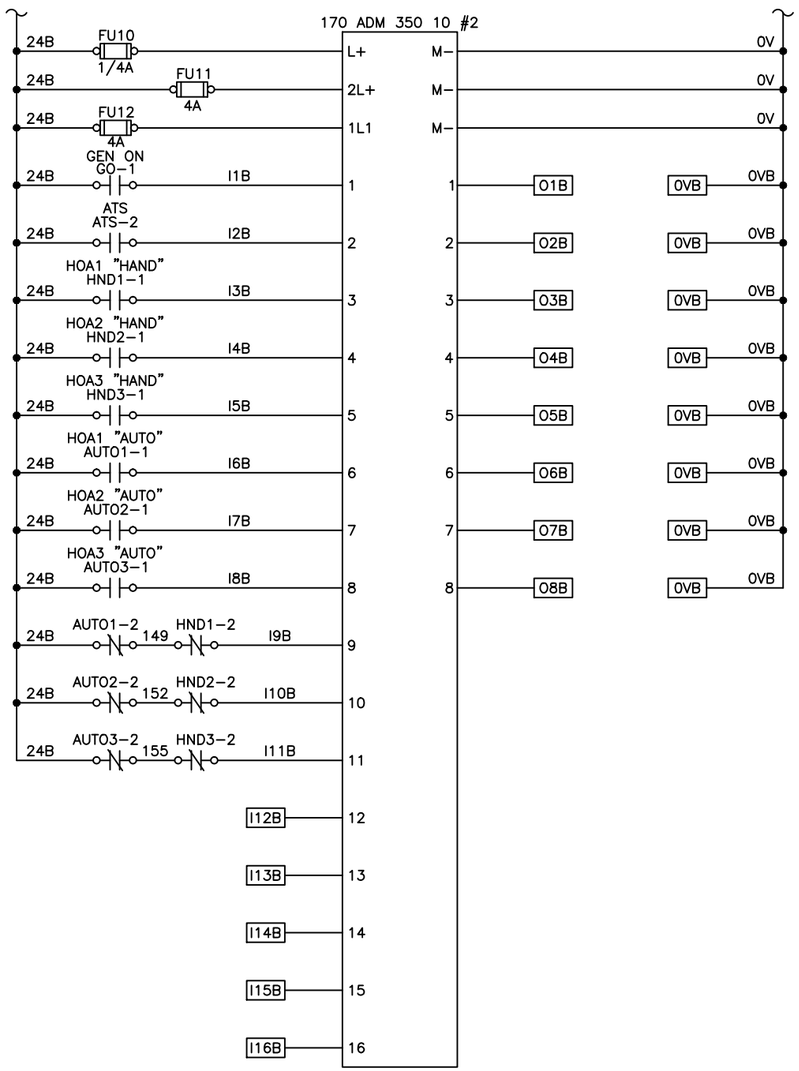
REVISIONS			
REV	DESCRIPTION	DATE	BY

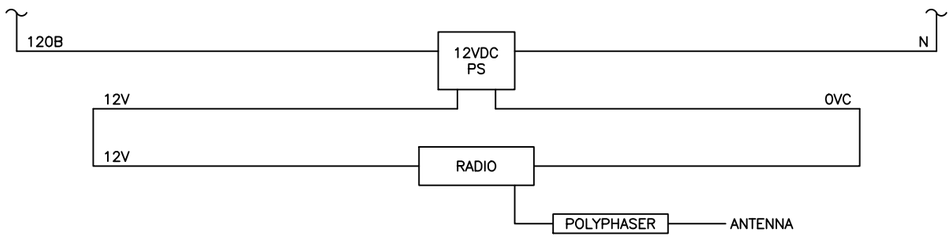
APPROVED:	DATE
CHECKED:	DATE
BY: JC	DATE 0816
ASSEMBLY #:	QTY:
SCALE: NA	

DK CONTROLS, LLC
3680 W. Royal Ln, #175
Irving, TX 75063
Phone 972.893.6939
Fax 972.893.6949

TITLE: SIGNAL RIDGE LIFT STATION
WIRING DIAGRAM

CUSTOMER	DWG. NO.:	REV.
FC CUNY	25585–3	A





REVISIONS			
REV	DESCRIPTION	DATE	BY

APPROVED:		DATE	
CHECKED:		DATE	
BY:	JC	DATE	0816
ASSEMBLY #:		QTY:	
SCALE:	NA		

DK CONTROLS, LLC
3680 W. Royal Ln, #175
Irving, TX 75063
Phone 972.893.6939
Fax 972.893.6949

DK CONTROLS, LLC

TITLE: SIGNAL RIDGE LIFT STATION WIRING DIAGRAM

CUSTOMER	DWG. NO.:	REV.
FC CUNY	25585−4	A

THE REYNOLDS COMPANY
ELECTRICAL SUPPLY

Hoffman A74H7218SS6LP3PT

Hoffman A74H7218SS6LP3PT Brushed 316L Stainless Steel 2-Door Enclosure With 3-Point Latches, 74.06 IN H x 72.06 IN W x 18.06 IN D

MPN: A74H7218SS6LP3PT

TRC Part#: HOFFA74H7218SS6LP3PT

undefined

Min Order Quantity: 1

Quantity Interval: 1

DESCRIPTIONS

Enclosure With 3-Point Latches, Type: 2-Door, Size: 74.06 IN Height x 72.06 IN Width x 18.06 IN Depth, Material: 12 GA 316L Stainless Steel, Finish: Brushed, NEMA Rating: NEMA 3, 3R, 4, 4X, 12, 13, Enclosure: IP66, Mounting: Floor Stand, Construction: Welded, Panel Size: 68 IN Height X 68 IN Width

SPECIFICATIONS

Item Name: Enclosure With 3-Point Latches

Type: 2-Door

Size: 74.06 IN Height x 72.06 IN Width x 18.06 IN Depth

Material: 12 GA 316L Stainless Steel

Finish: Brushed

NEMA Rating: NEMA 3, 3R, 4, 4X, 12, 13

Enclosure: IP66

Mounting: Floor Stand

Construction: Welded

Panel Size: 68 IN Height X 68 IN Width

FEATURES

Removable centerpost for easy panel installation

Collar studs provided for mounting optional panels

Panel supports included

Heavy-duty lifting eyes are Type 316L stainless steel

Heavy-duty 3-point latching mechanism operated by Type 316L stainless steel POWERGLIDE padlocking handles

Body flange trough collar excludes liquids and contaminants

Heavy-duty stainless steel continuous hinges support each door

Bonding provision on doors, grounding studs on body

THE REYNOLDS COMPANY
ELECTRICAL SUPPLY

Hoffman A72P72

Hoffman A72P72 White Polyester Powder Coated 10 GA Steel Enclosure Panel, 68 IN H X 68 IN W X 0.88 IN T

MPN: A72P72

TRC Part#: HOFFA72P72

UPC: 78351026300

Min Order Quantity: 1

Quantity Interval: 1

DESCRIPTIONS

Enclosure Panel, Type: PNLFS Bulletin, Size: 68 IN Height X 68 IN Width X 0.88 IN Thickness, Material: 10 GA Steel, Color: White, Finish: Polyester Powder Coated, Shape: Square, Edge Flanges: 4, Number Of Holes: 10, Application: For 72 IN height X 72 IN width enclosure

SPECIFICATIONS

Item Name: Enclosure Panel

Type: PNLFS Bulletin

Size: 68 IN Height X 68 IN Width X 0.88 IN Thickness

Material: 10 GA Steel

Color: White

Finish: Polyester Powder Coated

Shape: Square

Number Of Holes: 10

Edge Flanges: 4

FEATURES

10 number of holes

Edge flanges: 4

Steel panels are 10 GA, finished with white polyester powder paint or a conductive, corrosion-resistant coating

Larger panels have flanges on two or four sides

Panel mounting hardware is furnished with all enclosures which accept these panels

Applications: For 72 IN height X 72 IN width enclosure

DOCUMENTS

Warranty

Spec Sheet

THE REYNOLDS COMPANY
ELECTRICAL SUPPLY

Hoffman A72SP36F3

Hoffman A72SP36F3 White Polyester Powder Coated 10 GA Steel Full Panel, 60 IN H X 38.81 IN W

MPN: A72SP36F3

TRC Part#: HOFFA72SP36F3

UPC: 78351021360

Min Order Quantity: 1

Quantity Interval: 1

DESCRIPTIONS

Full Panel, Type: PNL30 Bulletin, Swing-Out, Size: 60 IN Height X 38.81 IN Width, Material: 10 GA Steel, Color: White, Finish: Polyester Powder Coated, Shape: Rectangular, Application: For 72 X 36 IN enclosures with mounting channel

SPECIFICATIONS

Item Name: Full Panel

Type: PNL30 Bulletin, Swing-Out

Size: 60 IN Height X 38.81 IN Width

Material: 10 GA Steel

Color: White

Finish: Polyester Powder Coated

Shape: Rectangular

FEATURES

3-point latching system with heavy duty handle

Padlock provision in handle

Open bottom with pre-punched mounting hole flange

Drip edge overhang on top

Louvered overhang with a closure plate

Studs included for mounting optional panels on threaded bolts

Welded body construction

Sturdy 7 gauge lifting tabs

Overlapping doors with no center post on two-door models

Bonding provision on each door

Bolted hinges on doors

Applications: For 72 X 36 IN enclosures with mounting channel

DOCUMENTS

Hoffman LF120V28

Hoffman Panelite™ LF Gray Aluminum 28 IN Enclosure Light, T5, 120 VAC

MPN: LF120V28

TRC Part#: HOFFLF120V28

UPC: 78351019193

Min Order Quantity: 1

Quantity Interval: 1

DESCRIPTIONS

Panelite™ Enclosure Light, Voltage Rating: 120 VAC, Lamp Type: Fluorescent, Number Of Bulbs/Unit: 1, Material: Aluminum, Color: Gray, Amperage Rating: 0.26 A, Shape: F14T5, Dimension: 1-1/4 IN Height X 2-3/4 IN Width X 28 IN Length, Frequency Rating: 50/60 HZ

SPECIFICATIONS

Item Name: Enclosure Light

Sub Brand: Panelite™

Voltage Rating: 120 VAC

Lamp Type: Fluorescent

Number Of Bulbs/Unit: 1

Material: Aluminum

Color: Gray

Amperage Rating: 0.26 A

Shape: F14T5

Dimension: 1-1/4 IN Height X 2-3/4 IN Width X 28 IN Length

Frequency Rating: 50/60 HZ

FEATURES

Can be wired using optional Panelite™ cable accessories or can be hard-wired with terminal blocks included in hardware kit

Lengths with ability to daisy chain up to five lights together using one power supply

DOCUMENTS

Spec Sheet

Installation Instructions

Saginaw Control & Engineering
95 Midland Road
Saginaw, MI 48638-5770
Phone: (800)234-6871
Fax: (989)799-4524
http://www.saginawcontrol.com

Part Information - SCE-N12FA44

SCE-N12FA44

Application -
Easy to install snap fit design for use in enclosures that require cooling but have limited space in NEMA 1 and 12 applications. Housing and grill are made of black heat resistant (ABS-FR), self-extinguishing material. Fans are available in 115 or 230 volt AC or 24 volt DC, 60/50 Hertz (HZ) single phase.

Industry Standards - (IS24)
UL Component Recognized

Notes -
Type 12
UL File # E358386

Product Specifications -
Part Number: SCE-N12FA44
Description: Fan Assembly (115v)
Height: 5.91"
Width: 5.91"
Depth: 2.88"
Price Code: P2
List Price: $152.13
Catalog Page: 286
Est. Ship Weight: 3.00 lbs
Cutout Size: 5.03 sq.
CFM 50/60 Hz: 26/29
Voltage: 115
UL File Model Number: 4220A3003

Download CAD Package
Add to Bill of Material

Optional Accessories -
SCE-113947 - Replacement Filter, 4in. Nema 12 (6 Pack)
***Replacement Filters*
SCE-N12FGA44 - Filter & Grille Assy. (Black)
SCE-RH4N12 - Hood, Rain
SCE-RH4N12SS - Hood, S.S. Rain

Similar Part Numbers -
SCE-N12FA44-230 - Fan Assembly (230v)
SCE-N12FA44-24VDC - Fan Assembly (24VDC)
SCE-N12FA66 - Fan Assembly (115v)
SCE-N12FA66-230 - Fan Assembly (230v)
SCE-N12FA66-24VDC - Fan Assembly (24VDC)
SCE-N12FA1010 - Fan Assembly (115v)
SCE-N12FA1010-230 - Fan Assembly (230v)
SCE-N12FA10HF - Fan Assembly (550 CFM) 115V
SCE-N12FA10HF-230 - Fan Assembly (550 CFM) 230V
SCE-N12FA10HF-460 - Fan Assembly (550 CFM) 460V

Installation Information -
Type 12 Fan / Filter Package
Thermal Management Chart

THE REYNOLDS COMPANY
ELECTRICAL SUPPLY

Hoffman ATEMNO

Hoffman ATEM Temperature Control Switch For Fan, 120/250 VAC, 1NO

MPN: ATEMNO

TRC Part#: HOFFATEMNO

UPC: 78351071170

Min Order Quantity: 1

Quantity Interval: 1

DESCRIPTIONS

Temperature Control Switch, Power Supply: 120/250 VAC At 15/10 A Resistive, 2 A Inductive, Mounting: DIN Rail, Dimension: 2.37 IN Height X 1.31 IN Width X 1.55 IN Depth, Contact Configuration: 1NO, Enclosure: IP30

SPECIFICATIONS

Item Name: Temperature Control Switch

Power Supply: 120/250 VAC At 15/10 A Resistive, 2 A Inductive

Mounting: DIN Rail

Dimension: 2.37 IN Height X 1.31 IN Width X 1.55 IN Depth

Contact Configuration: 1NO

Enclosure: IP30

FEATURES

These easy-to-install thermostats regulate and monitor air temperature in enclosures that contain heat-emitting equipment

Thermostats prolong heater and fan life expectancy by controlling operation time and increase electrical component working efficiency by exposing them to fewer environmental contaminants

Standards: C/US UR listed, file number E164102, UL94-VO, protection rating IEC IP30, CSA certified, file number 215952, CE certified

Applications: For Fan

DOCUMENTS

Warranty

Spec Sheet

THE REYNOLDS COMPANY
ELECTRICAL SUPPLY

Hoffman DAH4001B

Hoffman DAH4001B Brushed Aluminum 1-Phase Electric Heater, 115 VAC At 50/60 HZ, 400 W

MPN: DAH4001B

TRC Part#: HOFFDAH4001B

UPC: 78351070570

Min Order Quantity: 1

Quantity Interval: 1

DESCRIPTIONS

Electric Heater, Voltage Rating: 115 V, Housing Material: Aluminum, Finish: Brushed, Power Rating: 400 W, Phase: 1 PH, Frequency Rating: 50/60 HZ, Amperage Rating: 3.72 A, Mounting: Panel, Dimension: 4-1/4 IN Width X 5.2 IN Depth X 7-1/2 IN Height, Temperature Rating: 0 To 100 DEG F, Includes: (4) 10-32 Self-Tapping Screws

SPECIFICATIONS

Item Name: Electric Heater

Voltage Rating: 115 V

Housing Material: Aluminum

Finish: Brushed

Power Rating: 400 W

Phase: 1 PH

Frequency Rating: 50/60 HZ

Amperage Rating: 3.72 A

Mounting: Panel

Dimension: 4-1/4 IN Width X 5.2 IN Depth X 7-1/2 IN Height

Includes: (4) 10-32 Self-Tapping Screws

Temperature Rating: 0 To 100 DEG F

FEATURES

Fan draws cool air from the bottom of the enclosure and passes this air across the thermostat and heating elements before being released into enclosure cavity

Heated air is discharged through the top of the heater unit

Ball bearing fan runs continuously for even temperature distribution

Product data sheet
Characteristics

ATS48C17Y
soft starter for asynchronous motor - ATS48 - 156 A - 208..690 V - 37..160 KW

Main

Range of product	Altistart 48
Product or component type	Soft starter
Product destination	Asynchronous motors
Product specific application	Pumping and ventilation machine Severe and standard applications
Component name	ATS48
Power supply voltage	208...690 V (- 15...10 %)
Motor power kW	90 kW at 525 V for severe applications 90 kW at 500 V for severe applications 90 kW at 440 V for standard applications 90 kW at 400 V for standard applications 75 kW at 440 V for severe applications 75 kW at 400 V for severe applications 45 kW at 230 V for standard applications 37 kW at 230 V for severe applications 160 kW at 690 V for standard applications 132 kW at 660 V for standard applications 110 kW at 690 V for severe applications 110 kW at 660 V for severe applications 110 kW at 525 V for standard applications 110 kW at 500 V for standard applications
Motor power hp	60 hp at 230 V for standard applications 50 hp at 230 V for severe applications 50 hp at 208 V for standard applications 40 hp at 208 V for severe applications 150 hp at 575 V for standard applications 125 hp at 575 V for severe applications 125 hp at 460 V for standard applications 100 hp at 460 V for severe applications
Power dissipation in W	479 W for standard applications 391 W for standard applications
Utilisation category	AC-53A
Type of start	Start with torque control (current limited to 5 In)
Icl nominal current	170 A for standard applications 140 A for standard applications
IP degree of protection	IP00

Complementary

Assembly style	With heat sink
Function available	External bypass (optional)
Power supply voltage limits	177...759 V
Power supply frequency	50...60 Hz (- 5...5 %)
Power supply frequency limits	47.5...63 Hz
Factory setting current	156 A
Control circuit voltage	110 - 15 % to 230 + 10 %, 50/60 Hz
Control circuit consumption	30 W
Discrete output number	2
Discrete output type	(R3) relay outputs motor powered NO (R2) relay outputs end of starting relay NO (R1) relay outputs fault relay NO (LO2) logic output 0 V common configurable (LO1) logic output 0 V common configurable
Output absolute accuracy precision	+/- 5 %
Minimum switching current	Relay outputs 10 mA at 6 V DC

Maximum switching current	Relay outputs 1.8 A at 30 V DC inductive load, cos phi = 0.5, L/R = 20 ms Relay outputs 1.8 A at 230 V AC inductive load, cos phi = 0.5, L/R = 20 ms Logic output 0.2 A at 30 V DC
Discrete input number	5
Discrete input type	(Stop, Run, LI3, LI4) logic <= 8 mA 4300 Ohm PTC 750 Ohm at 25 °C
Discrete input voltage	24 V (<= 30 V)
Discrete input logic	(Stop, Run, LI3, LI4) positive logic state 0 < 5 V and < 2 mA state 1 > 11 V and > 5 mA
Starting current	Adjustable 0.4...1.3 Icl
Analogue output type	(AO) current output 0-20 mA or 4-20 mA <= 500 Ohm
Communication port protocol	Modbus
Connector type	1 RJ45
Communication data link	Serial
Physical interface	RS485 multidrop
Transmission rate	4800, 9600 or 19200 bps
Max nodes number	31
Protection type	Thermal protection (starter) Thermal protection (motor) Phase failure (line)
Marking	CE
Type of cooling	Forced convection
Operating position	Vertical +/- 10 degree
Height	340 mm
Width	200 mm
Depth	265 mm
Product weight	12.4 kg

Environment

Electromagnetic compatibility	Voltage/Current impulse conforming to IEC 61000-4-5 level 3 Immunity to radiated radio-electrical interference conforming to IEC 61000-4-3 level 3 Immunity to electrical transients conforming to IEC 61000-4-4 level 4 Electrostatic discharge conforming to IEC 61000-4-2 level 3 Damped oscillating waves conforming to IEC 61000-4-12 level 3 Conducted and radiated emissions conforming to IEC 60947-4-2 level B Conducted and radiated emissions conforming to IEC 60947-4-2 level A
Standards	EN/IEC 60947-4-2
Product certifications	CCC CSA C-Tick DNV GOST NOM 117 SEPRO TCF UL
Vibration resistance	1.5 mm (f = 2...13 Hz) conforming to EN/IEC 60068-2-6 1 gn (f = 13...200 Hz) conforming to EN/IEC 60068-2-6
Shock resistance	15 gn for 11 ms conforming to EN/IEC 60068-2-27
Noise level	50 dB
Pollution degree	Level 3 conforming to IEC 60664-1
Relative humidity	<= 95 % without condensation or dripping water conforming to EN/IEC 60068-2-3
Ambient air temperature for operation	-10...40 °C without derating > 40...60 °C with current derating of 2 % per °C
Ambient air temperature for storage	-25...70 °C
Operating altitude	> 1000...2000 m with current derating of 2.2 % per additional 100 m <= 1000 m without derating

Product data sheet
Characteristics

LC1F185G7
TeSys F contactor - 3P (3 NO) - AC-3 - <= 440 V 275 A - coil 120 V AC

Main

Range of product	TeSys F
Product or component type	Contactor
Device short name	LC1F
Contactor application	Motor control Resistive load
Utilisation category	AC-1 AC-3
Poles description	3P
Power pole contact composition	3 NO
[Ue] rated operational voltage	<= 460 V DC <= 1000 V AC 50/60 Hz
[Ie] rated operational current	185 A (<= 55 °C) at <= 440 V AC AC-3 275 A (<= 40 °C) at <= 440 V AC AC-1
Motor power kW	55 kW at 220...230 V AC 50/60 Hz 100 kW at 1000 V AC 50/60 Hz 110 kW at 660…690 V AC 50/60 Hz 110 kW at 500 V AC 50/60 Hz 100 kW at 440 V AC 50/60 Hz 100 kW at 415 V AC 50/60 Hz 90 kW at 380...400 V AC 50/60 Hz
Control circuit type	AC 40...400 Hz
Control circuit voltage	120 V AC 40...400 Hz
[Uimp] rated impulse withstand voltage	8 kV
Overvoltage category	III
[Ith] conventional free air thermal current	275 A at <= 40 °C
Irms rated making capacity	1850 A AC conforming to IEC 60947-4-1
Rated breaking capacity	1480 kA conforming to IEC 60947-4-1
[Icw] rated short-time withstand current	400 A <= 40 °C 10 min 500 A <= 40 °C 3 min 740 A <= 40 °C 1 min 920 A <= 40 °C 30 s 1500 A <= 40 °C 10 s
Associated fuse rating	315 A gG at <= 440 V 200 A aM at <= 440 V
Average impedance	0.33 mOhm at 50 Hz - Ith 275 A
[Ui] rated insulation voltage	1500 V conforming to VDE 0110 group C 1000 V conforming to IEC 60947-4-1
Power dissipation per pole	25 W AC-1 12 W AC-3
Mounting support	Plate
Standards	EN 60947-1 EN 60947-4-1 IEC 60947-1 IEC 60947-4-1 JEM 1038
Product certifications	BV CCC CSA DNV GL RINA RMRoS UL LROS

Connections - terminals	Power circuit: bar 2 x (25 x 3 mm) Power circuit: connector 1 cable(s) 150 mm² Power circuit: lugs-ring terminals 1 cable(s) 150 mm² Control circuit: screw clamp terminals 2 cable(s) 1...4 mm² - cable stiffness: solid - without cable end Control circuit: screw clamp terminals 1 cable(s) 1...4 mm² - cable stiffness: solid - without cable end Control circuit: screw clamp terminals 2 cable(s) 1...2.5 mm² - cable stiffness: flexible - with cable end Control circuit: screw clamp terminals 1 cable(s) 1...4 mm² - cable stiffness: flexible - with cable end Control circuit: screw clamp terminals 2 cable(s) 1...4 mm² - cable stiffness: flexible - without cable end Control circuit: screw clamp terminals 1 cable(s) 1...4 mm² - cable stiffness: flexible - without cable end
Tightening torque	Power circuit: 18 N.m Control circuit: 1.2 N.m
Operating time	7...15 ms opening 20...35 ms closing
Mechanical durability	10 Mcycles
Operating rate	2400 cyc/h at <= 55 °C

Complementary

Control circuit voltage limits	0.35...0.55 Uc at 55 °C drop-out 50/60 Hz 0.85...1.1 Uc at 55 °C operational 50/60 Hz
Inrush power in VA	805 VA at 20 °C (cos ϕ 0.3) 50 Hz 970 VA at 20 °C (cos ϕ 0.3) 60 Hz
Hold-in power consumption in VA	66 VA at 20 °C (cos ϕ 0.3) 60 Hz 55 VA at 20 °C (cos ϕ 0.3) 50 Hz
Heat dissipation	18...24 W

Environment

IP degree of protection	IP2x front face with shrouds (ordered separately) conforming to VDE 0106 IP2x front face with shrouds (ordered separately) conforming to IEC 60529
Protective treatment	TH
Ambient air temperature for operation	-5...55 °C
Ambient air temperature for storage	-60...80 °C
Operating altitude	3000 m without derating in temperature
Mechanical robustness	Shocks contactor open 7 Gn for 11 ms Vibrations contactor closed 5 Gn, 5...300 Hz Shocks contactor closed 15 Gn for 11 ms Vibrations contactor open 2 Gn, 5...300 Hz
Height	174 mm
Width	168.5 mm
Depth	181 mm
Product weight	4.65 kg

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS	Compliant - since 0843 - Schneider Electric declaration of conformity
REACh	Reference not containing SVHC above the threshold
Product environmental profile	Available Download Product Environmental
Product end of life instructions	Available Download End Of Life Manual

Contractual warranty

Period	18 months

Overlap time	1.5 ms
Insulation resistance	> 10 MOhm
Product weight	0.11 lb(US) (0.05 kg)

Environment

Environmental characteristic	Normal environment
Standards	BS 4794 EN 60947-5-1 IEC 60947-5-1 NF C 63-140 VDE 0660
Product certifications	CSA UL
IP degree of protection	IP2x conforming to VDE 0106
Protective treatment	TH conforming to IEC 60068
Ambient air temperature for operation	23...140 °F (-5...60 °C)
Ambient air temperature for storage	-76...176 °F (-60...80 °C)
Operating altitude	9842.52 ft (3000 m) without derating in temperature

Ordering and shipping details

Category	22341 - CONTACTOR,D,K,&F ACCESS
Discount Schedule	I12
GTIN	00785901213703
Nbr. of units in pkg.	1
Package weight(Lbs)	0.14
Product availability	Stock - Normally stocked in distribution facility
Returnability	Y
Country of origin	FR

Offer Sustainability

Sustainable offer status	Green Premium product
RoHS	Compliant - since 0629 - Schneider Electric declaration of conformity
REACh	Reference not containing SVHC above the threshold
Product environmental profile	Available Download Product Environmental
Product end of life instructions	Need no specific recycling operations

Contractual warranty

Period	18 months

Product data sheet
Characteristics

LR9F5371
thermal overload relay for motor - TeSys LR9 - 132...220 A - class 10

Main

Range of product	TeSys F
Device short name	LR9F
Product or component type	Electronic thermal overload relay
Relay application	Motor
Product compatibility	LC1F185...LC1F400
Network type	DC
Overload tripping class	Class 10
Signalling function	Alarm
Thermal protection adjustment range	132...220 A
Protection type	GG fuse 5 A - for control circuit GG fuse 315 A - for power circuit GB2 circuit breaker 5 A - for control circuit BS fuse 5 A - for control circuit AM fuses 250 A - for power circuit
Quantity per set	Set of 10

Complementary

Network frequency	50/60 Hz
[Us] rated supply voltage	24 V DC
Supply voltage limits	17...32 V
Mounting support	Rail Direct on contactor
Tripping threshold	1.12 +/- 0.06 In tripping conforming to IEC 60947-4-1 1.05 +/- 0.06 In alarm conforming to IEC 60947-4-1
Surge withstand	4 kV conforming to IEC 61000-4-5
[Ith] conventional free air thermal current	5 A for control circuit
Maximum power	600 VA at 600 V AC 600 VA at 380 V AC 600 VA at 220 V AC 50 W at 110 V DC 45 W at 220 V DC 400 VA at 110 V AC 25 W at 440 V DC 200 VA at 48 V AC 100 W at 48 V DC 100 W at 24 V DC 100 VA at 24 V AC
[Ue] rated operational voltage	1000 V AC 50/60 Hz for power circuit conforming to VDE 0110 group C
[Ui] rated insulation voltage	1000 V AC power circuit conforming to IEC 60947-4
[Uimp] rated impulse withstand voltage	8 kV conforming to IEC 60947-1
Phase failure sensitivity	Tripping in 4 s +/- 20 % conforming to IEC 60947-4-1
Reset	Manual reset on front relay
Temperature compensation	-20...70 °C
Current consumption	<= 5 mA no-load
Switching capacity in mA	0...150 mA
Output overload protection	Auto-protected
Output short-circuit protection	Auto-protected
Voltage drop	<= 2.5 V closed state

Connections - terminals	Control circuit: screw clamp terminals 2 cable 1 mm² - cable stiffness: solid Control circuit: screw clamp terminals 2 cable 1...2.5 mm² - cable stiffness: flexible - without cable end Control circuit: screw clamp terminals 2 cable 1...1.5 mm² - cable stiffness: flexible - with cable end Control circuit: screw clamp terminals 1 cable 0.75...4 mm² - cable stiffness: flexible - without cable end Control circuit: screw clamp terminals 1 cable 0.75...2.5 mm² - cable stiffness: solid Control circuit: screw clamp terminals 1 cable 0.75...2.5 mm² - cable stiffness: flexible - with cable end
Tightening torque	Power circuit: 35 N.m - on screw clamp terminals Control circuit: 1.2 N.m - on screw clamp terminals Alarm circuit: 0.45 N.m
Height	101 mm
Width	120 mm
Depth	123.5 mm
Product weight	0.95 kg

Environment

Standards	EN 60947-4-1 IEC 60255-17 IEC 60255-8 IEC 60947-4-1 VDE 0660
Product certifications	CSA GOST UL
Protective treatment	TH standard version
IP degree of protection	IP20 conforming to VDE 0106 IP20 conforming to IEC 60529
Ambient air temperature for operation	-20...55 °C conforming to IEC 60255-8
Ambient air temperature for storage	-40...85 °C
Operating altitude	<= 2000 m without derating
Fire resistance	850 °C conforming to IEC 60695-2-1
Shock resistance	13 gn 11 ms conforming to IEC 60068-2-7
Vibration resistance	2 gn 5...300 Hz conforming to IEC 60068-2-6
Dielectric strength	6 kV at 50 Hz conforming to IEC 255-5
Resistance to electrostatic discharge	8 kV in air conforming to IEC 61000-4-2 6 kV in indirect mode conforming to IEC 61000-4-2
Resistance to radiated fields	10 V/m conforming to IEC 61000-4-3
Resistance to fast transients	2 kV conforming to IEC 61000-4-4

Contractual warranty

Period	18 months

Product data sheet
Characteristics

LADN22
TeSys D - auxiliary contact block - 2 NO + 2 NC - screw clamp terminals

Product availability: Stock - Normally stocked in distribution facility

Price*: 41.50 USD

Main

Commercial Status	Commercialised
Range of product	TeSys D TeSys D control relay TeSys F
Product or component type	Auxiliary contact block
Product compatibility	CR1F
Auxiliary contacts operation	Instantaneous
Pole contact composition	2 NO + 2 NC
Connections - terminals	Screw clamp terminals 2 cable 0...0 in² (1...2.5 mm²) - cable stiffness: solid - without cable end Screw clamp terminals 2 cable 0...0 in² (1...2.5 mm²) - cable stiffness: solid - with cable end Screw clamp terminals 2 cable 0...0 in² (1...2.5 mm²) - cable stiffness: flexible - without cable end Screw clamp terminals 2 cable 0...0 in² (1...2.5 mm²) - cable stiffness: flexible - with cable end Screw clamp terminals 1 cable 0...0 in² (1...2.5 mm²) - cable stiffness: solid - without cable end Screw clamp terminals 1 cable 0...0 in² (1...2.5 mm²) - cable stiffness: solid - with cable end Screw clamp terminals 1 cable 0...0 in² (1...2.5 mm²) - cable stiffness: flexible - without cable end Screw clamp terminals 1 cable 0...0 in² (1...2.5 mm²) - cable stiffness: flexible - with cable end

Complementary

Mounting location	Front
[Ui] rated insulation voltage	600 V - certifications CSA 690 V - conforming to IEC 60947-5-1 600 V - certifications UL
[Ue] rated operational voltage	690 V AC 25...400 Hz
[Ith] conventional free air thermal current	10 A at <= 140 °F (60 °C)
Irms rated making capacity	250 A at <= 690 V DC conforming to IEC 60947-5-1 140 A at <= 690 V AC conforming to IEC 60947-5-1
Permissible short-time rating	140 A at 23...140 °F (-5...60 °C) 100 ms 120 A at 23...140 °F (-5...60 °C) 500 ms 100 A at 23...140 °F (-5...60 °C) 1 s
Protection type	GG fuse <= 10 A rating according to operational current for Ue <= 690 V
Associated fuse rating	IEC 60947-5-1
Mechanical durability	30 Mcycles
Minimum switching current	5 mA
Minimum switching voltage	17 V
Non-overlap time	1.5 ms on energisation (no overlap between NC and NO contact) 1.5 ms on de-energisation (no overlap between NC and NO contact)

Product data sheet
Characteristics

MJL36500
MOLDED CASE CIRCUIT BREAKER 600V 500A

Product availability: Non-Stock - Not normally stocked in distribution facility

Price*: 9456.00 USD

Main

Commercial Status	Commercialised
Product or component type	Molded Case Circuit Breaker
Range of product	PowerPact M
Current sensor rating range	500 A
Product certifications	CSA IEC UL listed
Mounting mode	Unit mount
Poles description	3P
Breaking capacity	25 kA 600 V 65 kA 480 V 100 kA 240 V
[Ics] rated service short-circuit breaking capacity	80 %
Trip unit technology	Electronic basic ET 1.0 LI

Ordering and shipping details

Category	01205 - MG, MJ UNIT MOUNT BREAKER
Discount Schedule	DE2
GTIN	00785901570196
Nbr. of units in pkg.	1
Package weight(Lbs)	29.00
Product availability	Non-Stock - Not normally stocked in distribution facility
Returnability	Y
Country of origin	US

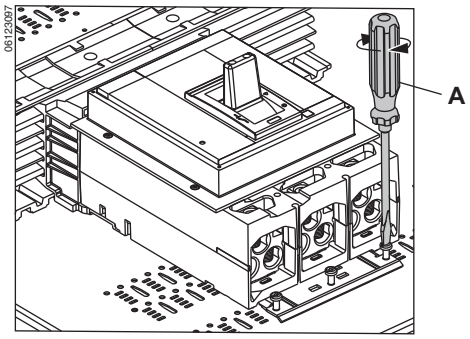
Contractual warranty

Period	18 months

ENGLISH

5. Tighten all mounting bracket screws (A) firmly without bending mounting bracket.

Figure 7: Tighten Mounting Bracket Screws



Install Cable

Square conductor ends and preform conductors to final configuration. Using a proper insulation stripping tool, strip conductor ends as recommended in Table 1. Do not nick strands.

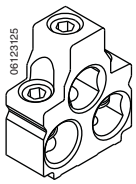
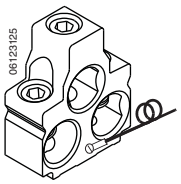
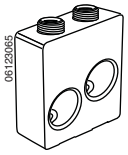
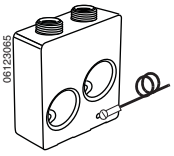
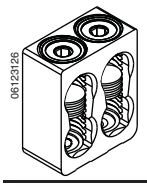
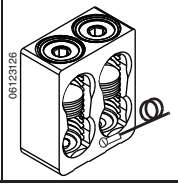
NOTICE

HAZARD OF FALSE TORQUE INDICATION

Do not allow conductor strands to interfere with threads of wire binding screw.

Failure to follow these instructions can result in equipment damage.

Table 1: Circuit Breaker Lug Information

Lug	Lug with Optional Control Wire Installed	Catalog Number	Conductor				Screw Torque	
			Type	Size	Qty.	Strip Length[2]	Wire Binding Screw	Control Wire Screw
		AL800M23K[1]	Al/Cu	3/0–500 kcmil (95–240 mm^2)	3	1.0 in. (25 mm)	442.5 lb-in (50 N•m)	9–12 lb-in (1–1.3 N•m)
		CU800M23K	Cu					
		AL800P6K[1]	Al/Cu	3/0–600 kcmil (95–300 mm^2)	2	1.2 in. (30 mm)	442.5 lb-in (50 N•m)	9–12 lb-in (1–1.3 N•m)
		AL1200P24K[1]	Al/Cu	3/0–500 kcmil (95–240 mm^2)	4	1.2 in. (30 mm)	442.5 lb-in (50 N•m)	9–12 lb-in (1–1.3 N•m)
		CU1200P24K	Cu					

[1] For version with tapped hole for control wire add a T before the K to the catalog number (i.e. AL800M23TK).
[2] Conductors must be cut square for secure termination.

Product data sheet
Characteristics

LAL36250
MOLDED CASE CIRCUIT BREAKER 600V 250A

Product availability: Stock - Normally stocked in distribution facility

Price*: 4619.00 USD

Main

Commercial Status	Commercialised

Ordering and shipping details

Category	00935 - LAL/LHL BRKR, SW, MAG-GARD
Discount Schedule	DE2
GTIN	00785901426745
Nbr. of units in pkg.	1
Package weight(Lbs)	16.60
Product availability	Stock - Normally stocked in distribution facility
Returnability	Y
Country of origin	MX

Offer Sustainability

Sustainable offer status	Not Green Premium product
RoHS	Will be Compliant on 3Q2014
REACh	Reference not containing SVHC above the threshold

Contractual warranty

Period	18 months

MODEL 258

3-Phase Monitor

- **Detects phase loss, low voltage, phase reversal**
- **50 Hz, 60 Hz and 400 Hz models**
- **Automatic or manual reset**
- **Five year unconditional warranty**

DESCRIPTION

The **Model 258** continuously monitors 3-phase power lines for abnormal conditions. When properly adjusted, the Model 258 Monitor will detect phase loss on a loaded motor even when regenerated voltage is present.

This device consists of a solid-state voltage and phase-angle sensing circuit, driving an electro-mechanical relay. When correct voltage and phase rotation are applied, the internal relay will energize. A fault condition will de-energize the relay. When the fault is corrected, the monitor will automatically reset *(a manual reset version is also available)*.

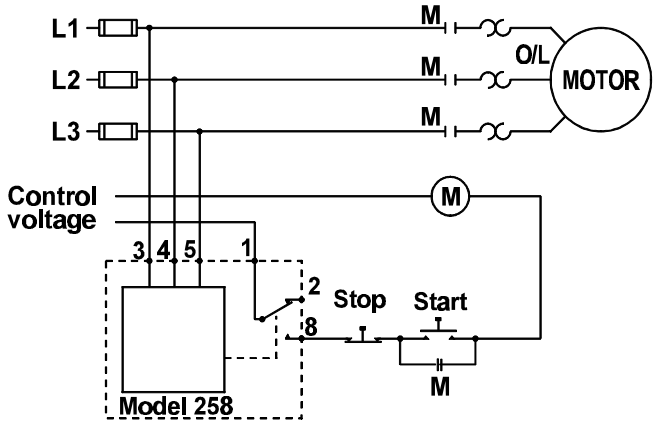
The Model 258 3-Phase Monitor does not require a neutral connection and can be used with Wye or Delta systems. Voltage ranges are sufficiently wide to allow for proper adjustment to existing conditions. Both "TRIP" and "NORM" condition indicators are provided to aid in adjustment and system trouble-shooting.

SPECIFICATIONS

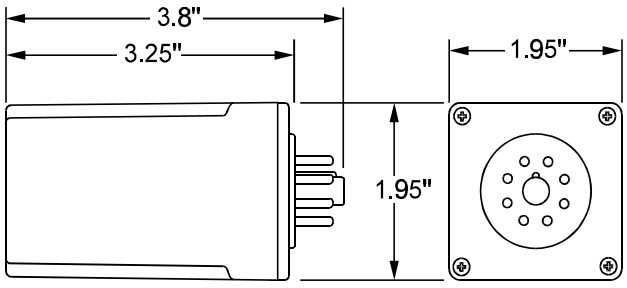
AUTO Reset MANUAL Reset	B258B B258BM	258B 258BM	A258B A258BM	EX258B EX258BM	B258B-400 B258BM-400	258B-400 258BM-400
Nominal AC voltage (phase to phase)	120 vac	208/240 vac	480 vac	380 vac	120 vac	208/240 vac
Case Color	Gray	Red	Yellow	Yellow	Gray	Red
Adjustment range	85-120 vac	160-240 vac	380-480 vac	300-400 vac	85-120 vac	160-240 vac
Frequency	60 Hz	60 Hz	60 Hz	50 Hz	400 Hz	400 Hz
Pwr consumption	0.75W	1.5W	4.5W	3.75W	0.75W	1.5W
Transient protection	2500 VAC for 10 ms					
Repeat accuracy	± 0.1% of set point (fixed conditions)					
Response time	50 msec (set or reset)					
Dead band	Approx. 2%					
Output contacts	SPDT 10 amps at 240 VAC resistive					
Expected relay life	Mechanical: 10 million operations Electrical: 100,000 operations at rated load					
Operating temp.	-40° to +131° F					
Humidity tolerance	0 - 97% w/o condensation					
Enclosure material	Dust cover: ABS plastic					
Mounting	8-pin socket (**sold separately)					
Weight	5 oz.					
Agency approvals	UL Recognized* and CSA Certified ***condition of acceptability:** the 380V and 480V versions must be used with a UL Recognized 600 VAC socket					

** Order 8-pin socket number **51X120**

TYPICAL APPLICATION



DIMENSIONS



TIME MARK CORPORATION

Product data sheet
Characteristics

RUZC3M
socket RUZ - mixed contact - 10A - < 250V - connector -for relay RXM2.., RUMC3..

Product availability: Stock - Normally stocked in distribution facility

Main

Commercial Status	Commercialised
Range of product	Zelio Relay
Product or component type	Socket
Contact terminal arrangement	Mixed
Product compatibility	Plug-in relay RUM (3 C/O)
Shape of pin	Cylindrical
Device short name	RUZ
Sale per indivisible quantity	10

Complementary

[Ith] conventional free air thermal current	10 A
[Ue] rated operational voltage	< 250 V
Tightening torque	<= 8.85 lbf.in (1 N.m) (M3.5 screw(s))
Fixing mode	Clip-on mounting on 35 mm symmetrical DIN rail By screw mounting on panel
Marking	CE
Width	1.5 in (38 mm)
Product weight	0.12 lb(US) (0.054 kg)

Environment

Connections - terminals	Connector, solid cable without cable end 2 x 0.5...2 x 1.5 mm²/AWG20...AWG16 Connector, solid cable without cable end 1 x 0.5...1 x 2.5 mm²/AWG20...AWG14 Connector, flexible cable with cable end 2 x 0.25...2 x 1 mm²/AWG22...AWG17 Connector, flexible cable with cable end 1 x 0.25...1 x 2.5 mm²/AWG22...AWG14
Standards	IEC 61984
Product certifications	CSA UL
Ambient air temperature for storage	-40...185 °F (-40...85 °C)
Ambient air temperature for operation	-40...131 °F (-40...55 °C)
IP degree of protection	IP20 conforming to EN/IEC 60529
Dielectric strength	2500 V

Ordering and shipping details

Category	21128 - ZELIO ICE CUBE RELAY ACCESSORIES
Discount Schedule	CP2
GTIN	00785901923893
Nbr. of units in pkg.	10
Package weight(Lbs)	0.05
Product availability	Stock - Normally stocked in distribution facility
Returnability	Y
Country of origin	CN

Contractual warranty

Period	18 months

FAZ-NA Circuit Breakers

Optimum and Efficient Protection for Every Application

Contents

FAZ-NA Circuit Breakers

Product Overview

Optimum product quality, tested reliability and safety stand for best protection of personnel, installations and plant. Eaton's FAZ-NA DIN rail mountable circuit breaker is designed for use in branch service applications.

Powerful Offering for Machine and System Builders

The FAZ-NA is available with B, C and D characteristics in accordance with UL® 489, CSA® C22.2 No.5; UL 1077, CSA C22.2 No.235 and IEC 60947-2. These devices are CE marked.

Application Description

Feeder and branch circuit protection for:

- Convenience receptacle circuits (internal/external)
- Motor control circuits
- Load circuits leaving the equipment (external)
- HACR internal/external equipment (heating, air conditioning, refrigeration)
- PLC I/O points
- Computers
- Power supplies
- Control instrumentation
- Relays
- UPS
- Power conditioners

Features

- Complete range of UL 489 listed DIN rail mounted miniature circuit breakers up to 40A current rating
- Standard ratings of 10 kAIC up to 277/480 Vac
- Select amperages available at 14 kAIC up to 277/480 Vac and 10 kAIC up to 125 Vdc per pole
- Current limiting design provides fast short-circuit interruption that reduces the let-through energy, which can damage the circuit
- Suitable for branch circuit device protection
- Thermal-magnetic overcurrent protection
  - Three levels of short-circuit protection, categorized by B, C and D curves
- Trip-free design—breaker can not be defeated by holding the handle in the ON position
- Captive screws cannot be lost
- SWD (switching duty)—suitable for switching fluorescent lighting loads ($I_n \leq 20A$)
- Fulfill UL 489, CSA C22.2 No.5 and also IEC 60947-2 Standard
- For use in applications for which UL 1077 or CSA C22.2 No.235 are also allowed
- Field-installable shunt trip and auxiliary switch subsequent mounting
- Separate version for ring-tongue connection (Type FAZ-RT), terminal screws can be removed (on both sides)
- Module width of only 17.7 mm (per pole)
- Contact Position Indicator (red/green)
- Easy installation on DIN rail
- Possibility for sealing the toggle in ON or OFF position

Device Printing on Front and Side

Installation options

These branch circuit breakers are available in two terminal configurations: standard box terminals that accept multiple conductors and ring-tongue terminals, ideally suited to demanding requirements of the semi-conductor industry. All breakers mount on standard 35 mm DIN rail. Bus connectors and feeder terminal facilitate mounting and wiring of multiple miniature circuit breaker arrays in control panel assemblies. These circuit breakers can also be reverse feed.

1

Standards and Certifications

FAZ-NA complies with the latest national and international standards.

- UL 489
  - Standard for molded case circuit breakers (MCCB) for feeder and branch circuit protection
  - Products meet the requirements of the National Electrical Code® (NEC®)
- CSA C22.2 No.5
  - Standard for molded case circuit breakers (MCCB) for feeder and branch circuit protection (corresponds closely to UL 489 Standard)
  - Products meet the requirements of the Canadian Electrical Code (CEC)
- RoHS compliant
- VDE compliant
- ABS compliant

Listed

Catalog Number Selection

FAZ C 6 / 1 NA SP

Breaker Family	Trip Characteristics ①	Ampere Rating ②	Number of Poles	Terminal	Single Package
FAZ = FAZ UL circuit breaker	**B** = 3–5X I_n **C** = 5–10X I_n **D** = 10–20X I_n	**0.5** = 0.5A **1** = 1A **1.5** = 1.5A **2** = 2A **3** = 3A **4** = 4A **5** = 5A **6** = 6A **7** = 7A **8** = 8A **10** = 10A **13** = 13A **15** = 15A **16** = 16A **20** = 20A **25** = 25A **30** = 30A **32** = 32A **35** = 32A **40** = 40A	**1** = Single-pole **2** = Two-pole **3** = Three-pole	**NA** = UL 489 branch circuit with screw terminals **RT** = UL 489 branch circuit with ring tongue terminals **DC** = UL 489 branch circuit at 125 Vdc per pole	**SP** = Single package for C and D curve single-pole only **Blank** = Standard packaging

Notes

① I_n = Rated current for instantaneous trip characteristics.

② B curve starts at 1 ampere.

APC UPS Systems

J TYPE POWER CONDITIONERS WITH BATTERY BACKUP

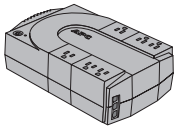
- Output Connections: (2) NEMA 5-15R

NEW PRODUCT

For quantities greater than listed, call for quote.

MOUSER STOCK NO.	APC Part No.	No. of Outlets	Model	Dimensions: H x W x D in.	Output Capacity	Price Each
679-J35B	J35B	8	Power Conditioners with Battery Backup	97.60 x 431.80 x 406.40	1500VA / 865w	559.10

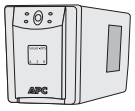
A



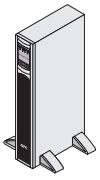
B

C

D



E



BACK-UPS

Back up power solutions from desktop to datacenter to custom-built industrial UPS system

- Input / Output Volts = 120V / 120V
- Input Plug - NEMA 5-15P
- SMT2200 - NEMA 5-20P
- SMT3000 - NEMA L5-30P

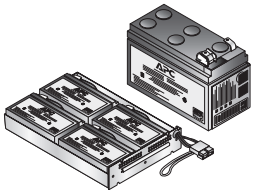
For quantities greater than listed, call for quote.

MOUSER STOCK NO.	APC Part No.	Fig.	No. of Outlets	Model	Dimensions: H x W x D in.	Output Power Capacity	Recommended Replacement Battery	Backup Time Half/Full Load	Price Each
679-BE450G	BE450G	A	8	Back-UPS ES	3.50 x 7.00 x 12.00	450VA / 257W	- - -	11.6min / 2.5 min.	70.32
679-BE550G	BE550G	A	8	Back-UPS ES	3.50 x 7.00 x 12.00	550VA / 330W	APCRBC110	13.5min / 3.3 min.	80.84
679-BE750G	BE750G	A	10	Back-UPS ES	3.48 x 7.09 x 13.49	750VA / 450W	RBC17	11.3min. / 2.3 min.	114.66
679-BK350	BK350	B	6	Back-UPS CS	6.50 x 3.60 x 11.20	350VA / 210W	RBC2	18.1min. / 4.7 min.	113.57
679-BK500	BK500	B	6	Back-UPS CS	6.50 x 3.60 x 11.20	500VA / 300W	RBC2	13.9min. / 3.4 min.	141.56
679-BR700G	BR700G	C	6	Power-Saving Back-UPS RS	7.48 x 3.58 x 12.20	700VA / 420W	RBC17	12.0min. / 3.0 min.	154.61
679-BR1000G	BR1000G	C	8	Power-Saving Back-UPS RS	9.84 x 3.94 x 15.04	1000VA / 600W	APCRBC123	20.0 min. / 7.0 min.	185.64
679-BR1500G	BR1500G	B	10	Power-Saving Back-UPS RS	14.60 x 3.40 x 13.10	1500VA / 865W	RBC33	15.4min. / 5.1 min.	286.65
679-SC420	SC420	D	4	Smart-UPS SC	6.60 x 4.70 x 14.50	420VA / 260W	RBC2	13.5min. / 5.5 min.	154.41
679-SC620	SC620	D	4	Smart-UPS SC	6.60 x 4.70 x 14.50	620VA / 390W	RBC4	15.7min. / 5.5 min.	218.44
679-SMT750	SMT750	C	6	Power-Saving Smart-UPS	6.30 x 5.40 x 14.10	750VA / 500W	RBC48	15.9min. / 4.6 min.	359.58
679-SMT1000	SMT1000	C	8	Power-Saving Smart-UPS	8.50 x 6.70 x 17.30	1000VA / 670W	RBC6	20.6min. / 6.1 min.	501.23
679-SMT1500	SMT1500	C	8	Power-Saving Smart-UPS	8.50 x 6.70 x 17.30	1440VA / 980W	RBC7	23.9min. / 6.7 min.	621.89
679-SMT2200	SMT2200	C	⁎10	Power-Saving Smart-UPS	17.00 x 7.70 x 21.50	2200VA / 1980W	RBC55	24.0min. / 7.0 min.	1025.68
679-SMT3000	SMT3000	C	⁎10	Power-Saving Smart-UPS	17.00 x 7.70 x 21.50	3000VA / 2700W	RBC55	14.0min. / 6.0 min.	1343.87
679-SMX750	SMX750	E	8	Power-Saving Smart-UPS	17.00 x 3.50 x 19.30	750VA / 600W	APCRBC116	24.0min. / 12.0 min.	568.42
679-SMX1000	SMX1000	E	8	Power-Saving Smart-UPS	17.00 x 3.50 x 19.30	1000VA / 800W	APCRBC116	20.0min. / 8.0 min.	695.17
679-SMX1500RM2U	SMX1500RM2U	E	8	Power-Saving Smart-UPS	3.50 x 17.00 x 19.30	1500VA / 1200W	APCRBC115	14.0min. / 5.0 min.	867.70

⁎10 Output Connections: (8) NEMA 5-12R & (2) NEMA 5-20R

UPS REPLACEMENT BATTERY CARTRIDGES

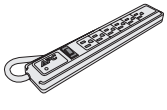
Other options available, contact a Mouser Representative



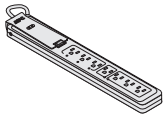
For quantities greater than listed, call for quote.

MOUSER STOCK NO.	APC Part No.	Description	Price Each
679-RBC2	RBC2	BK200, BK250B, BK280B, BK280, BP280, BP280PNP, BP280C, BP280S, BK300 BK350, BK400, BK400B,BP420S, SU420NET, BK500, BE500U, BK500M	48.16
679-RBC4	RBC4	BK650MC, BP650C, BP650PNP, BP650S, SU620NET	83.71
679-RBC6	RBC6	BP1000, SUVS1000, SU1000, SUA1000, SU1000NET	203.54
679-RBC7	RBC7	SU700XL, SU1000XL, BP1400, SU1400, SUA1500	219.03

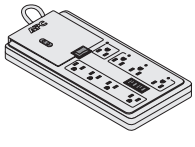
A



B

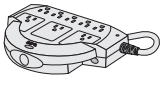


C



D

E



F

SURGE PROTECTION AND CONDITIONING

Safeguard your equipment from everyday power surges, lightning strikes and other power anomalies

For quantities greater than listed, call for quote.

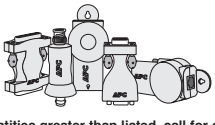
MOUSER STOCK NO.	APC Part No.	Fig.	No. of Outlets	Category	Description	Price Each
679-P7T	P7T	A	7	Basic Surge Protectors - A	490 joules, data line protection, 6' cord, black	17.32
679-P7GB	P7GB	B	7	Power-Saving Essential SurgeArrest	1020 joules, "power-saving" outlets, data line protection, 4' cord, white	28.64
679-P8GT	P8GT	C	8	Power-Saving Home/Office SurgeArrest	w/ phone protection	32.75
679-P4GC	P4GC	D	4	Power-Saving Surge Protectors	1020 joules, LCD Timer controls all 4 outlets	20.64
679-P6GC	P6GC	D	6	Power-Saving Surge Protectors	1020 joules, LCD timer controls 5 outles. 1 continous	21.84
679-PRO8	PRO8	E	8	SurgeArrest Professional	320 joules, beige	27.29
679-NET9RMBLK	NET9RMBLK	F	9	SurgeArrest Rack Mountable	1700 joules, horizontal or vertical mount, beige	107.02

LINE-R-HIGH PERFORMANCE POWER CONDITIONING

For quantities greater than listed, call for quote.

MOUSER STOCK NO.	APC Part No.	Description	Price Each
679-LE600	LE600	600VA, 4NEMA 5-15R	50.44
679-LE1200	LE1200	1200VA, 4 NEMA 5-15R	62.07

PROTECTNET DATA LINE PROTECTORS



For quantities greater than listed, call for quote.

MOUSER STOCK NO.	APC Part No.	Description	Price Each
679-PNET1GB	PNET1GB	RJ45 10/100/1000 Base-T ethernet prot.	24.43

Type 2 surge arrester - VAL-SEC-T2-1S-350-FM - 2905333

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (http://phoenixcontact.com/download)

Plug-in surge arrester, in accordance with Type 2/Class II, for 1-phase power supply networks with separate N and PE (3-conductor system: L1, N, PE), with remote indication contact.

Why buy this product

- Varistor arrester free of leakage current
- High-performance gas-filled surge arrester for N/PE protection
- Extremely narrow design, just 12 mm per position
- High continuous voltage of 350 V AC for 230/400 V AC networks with high voltage fluctuations
- Pluggable
- Low voltage protection level of 1.5 kV
- Optical, mechanical status indicator
- With floating remote indication contact as an option
- Plugs can be checked with CHECKMASTER 2

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 947732
Weight per Piece (excluding packing)	221.0 g
Custom tariff number	85363030
Country of origin	Germany

Technical data

Dimensions

Height	97.9 mm
Width	25.4 mm
Depth	74.5 mm
Horizontal pitch	1.4 Div.

Type 2 surge arrester - VAL-SEC-T2-1S-350-FM - 2905333

Technical data

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-40 °C ... 80 °C
Ambient temperature (storage/transport)	-40 °C ... 80 °C
Altitude	≤ 2000 m (amsl (above mean sea level))
Permissible humidity (operation)	5 % ... 95 %
Shock (operation)	30g (half sinus / 11 ms / 3x ±X, ±Y, ±Z)
Vibration (operation)	5g (10 ... 500 Hz / 2.5 h / X, Y, Z)

General

Standards/specifications	IEC 61643-11 2011
	EN 61643-11 2012
IEC test classification	II
	T2
EN type	T2
IEC power supply system	TT
	TN-S
Number of ports	One
SPD design	Combination type
Mode of protection	L-N
	N-PE
Mounting type	DIN rail: 35 mm
Color	light grey RAL 7035
	traffic grey A RAL 7042
Housing material	PA 6.6-FR 20% GF
	PBT-FR
Pollution degree	2
Inflammability class according to UL 94	V-0
Type	DIN rail module, two-section, divisible
Number of positions	2
Surge protection fault message	Optical, remote indicator contact

Protective circuit

Nominal voltage U_N	240 V AC (TN-S)
	240 V AC (TT)
Nominal frequency f_N	50 Hz (60 Hz)
Maximum continuous operating voltage U_C (L-N)	350 V AC
Maximum continuous voltage U_C (N-PE)	264 V AC
Rated load current I_L	40 A (Biconnect M4 fork-type cable lug 6 mm²)
	63 A (TWIN ferrule 2 x 10 mm²)
Residual current I_{PE}	≤ 1 µA
Nominal discharge current I_n (8/20) µs (L-N)	20 kA

Type 2 surge arrester - VAL-SEC-T2-1S-350-FM - 2905333

Technical data

Protective circuit

Nominal discharge current I_n (8/20) µs (N-PE)	20 kA
Maximum discharge current I_{max} (8/20) µs (L-N)	40 kA
Maximum discharge current I_{max} (8/20) µs (N-PE)	40 kA
Follow current interrupt rating I_{fi} (N-PE)	100 A (264 V AC)
Short-circuit current rating I_{SCCR}	25 kA (in case of 315 A gG backup fuse)
	50 kA (in case of 200 A gG backup fuse)
Voltage protection level U_p (L-N)	≤ 1.5 kV
Voltage protection level U_p (N-PE)	≤ 1.5 kV
Residual voltage U_{res} (L-N)	≤ 1.5 kV (at I_n)
	≤ 1.3 kV (at 10 kA)
	≤ 1.2 kV (at 5 kA)
	≤ 1.1 kV (at 4 kA)
	≤ 1 kV (at 2 kA)
Residual voltage U_{res} (N-PE)	≤ 0.5 kV (at I_n)
	≤ 0.5 kV (at 10 kA)
	≤ 0.5 kV (at 5 kA)
	≤ 0.5 kV (at 4 kA)
	≤ 0.5 kV (at 2 kA)
Front of wave sparkover voltage at 6 kV (1.2/50) µs (N-PE)	≤ 1.5 kV
TOV behavior at U_T (L-N)	415 V AC (5 s / withstand mode)
	457 V AC (120 min / safe failure mode)
TOV behavior at U_T (N-PE)	1200 V AC (200 ms / withstand mode)
Response time t_A (L-N)	≤ 25 ns
Response time t_A (N-PE)	≤ 100 ns
Max. backup fuse with branch wiring	315 A AC (gG)
Max. backup fuse with V-type through wiring	40 A AC (gG / Biconnect M4 fork-type cable lug, 6 mm²)
	63 A AC (gG / TWIN ferrule 2x 10mm²)

Indicator/remote signaling

Connection name	Remote fault indicator contact
Switching function	PDT contact
Operating voltage	5 V AC ... 250 V AC
	125 V AC (UL)
	125 V DC (200 mA DC)
Operating current	5 mA AC ... 1 A AC
	1 A AC (UL)
	1 A DC (30 V DC)
Connection method	Pluggable screw connection
Screw thread	M2
Tightening torque	0.25 Nm

Type 2 surge arrester - VAL-SEC-T2-1S-350-FM - 2905333

Technical data

Indicator/remote signaling

	2 lb_f-in. ... 4 lb_f-in. (UL)
Stripping length	7 mm
Conductor cross section flexible min.	0.14 mm²
Conductor cross section flexible max.	1.5 mm²
Conductor cross section solid min.	0.14 mm²
Conductor cross section solid max.	1.5 mm²
AWG conductor cross section	28 ... 16
	30 ... 14 (UL)

Connection data

Connection method	Screw connection
Conductor cross section flexible min.	2.5 mm²
Conductor cross section flexible max.	16 mm²
Conductor cross section solid min.	2.5 mm²
Conductor cross section solid max.	25 mm²
AWG conductor cross section	12 ... 4
	14 ... 2 (Solid - UL)
	14 ... 4 (Stranded - UL)
Screw thread	M5
Tightening torque	4.5 Nm
	40 lb_f-in. ... 50 lb_f-in. (UL)
Stripping length	16 mm

UL specifications

UL class	Type 4 SPD for Type 2 applications
Maximum continuous operating voltage MCOV (L-N)	350 V AC
Maximum continuous operating voltage MCOV (L-G)	614 V AC
Maximum continuous operating voltage MCOV (N-G)	264 V AC
Nom. voltage	240 V AC
Mode of protection	L-N
	L-G
	N-G
Power distribution system	1
Nominal frequency	50/60 Hz
Voltage protection rating VPR (L-N)	1.2 kV
Voltage protection rating VPR (L-G)	1.8 kV
Voltage protection rating VPR (N-G)	1.2 kV
Nominal discharge current I_n (L-N)	20 kA
Nominal discharge current I_n (L-G)	20 kA
Nominal discharge current I_n (N-G)	20 kA
Follow current (N-G)	200 A (264 V AC)

Product Data Sheet

9070TF1000D1

Industrial Control Transformer , 1000VA

SQUARE D by Schneider Electric

List Price	$426.00 USD
Availability	**Stock Item: This item is normally stocked in our distribution facility.**

Technical Characteristics

Insulation Temperature	180 Degrees C
Application	Develop to help customers comply with UL Standard 508 and NEC 450
Approvals	UL Listed File Number: E61239 - CSA Certified File Number: LR37055 Guide: 184-N-90 - CE Marked
Catalog Reference Number	9070CT9901
Enclosure Type	Open
Phase	1-Phase
Temperature Rise	115 Degrees C
Height	5.73 Inches
Type	TF
Mounting Type	Panel
Fuse Block	Top Mounted
Winding Material	Copper
Rating	1000VA
Secondary	120V or 115V or 110V
Depth	6.04 Inches
Primary	240x480V or 230x460V or 220x440V
Terminal Type	Screw Clamp
Width	5.25 Inches
Specifications	0.41 x 1.50 Inch (Class CC) Primary Fuse Holders

Shipping and Ordering

Category	16203 - Transformers, Industrial Control, 250 - 2000 va, Type TF
Discount Schedule	CP8
Article Number	785901904922
Package Quantity	1
Weight	21.8 lbs.
Availability Code	Stock Item: This item is normally stocked in our distribution facility.
Returnability	Y

As standards, specifications, and designs change from time to time, please ask for confirmation of the information given in this document.

Generated: 06/16/2009 21:22:45

Schneider Electric

LIMITRON™ FNQ-R Class CC 600Vac, 1/4-30A, time-delay fuses

RoHS

Catalog numbers (amps)			
FNQ-R-1/4	FNQ-R-1-3/10	FNQ-R-3-2/10	FNQ-R-8
FNQ-R-3/10	FNQ-R-1-4/10	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-1/2	FNQ-R-1-6/10	FNQ-R-4-1/2	FNQ-R-12
FNQ-R-6/10	FNQ-R-1-8/10	FNQ-R-5	FNQ-R-15
FNQ-R-3/4	FNQ-R-2	FNQ-R-5-6/10	FNQ-R-17-1/2
FNQ-R-8/10	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-2-8/10	FNQ-R-7	FNQ-R-30
FNQ-R-1-1/4	FNQ-R-3	FNQ-R-7-1/2	

Catalog symbol:

- FNQ-R-(amp)

Description:

Advanced protection Class CC current-limiting, time-delay fuses.

Specifications:

Ratings

- Volts
  - 600Vac
  - 300Vdc (15 & 20A)
- Amps 1/4-30A
- IR
  - 200kA Vac RMS Sym.
  - 20kA Vdc (15 & 20A)

Agency information

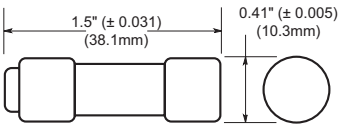
- UL® Listed, Std. 248-4, Class CC, Guide JDDZ, File E4273
- CSA® Certified, Class CC CSA, Class 1422-01, File 53787–HRC-MISC
- CE
- RoHS compliant*

* FNQ-R-1/4 not RoHS complaint.

Carton quantity:

Amp rating	Carton qty.
1/4-30	10

Dimensions - in:



Features:

- Provides 10X better current limitation to help prevent equipment damage caused by short-circuit events.
- 200kA interrupting rating complies with NEC® Section 110.9 for today's large capacity systems.
- Fast-acting fuse helps prevent equipment damage caused by short-circuit events.
- Rejection type fuse fits both standard and rejection-style holders.
- The Class CC FNQ-R Limitron fuse meets the needs of control circuit transformer protection.
- FNQ-R fuses can be sized according to NEC® and UL requirements and still allow the high inrush currents, with significantly more time-delay than the UL minimum value of 12 seconds at 200% for Class CC fuses.
- Ideal for critical industrial or commercial applications that have specific current limitation requirements.

Applications:

- Branch circuits
- Line protection
- Small control transformers
- Industrial control

Recommended fuse blocks and holders:

Fuse amps	1-Pole	2-Pole	3-Pole
Modular open blocks			
0-30	BCM603-1_	BCM603-2_	BCM603-3_
DIN-Rail holders			
	CHCC1D_	CHCC2D_	CHCC3D_
0-30	—	—	OPM-NG-_
	—	—	OPM-1038_
	—	—	OPM-1038_SW
Panel mount holders			
0-30	HPS	—	—
	HPF	—	—
In-line holders			
0-30	—	HEY	—
	HEZ	—	—

For additional information on Class CC fuse blocks and holders, see data sheets:

- Modular open blocks # 10241 (BCM)
- DIN-Rail holders No. 3185 (CHCC), No. 1109 (OPM), No. 1102 (OPM-1038), No. 1103 (OPM-1038_SW)
- Panel mount holders No. 2113 (HPS), No. 2114 (HPF)
- In-line holders No. 2126 (HEY), No. 2130 (HEZ)

FNM 13/32″ x 1-1/2″ 250Vac time-delay supplemental fuses

RoHS

250Vac
1/10 to 30A

Catalog symbol / color code:

- FNM - Green (250Vac maximum voltage)

Description:

Time-delay supplemental fuse.

For superior protection, Eaton recommends upgrading to Bussmann® series Low-Peak™ Class CC fuses. See data sheet # 1023.

Specifications:

Ratings

Fuse amp range	Interrupting rating at system voltage		Agency information	
	250Vac	125Vac	UL	CSA
1/10 to 1	35A	10kA	X	X
1-1/8 to 3-1/2	100A	10kA	X	X
4 to 10	200A	10kA	X	X
12 to 30	10kA	-	X	X

Agency information

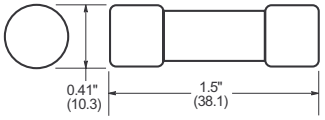
- UL® Listed, Std. 248-14, Guide JDYX; File E19180
- CSA® Certified, Class 1422-01, File 53787
- CE
- RoHS compliant

Catalog numbers (amps)			
FNM-1/10	FNM-8/10	FNM-2-1/2	FNM-6-1/4
FNM-1/8	FNM-1	FNM-2-8/10	FNM-7
FNM-15/100	FNM-1-1/8	FNM-3	FNM-8
FNM-2/10	FNM-1-1/4	FNM-3-2/10	FNM-9
FNM-1/4	FNM-1-4/10	FNM-3-1/2	FNM-10
FNM-3/10	FNM-1-1/2	FNM-4	FNM-12
FNM-4/10	FNM-1-6/10	FNM-4-1/2	FNM-15
FNM-1/2	FNM-1-8/10	FNM-5	FNM-20
FNM-6/10	FNM-2	FNM-5-6/10	FNM-25
FNM-3/4	FNM-2-1/4	FNM-6	FNM-30

Carton quantity

Amps	Qty.
1/10 to 30	10

Dimensions - in (mm):



Features:

- Color coded green for 250Vac maximum voltage rating
- Melamine tube construction
- Nickel-plated brass endcaps

Typical applications:

- Circuits with high inrush currents (motor/transformer loads)
- Supplemental protection for 125Vac and 250Vac inductive circuits.

Recommended fuse blocks/holders:

Catalog symbols	Description	Data sheet No.
Blocks		
BMM	1-, 2- & 3-Pole modular blocks with optional covers	10235
DIN-Rail holders / switches		
CCP-_-30M	1-, 2- & 3-Pole switch	1157
CHM	1-, 2- & 3-Pole	3185
Optima NG	3-Pole protection module	1109
Optima	3-Pole holder	1102
Optima	3-Pole holder + switch	1103
Panel mount holders		
HPM & HPM-D	1-Pole holder	2112
HPC-D	1-Pole holder	2109
HPS2	2-Pole holder	2140
HPF, HPF-C & HPF-WT	1-Pole holder	2114
HPS	1-Pole holder	2113
HPG & HPD	1-Pole holder	2108
In-line holders		
HEB	1-Pole holder	2127
HEX	2-Pole holder	2126
Fuseclips		
1A3400, 5956 and 5960	PCB Fuseclips	2132
Fuse covers		
SAMI-7	Finger-safe fuse cover	1204

Class CC Fuseblocks
600 Volt, 30 Amps

BC
Series

Catalog Symbol: BC Series

Class CC Fuseblocks

For use with Class CC Fuses (Bussmann LP-CC, KTK-R, and FRQ-R)

Ampere Rating: 1/10 to 30A

Voltage Rating: 600V

Withstand Rating: 200,000A RMS Sym.

Agency Information:

UL Listed, UL 512, Guide IZLT, File E14853

CSA Certified, C22.2 No. 39, Class 6225-01, File 47235

UL Flammability: 94VO

Materials: Base - Thermoplastic

Clips - Bright tin-plated bronze

DIN-RAIL Adapters: DRA-1 and DRA-2

Catalog Data

		Terminal Type				
Amps	Poles	Screw	Screw with Quick Connect*	Pressure Plate	Pressure Plate w/ Quick Connect*	Box Lug
1/10	1	BC6031S	BC6031SQ	BC6031P	BC6031PQ	BC6031B
to	2	BC6032S	BC6032SQ	BC6032P	BC6032PQ	BC6032B
30	3	BC6033S	BC6033SQ	BC6033P	BC6033PQ	BC6033B

Wire Range CU Only

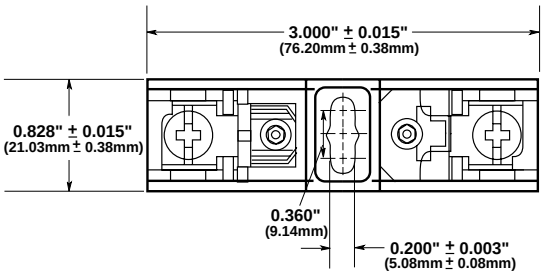
#10-#14 #10-#14 #10-#14 #10-#14 #6-#14

* QUICK CONNECT RATED FOR 20A MAXIMUM.

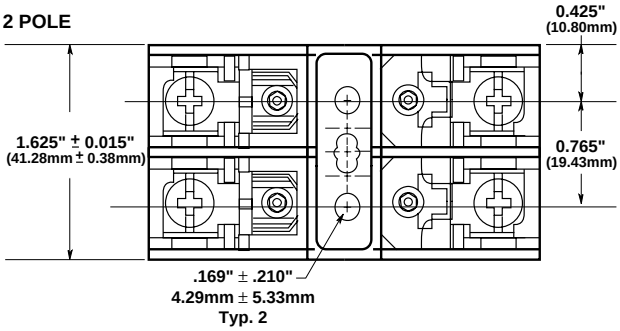
CE logo denotes compliance with European Union Low Voltage Directive (50-1000 Vac, 75-1500 Vdc). Refer to Data Sheet: 8002 or contact Bussmann Application Engineering at 636-527-1270 for more information.

Dimensional Data

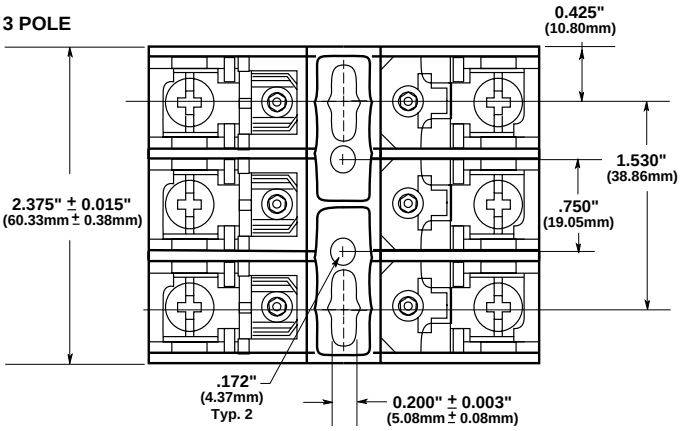
1 POLE



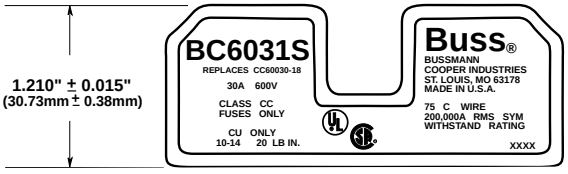
2 POLE



3 POLE

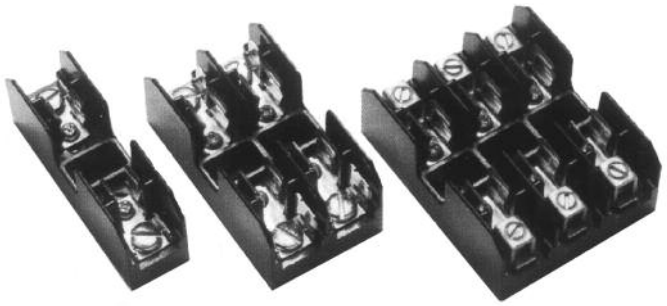


FUSEBLOCK LABEL (EXAMPLE SHOWN)



Supplementary Fuseblocks
Type M, For 13/32″ × 1½″ Fuses
600 Volt AC, 1/10 to 30 Amps

BM Series



Catalog Symbol: BM Series
Type M Supplementary Fuseblocks
Ampere Rating: 1/10 to 30 Amperes
Voltage Rating: 600 Volts AC
Withstand Rating: 10,000 A RMS Sym. or interrupting rating of the fuse used, whichever is lower.
Agency Information:
U.L. Recognized, U.L. 512, Guide IZLT2, File E14853
CSA Certified, C22.2 No. 39, Class 6225-01, File 47235
For use with any 13/32″ × 1½″ Fuses
(Bussmann KTK, FNQ, FNM, BAF, BAN and AGU)
U.L. Flammability: 94 V0
Material: Thermoplastic

Catalog Data (600V)

		Terminal Type			
Amps	Poles	Screw with Quick Connect*	Pressure Plate w/ Quick Connect*	Box Lug	Fig. No.
1/10	1	BM6031SQ	BM6031PQ	BM6031B	1
to	2	BM6032SQ	BM6032PQ	BM6032B	2
30	3	BM6033SQ	BM6033PQ	BM6033B	3

Wire Range CU Only


#10-#18


#10-#18

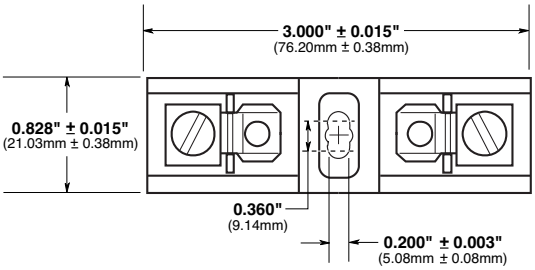

#6-#14

* QUICK CONNECT RATED FOR 20A MAXIMUM.

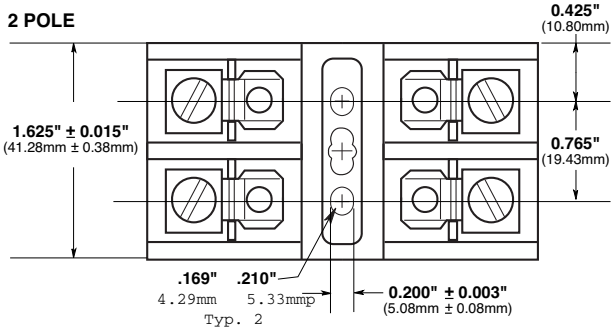
CE logo denotes compliance with European Union Low Voltage Directive (50-1000 Vac, 75-1500 Vdc). Refer to BIF document #8002 or contact Bussmann Application Engineering at 636-527-1270 for more information.

Dimensional Data All dimensions (±0.015)

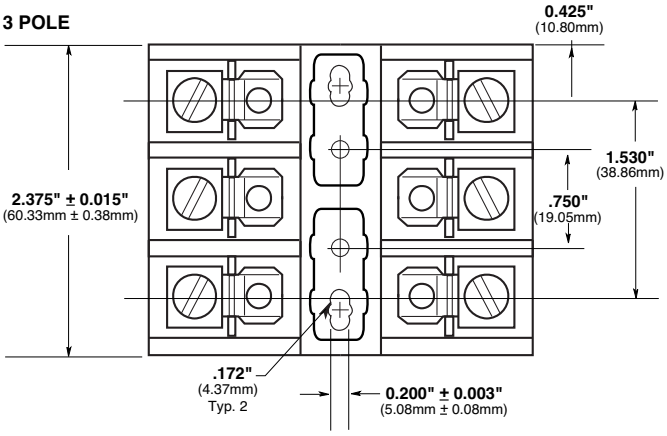
1 POLE



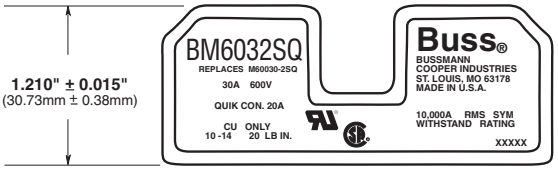
2 POLE



3 POLE



FUSEBLOCK LABEL (EXAMPLE SHOWN)



Product data sheet
Characteristics

9001SKS43B
30MM SELECTOR SWITCH 3 POSITION

Product availability: Stock - Normally stocked in distribution facility

Main

Commercial Status	Commercialised

Ordering and shipping details

Category	21429 - 9001 SK,SKY
Discount Schedule	CS1
GTIN	00785901524373
Nbr. of units in pkg.	1
Package weight(Lbs)	0.12
Product availability	Stock - Normally stocked in distribution facility
Returnability	Y
Country of origin	MX

Offer Sustainability

Sustainable offer status	Not Green Premium product
RoHS	Compliant - since 0921 - Schneider Electric declaration of conformity
REACh	Reference not containing SVHC above the threshold

Contractual warranty

Period	18 months

Product Data Sheet

9001SKS42B

Non-Illuminated Selector Switch Operator, Maintained, Type: SK, Size: 30mm

List Price	$35.10 USD
Availability	**Stock Item: This item is normally stocked in our distribution facility.**

Technical Characteristics

Enclosure Rating	NEMA 1/2/3/3R/4/4X/6/12/13; IP65
Head Type	Round
Knob Color	Black
Knob Type	Standard
Mounting Type	Panel
Mounting Position	All
Number of Operators	1
Number of Positions	3
Operator Type	Maintained
Size	30mm
Type	SK

Shipping and Ordering

Category	21429 - Push Buttons, Corrosion Resistant, Type SK & SKY
Discount Schedule	CP1
Article Number	785901820925
Package Quantity	1
Weight	0.13 lbs.
Availability Code	Stock Item: This item is normally stocked in our distribution facility.
Returnability	Y

As standards, specifications, and designs change from time to time, please ask for confirmation of the information given in this document.

Generated: 06/16/2009 19:43:05

Product Data Sheet

9001SKS88B

Non-Illuminated Selector Switch Operator, Spring Return (From Right)

List Price	$34.50 USD
Availability	**Stock Item: This item is normally stocked in our distribution facility.**

Technical Characteristics

Enclosure Rating	NEMA 1/2/3/3R/4/4X/6/12/13; IP65
Head Type	Round
Knob Type	Standard
Knob Color	Black
Mounting Type	Panel
Mounting Position	All
Number of Operators	1
Number of Positions	4
Operator Type	Spring Return (From Right)
Size	30mm
Type	SK

Shipping and Ordering

Category	21429 - Push Buttons, Corrosion Resistant, Type SK & SKY
Discount Schedule	CP1
Article Number	785901557739
Package Quantity	1
Weight	0.13 lbs.
Availability Code	Stock Item: This item is normally stocked in our distribution facility.
Returnability	Y

As standards, specifications, and designs change from time to time, please ask for confirmation of the information given in this document.

Generated: 06/16/2009 20:21:38

Product Data Sheet

9001KA1

Pushbutton+Selector Switch Contact Block, Type: K, Size: 30mm, 10A, 600V

Technical Characteristics

Approvals	UL File Number E42259 CCN NKCR - CSA File Number LR24590 Class 3211-03 - CE Marked
Type	K
Ampere Rating	10A
Contact Configuration	1 N.O./1 N.C.
Contact Material	Silver Alloy
Maximum Voltage Rating	600V
Size	30mm
Terminal Type	Screw Clamp

Shipping and Ordering

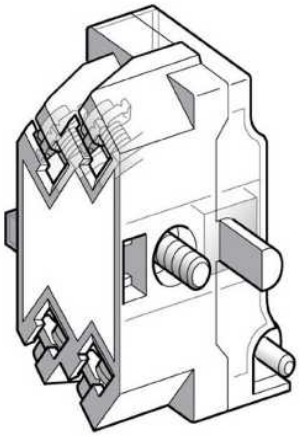
Category	21434 - Blocks, Contact, Type KA
Discount Schedule	CP1
Article Number	785901880004
Package Quantity	1
Weight	0.06 lbs.
Availability Code	Stock Item: This item is normally stocked in our distribution facility.
Returnability	Y

As standards, specifications, and designs change from time to time, please ask for confirmation of the information given in this document.

Generated: 06/22/2009 11:05:24

Product data sheet
Characteristics

9001KA2
contact block with protected terminals - 9001K - 1 NO standard - silver alloy



Main

Range of product	Harmony 9001K
Product or component type	Contact block with protected terminals
Device short name	9001K

Complementary

Terminals description ISO n°1	(1-2)NC
Product weight	0.023 kg
Contacts type and composition	1 NO
Contacts operation	Standard
Positive opening	Without
Connections - terminals	Screw clamp terminals (1 x 0.22...2 x 1.5 mm²) conforming to IEC 60947-1
Tightening torque	0.8 N.m conforming to IEC 60947-1
Shape of screw head	Cross slotted head
Contacts material	Silver alloy contacts
Short circuit protection	10 A cartridge fuse conforming to IEC 60947-5-1
[Ith] conventional free air thermal current	10 A
[Ui] rated insulation voltage	250 V (degree of pollution: 3) conforming to IEC 60947-1
[Uimp] rated impulse withstand voltage	2.5 kV conforming to IEC 60947-1
[Ie] rated operational current	0.55 A at 125 V DC-13, A600-Q600 conforming to NEMA 3 A at 240 V AC-15, A600-Q600 conforming to NEMA
[Icm] rated short-circuit making capacity	<= 0.55 kA at 125 V DC-13, 7200 VA <= 0.27 kA at 250 V DC-13, 7200 VA <= 60 kA at 120 V AC-15, 7200 VA <= 30 kA at 240 V AC-15, 7200 VA <= 15 kA at 480 V AC-15, 7200 VA <= 12 kA at 600 V AC-15, 7200 VA
Rated breaking capacity	<= 1.5 kA at 480 V AC-15, 720 VA <= 1.2 kA at 600 V AC-15, 720 VA <= 0.55 kA at 125 V DC-13 <= 0.27 kA at 250 V DC-13 <= 0.1 kA at 600 V DC-13 <= 6 kA at 120 V AC-15, 720 VA <= 3 kA at 240 V AC-15, 720 VA

Environment

Protective treatment	TC
Ambient air temperature for storage	-40...70 °C
Ambient air temperature for operation	-25...70 °C
Class of protection against electric shock	Class II conforming to IEC 61140
IP degree of protection	IP20 conforming to IEC 60529

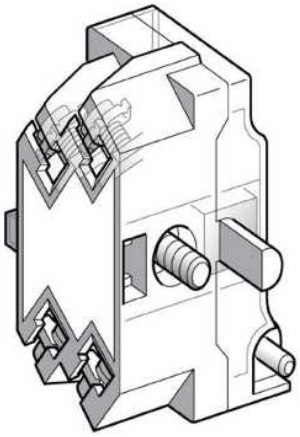
Standards	CSA C22-2 No 14 EN/IEC 60947-1 EN/IEC 60947-5-1 EN/IEC 60947-5-4 JIS C 4520 JIS C 852 UL 508
Product certifications	NEMA UL 508
Vibration resistance	7 gn (f = 2...500 Hz) conforming to IEC 60068-2-6
Shock resistance	50 gn conforming to IEC 60068-2-27

Offer Sustainability

Sustainable offer status	Not Green Premium product
RoHS	Compliant - since 0921 - Schneider Electric declaration of conformity download declaration of conformity

Product data sheet
Characteristics

9001KA3
contact block with protected terminals - 9001K - 1 NC standard - silver alloy



Main

Range of product	Harmony 9001K
Product or component type	Contact block with protected terminals
Device short name	9001K

Complementary

Terminals description ISO n°1	(3-4)NO
Product weight	0.023 kg
Contacts type and composition	1 NC
Contacts operation	Standard
Positive opening	With conforming to IEC 60947-5-2
Connections - terminals	Screw clamp terminals (1 x 0.22...2 x 1.5 mm²) conforming to IEC 60947-1
Tightening torque	0.8 N.m conforming to IEC 60947-1
Shape of screw head	Cross slotted head
Contacts material	Silver alloy contacts
Short circuit protection	10 A cartridge fuse conforming to IEC 60947-5-1
[Ith] conventional free air thermal current	10 A
[Ui] rated insulation voltage	250 V (degree of pollution: 3) conforming to IEC 60947-1
[Uimp] rated impulse withstand voltage	2.5 kV conforming to IEC 60947-1
[Ie] rated operational current	0.55 A at 125 V DC-13, A600-Q600 conforming to NEMA 3 A at 240 V AC-15, A600-Q600 conforming to NEMA
[Icm] rated short-circuit making capacity	<= 0.55 kA at 125 V DC-13 <= 0.27 kA at 250 V DC-13 <= 60 kA at 120 V AC-15, 7200 VA <= 30 kA at 240 V AC-15, 7200 VA <= 15 kA at 480 V AC-15, 7200 VA <= 12 kA at 600 V AC-15, 7200 VA
Rated breaking capacity	<= 1.5 kA at 480 V AC-15, 720 VA <= 1.2 kA at 600 V AC-15, 720 VA <= 0.55 kA at 125 V DC-13 <= 0.27 kA at 250 V DC-13 <= 0.1 kA at 600 V DC-13 <= 6 kA at 120 V AC-15, 720 VA <= 3 kA at 240 V AC-15, 720 VA

Environment

Protective treatment	TC
Ambient air temperature for storage	-40...70 °C
Ambient air temperature for operation	-25...70 °C
Class of protection against electric shock	Class II conforming to IEC 61140
IP degree of protection	IP20 conforming to IEC 60529

Standards	CSA C22-2 No 14 EN/IEC 60947-1 EN/IEC 60947-5-1 EN/IEC 60947-5-4 JIS C 4520 JIS C 852 UL 508
Product certifications	NEMA UL 508
Vibration resistance	7 gn (f = 2...500 Hz) conforming to IEC 60068-2-6
Shock resistance	50 gn conforming to IEC 60068-2-27

Offer Sustainability

Sustainable offer status	Not Green Premium product
RoHS	Compliant - since 0921 - Schneider Electric declaration of conformity download declaration of conformity

Product data sheet
Characteristics

9001SKR1B
PUSHBUTTON OPERATOR 30MM SK +OPTIONS

Product availability: Stock - Normally stocked in distribution facility

Main

Commercial Status	Commercialised

Ordering and shipping details

Category	21429 - 9001 SK,SKY
Discount Schedule	CS1
GTIN	00785901793878
Nbr. of units in pkg.	1
Package weight(Lbs)	0.10
Product availability	Stock - Normally stocked in distribution facility
Returnability	Y
Country of origin	MX

Offer Sustainability

Sustainable offer status	Not Green Premium product
RoHS	Compliant - since 0921 - Schneider Electric declaration of conformity
REACh	Reference not containing SVHC above the threshold

Contractual warranty

Period	18 months

9001SKT1R31

Pilot Light , Push-To-Test, Type: SK, Size: 30mm

Technical Characteristics

Bezel Material	Plastic
Approvals	UL Listed File Number E42259 CCN NKCR - CSA Certified File Number LR25490 Class 3211 03 - CE Marked
Catalog Reference Number	9001CT0001
Enclosure Type	Water tight, Dust tight, Oil tight and Corrosion Resistant (Indoor/Outdoor)
Enclosure Rating	NEMA 4/4X/13
Head Type	Round
Lens Color	Red
Lens Type	Plastic (Fresnel)
Light Module Supply Voltage	110/120VAC@50/60Hz
Light Module Type	Transformer
Mounting Type	Panel
Mounting Position	All
Operator Type	Push-To-Test
Terminal Type	Screw Clamp
Size	30mm
Type	SK

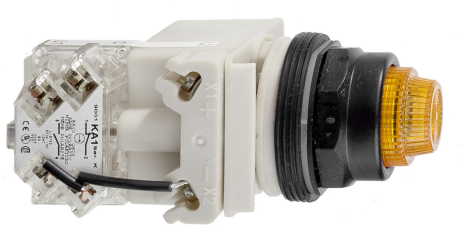
Shipping and Ordering

Category	21429 - Push Buttons, Corrosion Resistant, Type SK & SKY
Discount Schedule	CP1
Article Number	785901044420
Package Quantity	1
Weight	0.45 lbs.
Availability Code	Stock Item: This item is normally stocked in our distribution facility.
Returnability	Y

As standards, specifications, and designs change from time to time, please ask for confirmation of the information given in this document.

Product data sheet
Characteristics

9001SKT1A31
PILOT LIGHT 120VAC 30MM SK +OPTIONS



Main

Approvals	UL Listed File Number E42259 CCN NKCR - CSA Certified File Number LR25490 Class 3211 03 - CE Marked
Bezel Material	Plastic
Enclosure Rating	NEMA 4/4X/13
Enclosure Type	Water tight, Dust tight, Oil tight and Corrosion Resistant (Indoor/Outdoor)
Head Type	Round
Lens Color	Amber
Lens Type	Plastic (Fresnel)
Light Module Supply Voltage	110/120VAC@50/60Hz
Light Module Type	Transformer
Mounting Position	All
Mounting Type	Panel
Operator Type	Push-To-Test
Size	30mm
Terminal Type	Screw Clamp
Type	SK

Item # T50B2 T50 Quartz AC Hour Meter II.

T50 Quartz AC Hour Meter II.
T50 Quartz AC Hour Meter

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	2.80 Inch
Face Dia - Cutout	2 Inch
Weight	2 oz.
Mounting Style	3-Hole Panel
Power	Less than 0.4 W

Streamline® Low Profile Strobe Light

Models LP3S, LP3E, LP3M

PERFECT SIZE MEETS SUPERIOR PERFORMANCE

- LP3S and LP3M are available in 12-48VDC, 120VAC and 240VAC; LP3E in 120VAC
- Surface mount, Edison mount, or integrated 1/2-inch NPT pipe mount
- Five dome colors
- Screw-on lens provides easy access
- Low profile — Model LP3S is only 5" high
- Type 4X, IP66 enclosure
- PLC and triac compatible
- UL and cUL Listed, CSA Certified and CE Approved*

* CE Approval for S and M models only.

Model LP3 is a low profile strobe light. This Type 4X strobe is available in five colors: Amber, Blue, Clear, Green and Red.

The LP3 is offered in three mounting configurations. The LP3S features a three-hole surface mount — ideal for control panels and other flat or flush surfaces. The LP3E features a standard A-19 medium Edison screw-in base. The LP3M features a 1/2" NPT male pipe mount and 18" wire leads.

Both the LP3S and LP3M include a surface gasket to completethe Type 4X installation. An optional dome guard is available for use with the LP3M when installed flush with a panel. All LP3 units feature a unique threaded screw-on lens to allow for tool free wiring and strobe tube replacement. The strobe tube is rated for 7,000 hours.

LP3 comes in three voltage variations: 12-48VDC, 120VAC and 240VAC. The state-of-the-art strobe mechanism produces 2.2 joules of energy, while drawing relatively low amperage.

StreamLine® strobes feature high-quality, long-life strobe tubes which are designed to reduce tungsten build-up for longer lamp maintenance cycles. Careful consideration is given to the relationship between tube shape and lens design for maximum light output. StreamLine products make use of surface mount technology, which provides a more powerful light in a much smaller package. The high-quality dry-electrolyte capacitor used in StreamLine products runs cooler than those used in many competitive strobes, resulting in a more reliable product that won't fail due to overheating.

Model	Voltage	Operating Current	Flash Rate/ Minute	Candela Peak[1]	Candela ECP[2]
LP3*-012/048**	12-48VDC	0.44-0.10 amps	65-95	175,000	51.5
LP3*-120**	120VAC	0.10 amps	65-95	175,000	51.5
LP3*-240**	240VAC	0.07 amps	65-95	175,000	51.5

* Indicates Mounting Style: (S) Surface Mount, (E) Edison A-19 Screw-in Base or (M) Male Pipe Mount

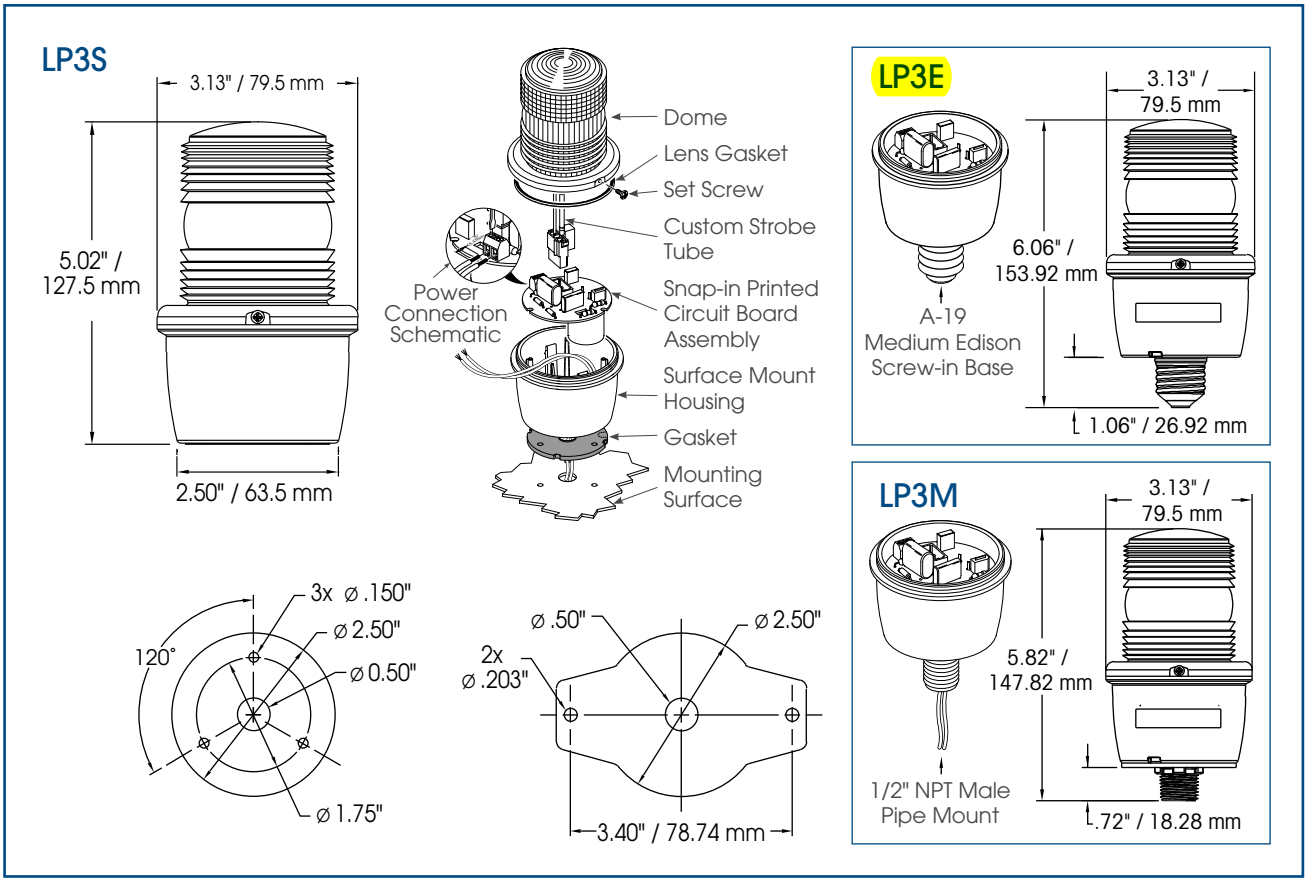
** Indicates color: (A) Amber, (B) Blue, (C) Clear, (G) Green or (R) Red

[1] Peak candela is the maximum light intensity generated by a flashing light during its light pulse

[2] ECP (Effective Candela) is the intensity that would appear to an observer if the light were burning steadily

5 yr FEDERAL SIGNAL WARRANTY

STREAMLINE® LOW PROFILE STROBE LIGHT (LP3S/LP3E/LP3M)



SPECIFICATIONS

Lamp Life:	7,000 Hours	7,000 Hours
Light Source:	Strobe tube	Strobe tube
Operating Temperature:	-31°F to 150°F	-35°C to 66°C
Net Weight:	7.3 oz.	206.96 g
Shipping Weight:	8.5 oz.	240.98 g
Diameter:	3.125"	79.5 mm
Height (from bottom):		
LP3S	5.0"	127.5 mm
LP3E	6.1"	154 mm
LP3M	5.8"	147.8 mm

HOW TO ORDER

- Specify model, voltage and color
- Optional Accessories: Wire/Dome Guard (LP3G) for LP3S and LP3M

REPLACEMENT PARTS

Description	***Part Number***
Lens, Amber	K8589063A
Lens, Blue	K8589063A-01
Lens, Clear	K8589063A-02
Lens, Green	K8589063A-03
Gasket Kit [1]	K8589013A

[1] Includes gasket for LP3P, LP3S, and LP3T

2645 Federal Signal Dr., University Park, IL 60484 Tel: 708.534.4756 Fax: 708.534.4852 www.federalsignal-indust.com

Vibratone® Horns

Model 350

Model 350 Vibratone Horn produces a very loud horn tone by the electro-mechanical vibration of a diaphragm. Capable of reproducing coded blasts or sustained tones through the use of a number of control devices from a push button to a PLC. Federal Signal's Vibratone horn is excellent for general alarm, start and dismissal, coded paging, and process control signaling in areas of high ambient noise levels.

The Vibratone Model 350 is available in AC voltages; 12VAC, 24VAC, 120VAC and 240VAC. This model produces 100dBA @ 10', except for the 12VAC model which produces 94dBA @ 10'.

Vibratone mounting options provide for surface, flush or semi-flush mounting on walls, panels, in cabinets, on 4-inch square outlet boxes, or in concrete and deep wall constructions.

A Double Projector accessory (Model PR2) mounted on the front of the unit directs side sound output, optimizing signaling for long, narrow rooms or corridors.

Vibratone 350 horns are UL and cUL Listed, CSA Certified and FM Approved. They are designed and approved for use in Type 4X applications when installed with the Panel Mount Gasket Kit or Weatherproof Backbox (Model WB). They are approved for Type 4X and Type 12 applications when installed with the Surface Mount Trim Ring

The Vibratone 350 horn is enclosed in a zinc die-cast housing and sealed with grey powder-coat paint and features a stainless steel diaphragm. The rugged construction of the Vibratone horn resists vandalism and the effects of harsh industrial environments.

Compact size, loud output and heavy-duty construction make the 350 horn ideal for industrial and institutional signaling applications.

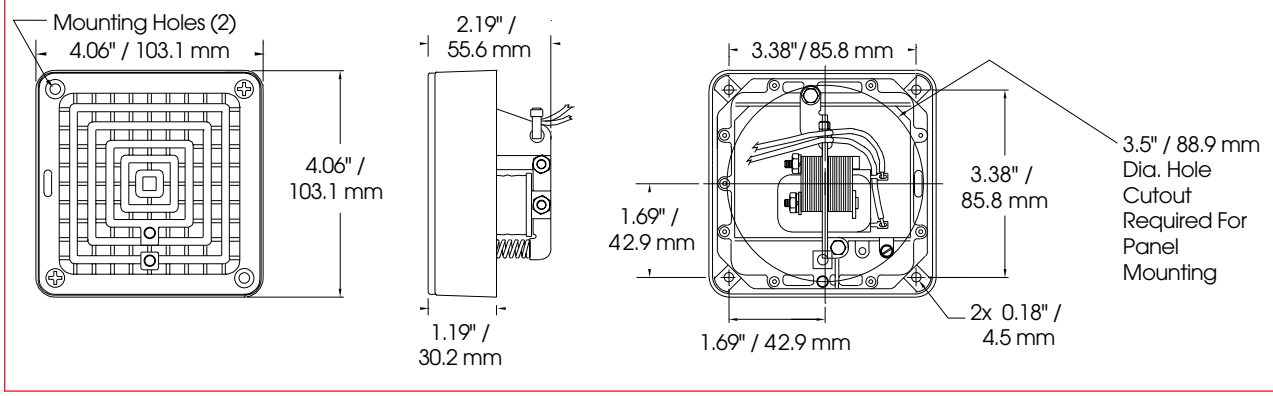
DESIGNED FOR ROUTINE SIGNALING

- Range of up to 200 feet
- Coded or sustained tones
- Available in – 12, 24, 120 and 240VAC
- Produces 100dBA at 10'
- Type 4X when installed with Panel Mount Gasket Kit or Weatherproof Backbox (Model WB); Type 4X and Type 12 when installed with Surface Mount Trim Ring (Model TR)
- UL and cUL Listed, CSA Certified and FM Approved

Model	Voltage	Operating Current	Decibels @ 10'	Decibels @ 1m
350-012-30	12VAC 50/60Hz	0.90 amps	94	104
350-024-30	24VAC 50/60Hz	0.90 amps	100	110
350-120-30	120VAC 50/60Hz	0.18 amps	100	110
350-240-30	240VAC 50/60Hz	0.09 amps	100	110

5 yr FEDERAL SIGNAL WARRANTY

VIBRATONE® HORN (350)



SPECIFICATIONS

Operating Temperature:	-65°F to 150°F	-54°C to 66°C
Net Weight:	1.4 lbs.	0.6 kg
Shipping Weight:	1.5 lbs.	0.7 kg
Height:	4.06"	103.1 mm
Width:	4.06"	103.1 mm
Depth:	2.19"	55.6 mm

HOW TO ORDER

- Specify model and voltage
- Specify accessories from list

ACCESSORIES

FB Wall box for flush mounting the Vibratone® horn in stud, 4" block, or other shallow wall construction; $4\frac{3}{8}$" square box; $2\frac{7}{8}$" deep; shipping weight 2 lbs. (0.91 kg)

FBL Same as FB, but $3\frac{13}{16}$" deep for 6" x 8" concrete block, cinder block or other deep wall construction; shipping wt. 3 lbs. (1.36 kg)

FG Flush grille which attaches to the basic unit and serves as the cover of the plastered-in FB flush box; 6" H x 6" W x $\frac{1}{8}$" D; shipping wt. 1 lb. (0.45 kg)

K8435666A Optional Panel Mounting Gasket Kit includes a gasket and hardware for surface or flush mounting the horn for NEMA Type 4X applications.

PR2 Double projector directs sounds to both sides when attached to the basic model units; ideal for use in hallways; 4" H x $11\frac{1}{2}$" W x 4" D; shipping weight 2 lbs. (0,91 kg)

SF Stamped surface plate used for installations on plastered-in 4" outlet switch boxes for semi-flush mountings; 6"H x 6" W x $\frac{1}{2}$" D; shipping weight 1 lb. (0.45 kg)

TR Gasketed trim ring allowing surface mount installations of unit while maintaining Type12 and Type 4X rating of enclosure.

WB Cast aluminum neoprene-gasketed weatherproof housing for outside use, complete with mounting lugs; tapped for $\frac{1}{2}$", $\frac{3}{4}$" conduit; $4\frac{3}{8}$" square box; 2" deep mounting lugs on $4\frac{1}{2}$" centers; shipping weight 1 lb. (0.45 kg)

REPLACEMENT PARTS

Description	***Part Number***
Panel Mount Gasket Kit	K8435666A
Volume Control Kit	K8435663B
Coil, 120VAC	KFC1516C

THE REYNOLDS COMPANY
ELECTRICAL SUPPLY

Allen-Bradley 1492-REC20G

Allen-Bradley 1492 Series GFCI Receptacle, 5-20R, 125 VAC, 20 A, Gray

MPN: 1492-REC20G

TRC Part#: ALBR1492REC20G

UPC: 61259882059

Min Order Quantity: 1

Quantity Interval: 1

DESCRIPTIONS

GFCI Receptacle, Type: 1492 Series, Voltage Rating: 125 VAC At 50/60 HZ, Amperage Rating: 20 A, NEMA Configuration: 5-20R, Wire Size: 20 - 10 AWG, Color: Gray, Enclosure: NEMA WD6, Mounting: DIN-Rail, Size: 4.9 IN Height X 2.9 IN Length, Environmental Conditions: Storage Temperature: -35 To 80 DEG C, Temperature Rating: -25 To 60 DEG C, Torque Rating: 7 LB-IN, Short-Circuit Current Rating: 10000 A, Trip Level: 5 Plus/Minus 1 MA

SPECIFICATIONS

Item Name: GFCI Receptacle

Type: 1492 Series

Voltage Rating: 125 VAC At 50/60 HZ

Amperage Rating: 20 A

NEMA Configuration: 5-20R

Wire Size: 20 - 10 AWG

Color: Gray

Enclosure: NEMA WD6

Mounting: DIN-Rail

Size: 4.9 IN Height X 2.9 IN Length

Environmental Conditions: Storage Temperature: -35 To 80 DEG C

Temperature Rating: -25 To 60 DEG C

Short-Circuit Current Rating: 10000 A

Trip Level: 5 Plus/Minus 1 MA

TECHNICAL DATA

Technical data

Xylem Flygt MiniCAS II is a supervision relay for temperature and leakage sensors. It is designed for the 3000 series pumps up to model 3301 and for the mixer program.

A number of condition monitoring sensors are available for the Xylem FLYGT pump range.

- **Thermal switches** for stator overtemperature.
- **CLS** for water in oil detection.
- **FLS** for detection of liquid in the stator housing.
- **FLS10** for detection of liquid in the inspection chamber in the new midrange pump series, eg 3153, 3171, 3202 and 3301.

The sensors can be used in any desired combination.

For "Ex" certified pumps only combinations involving thermal switches, FLS and FLS10 may be used.

On the front, there are three indication lamps, one for supply, one for temperature alarm and one for leakage alarm. For the communication between the pump and the MiniCAS II, only two wires are needed. The MiniCAS II is designed to be connected to a standard 11-pin socket.

MiniCAS II is interchangeable with the original version of MiniCAS.

Operational principle:	Current Sensing
Approvals:	CE, C-UR (covering USA and Canada) and CSA
Environment:	-25 to +60°C. maximum 90% relative humidity
Supply voltage 24 VAC/DC:	24 VAC, -17% –+25% (50-60Hz) 24 VDC, -2% –+25%
Supply voltage 120 VAC:	120 VAC, -15% –+15% (50-60 Hz)
Supply voltage 230 VAC:	230 VAC, -15% –+15% (50-60 Hz)
Relay contact rating:	250 VAC / 5A
Voltage to sensor:	12 V DC +/–5%
Values of operation:	3 mA < I < 22 mA = OK condition I < 3 mA = High Temperature (or interruption) I > 22 mA = Leakage (or short circuit), delay 10 sec. (I = current measured by MiniCAS II)
Power supply required:	5 VA

OPERATION

Leakage:	Changeover contacts	11–8 Normally closed for Interlock 11–9 Normally open, closes for Alarm
	Automatic reset	
	Red LED for indication – follows the relay	
	Red indication lamp on:	Leakage

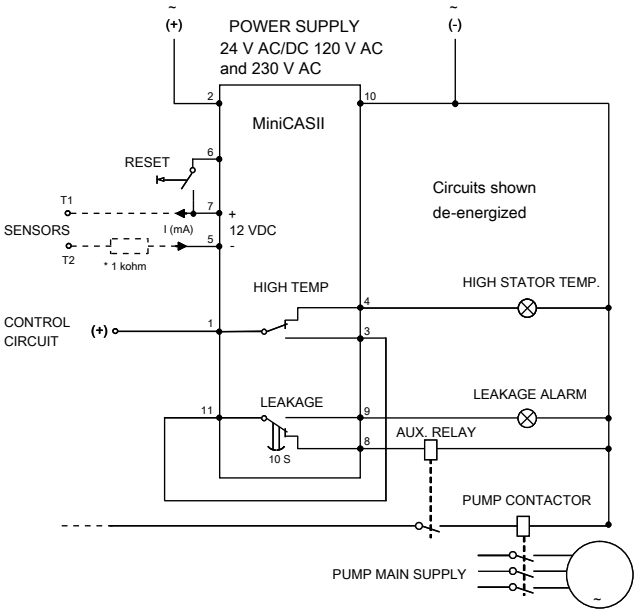
	Red indication lamp off:	No leakage
Temperature:	Changeover contacts	1–3 Normally open, closes for Interlock 1–4 Normally closed for Alarm
	Manual reset (see below)	
	Red Indication lamp on:	Overtemperature
	Red Indication lamp off:	Normal temperature
Reset of temperature alarm:	External reset is possible either by connecting terminals 6 - 7 with an external push button or by interrupting the supply voltage. Note, in the 24 V version, Reset is also possible between 6-2.	
Supply:	Yellow indication lamp on:	Supply on
	Yellow indication lamp off:	Supply off
DIMENSIONS (WxHxD)	33 mm x 79 mm x 75 mm	
PART NOS:	83 58 57 (24 VAC/DC) 40 501098 (120 VAC) 40 501560 (230 VAC)	

CONNECTIONS

Leakage alarm will stop the pump

This installation can be used if the leakage alarm shall stop the pump.

It is recommended if the FLS sensor is used. The FLS is detecting liquid in the stator housing, which is critical and requires a quick stop of the pump.



*) Fit resistor to avoid short circuit if only thermal contacts are

Figure 1

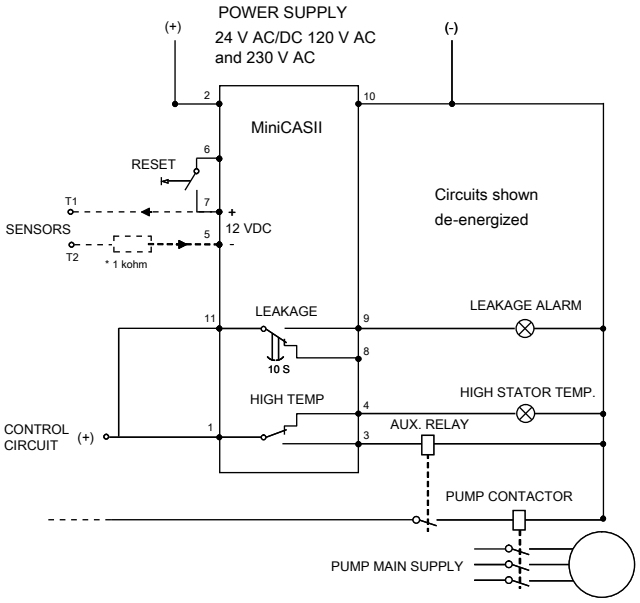
Note, in the 24 V version RESET is also possible between 6-2.

Leakage alarm will not stop the pump (only warning)

This installation can be used if the leakage alarm shall not stop the pump but give a warning on the MiniCASII.

It is recommended if FLS10 in inspection chamber or CLS is used. These sensors detect liquid in the inspection chamber (FLS10) and water in the oil (CLS), which is less critical than water in the stator housing.

FLS10 is used in the new midrange pump series, eg 3153, 3171, 3202 and 3301.



*) Fit resistor to avoid short circuit if only thermal contacts are

Figure 2

RJ Series — General Purpose Relays

RJ relays, the newest addition to our relay family, were designed with the same attention-to-detail IDEC is known for. One feature that exemplifies this is an optional LED. It uses a unique light guide to give you a brighter and more noticeable status indicator from multiple directions.

Key features of the RJ series include:

- **Compact size: 12.7 x 27 x 28.8 mm**
- **Contact rating: 8A (DPDT), 12A (SPDT)**
- **Operational life:**
  200K cycles at full resistive load
  50 million cycles, no load
- **Optional, green, non-polarized LED**
- **RoHS compliant**

UL Recognized
File No. E555996, Vol 1, sec. 11

CSA Certified
File No. LR35144

HOUSE MARK

E Relays

Specifications

		RJ1S	RJ2S
No. of poles		1	2
Contact Configuration		SPDT	DPDT
Contact Rating		12A	8A
Contact Material		Silver-Nickel alloy	
Contact Resistance		50 milliohms max	
Operating Time		15 ms max	
Release Time		10 ms max	
Dielectric Strength	Between contact and coil	5,000VAC, 1 minute	
	Between contacts	1,000VAC, 1 minute	
Vibration Resistance	Damage limits	10-55Hz, amplitude 0.75mm	
	Operating extremes	10-55Hz, amplitude 0.75mm	
Shock Resistance	Damage limits	100m/s^2 min (10G)	
	Operating extremes	1,000m/s^2 min (100G)	
Mechanical Life	AC	30,000,000 operations	
	DC	50,000,000 operations	
Electrical Life @ Full Rated Load	AC	200,000 operations	
	DC	100,000 operations	
Operating Temperature		-40 to 70º C	
Operating Humidity		5 to 85% RH	
Dimensions (H x W x D mm)		12.7 x 27 x 28.8	
Weight (Approx.)		19g	

Ordering Information

Consult factory for other voltages.

Basic Part No. **Coil Voltage:**

RJ ☐ S – C ☐ – ☐

# of Contacts
1 = SPDT
2 = DPDT

Option
(Blank) = Standard
L = LED

Coil Voltage Code
D12 = 12V DC
D24 = 24V DC
D100 = 100-110V DC
A24 = 24V AC
A120 = 120V AC
A240 = 240V AC

GE1A Series Electronic Timers

Four different time ranges to cover a wide time range

- Large clear knob for easy time range setting
- ON Delay function
- Highly precise time control
- Instant monitoring of operation status by LED indicators.

Contact Ratings

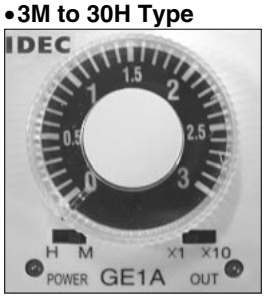
Contact Ratings	240V AC/5A, 24V DC/5A (resistive load)
Electrical Life	100,000 operations minimum
Mechanical Life	5,000,000 operations minimum

•1S to 10M Type

•3S to 30M Type

•1M to 10H Type

•3M to 30H Type



Time Ranges

Code	Magnification	Time Range
10M	× 1S	0.1 sec to 1 sec
	× 10S	1 sec to 10 sec
	× 1M	0.1 min to 1 min
	× 10M	1 min to 10 min
30M	× 1S	0.3 sec to 3 sec
	× 10S	3 sec to 30 sec
	× 1M	0.3 min to 3 min
	× 10M	3 min to 30 min
10H	× 1M	0.1 min to 1 min
	× 10M	1 min to 10 min
	× 1H	0.1 hour to 1 hour
	× 10H	1 hour to 10 hours
30H	× 1M	0.3 min to 3 min
	× 10M	3 min to 30 min
	× 1H	0.3 hour to 3 hours
	× 10H	3 hours to 30 hours

Types

Time Range	Rated Voltage	Type No.	
		Contact	
		Delayed SPDT + Instantaneous SPDT	Delayed DPDT
1S to 10M (1 sec to 10 min)	220 to 240V AC	GE1A-B10MA220	GE1A-C10MA220
	200 to 220V AC	GE1A-B10MA200	GE1A-C10MA200
	120 to 110V AC	GE1A-B10MA110	GE1A-C10MA110
	100 to 110V AC	GE1A-B10MA100	GE1A-C10MA100
	24V AC/DC	GE1A-B10MAD24	GE1A-C10MAD24
3S to 30M (3 sec to 30 min)	220 to 240V AC	GE1A-B30MA220	GE1A-C30MA220
	200 to 220V AC	GE1A-B30MA200	GE1A-C30MA200
	120 to 110V AC	GE1A-B30MA110	GE1A-C30MA110
	100 to 110V AC	GE1A-B30MA100	GE1A-C30MA100
	24V AC/DC	GE1A-B30MAD24	GE1A-C30MAD24
1M to 10H (1 min to 10 hours)	220 to 240V AC	GE1A-B10HA220	GE1A-C10HA220
	200 to 220V AC	GE1A-B10HA200	GE1A-C10HA200
	120 to 110V AC	GE1A-B10HA110	GE1A-C10HA110
	100 to 110V AC	GE1A-B10HA100	GE1A-C10HA100
	24V AC/DC	GE1A-B10HAD24	GE1A-C10HAD24
3M to 30H (3 min to 30 hours)	220 to 240V AC	GE1A-B30HA220	GE1A-C30HA220
	200 to 220V AC	GE1A-B30HA200	GE1A-C30HA200
	120 to 110V AC	GE1A-B30HA110	GE1A-C30HA110
	100 to 110V AC	GE1A-B30HA100	GE1A-C30HA100
	24V AC/DC	GE1A-B30HAD24	GE1A-C30HAD24

SDN-P DIN Rail Series

The SDN DIN Rail power supplies provide industry leading performance. Sag Immunity, transient suppression and noise tolerant, the SDN series ensures compatibility in demanding applications. Power factor correction to meet European directives, hazardous location approvals and optional redundant accessories allow the SDN series to be used in a wide variety of applications. Wide operation temperature range, high tolerance to shock and vibration and reliable design make the SDN series the preferred choice of users everywhere.

UL 508 Listed
IND. CONT. EQ.
E61379

UL 60950
E137632
CUL/CSA-C22.2
No. 234-M90

EMC and
Low Volt.
Directive

Features

- Power Factor Correction (per EN61000-3-2)
- Auto Select 115/230 Vac, 50/60 Hz Input
- Single Phase models meet SEMI F47 Sag Immunity
- Class 1, Zone 2 Hazardous Locations
  - ATEX approval on 2.5 through 10A, 24 Vdc Single Phase Models
  - ATEX approval pending on 12 Vdc and 48 Vdc single phase models
- Improved metal mounting clip
- DC OK Signal
- Adjustable Voltage
- SDN10-24-100P New Compact width (3.26")
- Parallel Capability standard on all units
- Industrial grade design
  - -10°C to 60°C operation without derating. Indefinite short circuit, overvoltage and overtemperature protection.
  - Powers high inrush loads without shutdown or foldback
  - Rugged metal case and DIN connector
- SDN2.5-24-100P and SDN4-24-100LP meet NEC Class 2
- Narrow width on rail for space critical applications
- User-friendly front panel
  - Large, rugged, accessible, multiple connection screw terminations
  - Easy installation
- Broad range of product to fit almost any application – 2.5 A through 40 A, 24 Vdc
- Single and three phase inputs available
- 12 Vdc and 48 Vdc single phase models available NEW
- Highly efficient >90% switching technology
- High MTBF and reliability
- RoHS compliant

Related Products

- SDP™ Series
- SFL Series
- SCP Series
- SCL Series
- SDU UPS

Applications

- Industrial/Machine Control
- Process Control
- Conveying Equipment
- Material Handling
- Vending Machines
- Packaging Equipment
- DeviceNet™
- Amusement Park Equipment
- Semiconductor Fabrication Equipment

Accessories

- Chassis Mount Bracket (SDN-PMBRK2)

SDN™ Specifications (Single Phase), 24 Vdc Output

CE Ex II 3G DEMKO 06 ATEX 05 21715U

Description	Catalog Number				
	SDN 2.5–24–100P	SDN 4–24–100LP	SDN 5–24–100P	SDN 10–24–100P	SDN 20–24–100P
Input					
Nominal Voltage	115/230 Vac auto select				
–AC Range	85-132/176-264 Vac				
–DC Range[1]	90-375 Vdc	210-375 Vdc			N/A
–Frequency	47 - 63 Hz				
Nominal Current[2]	1.3 A. / 0.7 A	2.1 A / 1.0 A	2.2 A / 1.0 A	5 A / 2 A typ.	9 A/ 3.9 A
–Inrush current max.	typ. < 25 A	typ. < 20 A		typ. < 40 A	
Efficiency (Losses[3])	> 87.5% typ. (8.6 W)	> 88% typ. (13.1 W)	> 88% typ. (16.4 W)	> 88% typ. (32.7 W)	> 90% typ. (48 W)
Power Factor Correction	Units Fulfill EN61000-3-2				
Output					
Nominal Voltage	24 Vdc (22.5 - 28.5 Vdc adj.)	24 Vdc (22.5 - 25.5 Vdc adj.)	24 Vdc (22.5 - 28.5 Vdc adj.)		
–Tolerance	< ±2% overall (combination Line, load, time and temperature related changes)				
–Ripple[4]	< 50 mVpp				
Overvoltage Protection	> 30 Vdc, but < 33 Vdc, auto recovery				
Nominal Current	2.5 A (60 W)	3.8 A (92 W)	5 A (120 W)	10 A (240 W)	20 A (480 W)
–Current Limit	Fold Forward (Current rises, voltage drops to maintain constant power during overload up to max peak current)				
Holdup Time[5]	> 50 ms	> 100 ms	> 100 ms		> 100 ms
Parallel Operation	Single or Parallel use is selectable via Front Panel Switch (SDN 2.5, 4 should not be used in parallel as Class 2 rating would be violated.)				
General					
EMC: –Emissions	EN61000-6-3, -4; Class B EN55011, EN55022 Radiated and Conducted including Annex A.				
–Immunity	EN61000-6-1, -2; EN61000-4-2 Level 4, EN61000-4-3 Level 3; EN61000-4-6 Level 3; EN61000-4-4 Level 4 input and Level 3 output; EN61000-4-5 Isolation Class 4, EN61000-4-11;				
Approvals	EN60950; UL508 Listed, cULus; UL60950, cRUus, CE (LVD 73/23 & 93/68/EEC). EN61000-3-2, IEC60079-15 (Class 1, Zone 2, Hazardous Location, Groups A, B, C, D w/ T3A temp class up to 60°C Ambient.) SEMI F47 Sag Immunity. SDN 2.5 & SDN 4 - UL60950 testing to include approval as Class 2 power supply in accordance with UL1310.				
Temperature	Storage: -25°C...+85°C Operation. -10°-60°C full power with operation to 70°C possible with a linear derating to half power from 60°C to 70°C (Convection cooling, no forced air required). Operation up to 50% load permissible with sideways or front side up mounting orientation. The relative humidity is < 90% RH, noncondensing; IEC 68-2-2, 68-2-3.				
Humidity					
MTBF:	> 820,000 hours	> 640,000 hours		> 600,000 hours	> 510,000 hours
– Standard	Bellcore Issue 6 Method 1 Case 3 @ 40°C				MIL STD 217F @ 30°C
Warranty	5 years				
General Protection/ Safety	Protected against continuous short-circuit, overload, open-circuit. Protection Class 1 (IEC536), degree of protection IP20 (IEC 529) Safe low voltage: SELV (acc. EN60950)				
Status Indicators	Green LED and DC OK signal (N.O. Solid State Contact rated 200 mA / 60 Vdc)				
Installation					
Fusing –Input	Internally fused. External 10 A slow acting fusing for the input is recommended to protect input wiring.				
–Output	Outputs are capable of providing high currents for short periods of time for inductive load startup or switching. Fusing may be required for wire/loads if 2x Nominal O/P current rating cannot be tolerated. Continuous current overload allows for reliable fuse tripping.				
Mounting	Simple snap-on system for DIN Rail TS35/7.5 or TS35/15 or chassis-mounted (optional screw mounting set SDN-PMBRK2 required).				
Connections	**Input:** IP20-rated screw terminals, connector size range: 16-10 AWG (1.5-6 mm^2) for solid conductors. 16-12 AWG (0.5-4 mm^2) for flexible conductors. **Output:** Two connectors per output, connector size range: 16-10 AWG (1.5 - 6 mm^2) for solid conductors.				
Case	Fully enclosed metal housing with fine ventilation grid to keep out small parts.				
–Free Space	25 mm above and below, 25 mm left and right, 10 mm in front		25 mm above and below, 25 mm left and right, 15 mm in front	70 mm above and below, 25 mm left and right, 15 mm in front	
H x W x D (inches/mm)	4.88. x 1.97 x 4.55 (124 x 50 x 116)	4.88 x 2.56 x 4.55 (124 x 65 x 116)		4.88 x 3.26 x 4.55 (124 x 83 x 116)	4.88 x 6.88 x 4.55 (124 x 175 x 116)
Weight (lbs/kg)	1 lbs (.45 kg)	1.5 lbs (.68 kg)		2.2 lbs (0.1 kg)	3 lbs (1.36 kg)

1. Not UL listed for DC input.
2. Input current ratings are conservatively specified with low input, worst case efficiency and power factor.
3. Losses are heat dissipation in watts at full load, nominal input line.
4. Ripple/noise is stated as typical values when measured with a 20 MHz, bandwidth scope and 50 Ohm resistor.
5. Full load, 100 Vac Input @ T_{amb} = +25°C

MPDB Series Open-Style Power Distribution Blocks

The Next Generation Power Distribution Block (PDB)

Mersen power distribution blocks provide a safe and easy method of splicing cables, splitting primary power into secondary circuits and fulfilling requirements for fixed junction tap-off points. All blocks are UL and CSA approved while meeting spacing requirements for feeder and branch circuits in conjunction with UL508A and the National Electrical Code®. PDB options include single or dual conductor primary inputs and up to 30 secondary outputs. Specialty blocks are available allowing for up to 7 primary inputs. The MPDB series is offered in three size categories: miniature (MPDB62 and MPDB63 series), intermediate (MPDB66 and MPDB67 series), and large (MPDB68 and MPDB69 series), in both aluminum and copper.

Features/Benefits:

- **Adder Poles**
  All sizes have optional adder poles for increased flexibility and ease-of-use. Adder poles can be stacked to form multi-pole units in the field without the use of tools. Adder poles allow for customization of primary and secondary wire combinations. End barriers are also available for sale, catalog numbers can be found in the catalog number selection tables for each size block.
- **Wire Connectors**
  Standard aluminum and copper wire connectors are available. Aluminum connectors accept both AL or CU wire while copper connectors accept CU wire only. Connectors are all 1-piece tin-plated.
- **Insulators**
  Insulators are virtually unbreakable, made of glass-filled polycarbonate. “See-through,” hinged safety covers are optional and provide a greater degree of safety and shock resistance where required. Hinged covers can be installed without tools.
- **Spacings**
  1 inch through air and 2 inches over surface between uninsulated live parts of opposite polarity meets requirements for feeder and branch circuit applications of UL508A.
- **Safety Covers**
  Polycarbonate safety covers provide dead-front protection. One cover is needed for each pole. Each cover has a test probe hole in the center for circuit checking. Covers are optional accessories and catalog numbers can be found in the catalog selection tables for each size block.

Ratings:

Volts : 1000VAC/DC

Amps : 65 to 2260A based on NEC table 310.15(B)(16) 75ºC ampacities

SCCR : 100kA with properly sized fuse

(See Mersen’s PDB SCCR guide at ep.mersen.com or contact Mersen technical services)

Approvals:

- UL Listed to subject 1953, File E352417
- CSA Certified Class 6228 01

Additional Specifications:

Wire Type:	Copper Blocks: 60/75ºC Solid/Stranded CU Aluminum Blocks: 60/75/90ºC Solid/Stranded AL and CU
Connector:	Copper Blocks: Highly conductive tin-plated copper Aluminum Blocks: Highly conductive tin-plated aluminum
Insulating Material:	Glass-filled polycarbonate with verified dielectric strength in excess of 2500V
Flammability:	UL94-V0
Mounting:	Direct panel mount
Environmental:	RoHS compliant, Lead Free

MPDB68 and MPDB69 Open-Style PDBs

Catalog Numbers (Large)

Line		Load		Catalog Numbers - Aluminum				Catalog Numbers - Copper				Amp Rating per Pole	
				Number of Poles				Number of Poles					
Wire Range	Openings per Pole	Wire Range	Openings per Pole	ADDER	1-P	2-P	3-P	ADDER	1-P	2-P	3-P	Al Wire	Cu Wire
Box-Box Configuration													
350 - 6	1	2/0 - 14	6	MPDB69170	MPDB69171	MPDB69172	MPDB69173	-	-	-	-	250	310
		4 - 14	12	MPDB69150	MPDB69151	MPDB69152	MPDB69153	MPDB68150	MPDB68151	MPDB68152	MPDB68153		
500 - 4	1	500 - 4	1	MPDB69050	MPDB69051	MPDB69052	MPDB69053	-	-	-	-	310	380
		350 - 6	2	MPDB69060	MPDB69061	MPDB69062	MPDB69063	MPDB68060	MPDB68061	MPDB68062	MPDB68063		
		4/0 - 6	4	MPDB69510	MPDB69511	MPDB69512	MPDB69513	-	-	-	-		
		2/0 - 14	6	MPDB69070	MPDB69071	MPDB69072	MPDB69073	-	-	-	-		
		4 - 14	12	MPDB69080	MPDB69081	MPDB69082	MPDB69083	-	-	-	-		
600 - 2	1	600 - 2	1	MPDB69640	MPDB69641	MPDB69642	MPDB69643	-	-	-	-	340	420
1000 - 250	1	1000 - 250	1	MPDB69000	MPDB69001	MPDB69002	MPDB69003	-	-	-	-	445	545
		500 - 4	2	MPDB69010	MPDB69011	MPDB69012	MPDB69013	-	-	-	-		
		350 - 6	2	MPDB69020	MPDB69021	MPDB69022	MPDB69023	-	-	-	-		
		2/0 - 14	6	MPDB69030	MPDB69031	MPDB69032	MPDB69033	-	-	-	-		
		4 - 14	12	MPDB69040	MPDB69041	MPDB69042	MPDB69043	-	-	-	-		
4 - 14	2	4 - 14	12	MPDB69180	MPDB69181	MPDB69182	MPDB69183	-	-	-	-	130	170
2/0 - 14	2	4 - 14	12	MPDB69160	MPDB69161	MPDB69162	MPDB69163	MPDB68160	MPDB68161	MPDB68162	MPDB68163	270	350
		10 - 14	20	MPDB69600	MPDB69601	MPDB69602	MPDB69603	-	-	-	-		
350 - 6	2	350 - 6	2	MPDB69120	MPDB69121	MPDB69122	MPDB69123	MPDB68120	MPDB68121	MPDB68122	MPDB68123	500	620
		4/0 - 10	4	-	-	-	-	MPDB68320	MPDB68321	MPDB68322	MPDB68323		
		2/0 - 14	6	MPDB69130	MPDB69131	MPDB69132	MPDB69133	MPDB68130	MPDB68131	MPDB68132	MPDB68133		
		4 - 14	12	MPDB69140	MPDB69141	MPDB69142	MPDB69143	MPDB68140	MPDB68141	MPDB68142	MPDB68143		
500 - 4	2	500 - 4	2	MPDB69090	MPDB69091	MPDB69092	MPDB69093	MPDB68090	MPDB68091	MPDB68092	MPDB68093	620	760
		4/0 - 6	4	MPDB69310	MPDB69311	MPDB69312	MPDB69313	-	-	-	-		
		4/0 - 10	4	-	-	-	-	MPDB68310	MPDB68311	MPDB68312	MPDB68313		
		2/0 - 14	6	MPDB69100	MPDB69101	MPDB69102	MPDB69103	MPDB68100	MPDB68101	MPDB68102	MPDB68103		
		2/0 - 14	8	MPDB69350	MPDB69351	MPDB69352	MPDB69353	-	-	-	-		
		4 - 14	12	MPDB69110	MPDB69111	MPDB69112	MPDB69113	MPDB68110	MPDB68111	MPDB68112	MPDB68113		
600 - 2	2	600 - 2	2	MPDB69650	MPDB69651	MPDB69652	MPDB69653	-	-	-	-	680	840
		4-14 & 3/0-10	4 & 4	MPDB69540	MPDB69541	MPDB69542	MPDB69543	-	-	-	-		
Box-Stud Configuration													
500 - 4	1	3/8-16 x 1	1	MPDB69210	MPDB69211	MPDB69212	MPDB69213	-	-	-	-	310	380
		3/8-16 x 1	2	MPDB69270	MPDB69271	MPDB69272	MPDB69273	-	-	-	-		
1000 - 250	1	1/2-13 x 1-3/16	1	MPDB69280	MPDB69281	MPDB69282	MPDB69283	-	-	-	-	445	545
1/2-13 x 1	1	4 - 14	12	-	-	-	-	MPDB68290	MPDB68291	MPDB68292	MPDB68293	1000	1000
500 - 4	2	3/8-16 x 1	2	MPDB69230	MPDB69231	MPDB69232	MPDB69233	-	-	-	-	620	760
Stud-Stud Configuration													
1/2-13 x 1-3/8	1	1/2-13 x 1-3/8	1	-	-	-	-	MPDB68220	MPDB68221	MPDB68222	MPDB68223	400	400

Hinged Safety Cover for MPDB68 and MPDB69 series: Catalog number **MPDBC6869**

End Barrier for MPDB68 and MPDB69 series: Catalog Number **MPDBE6869**

Feed-through terminal block - PT 2,5-TWIN - 3209549

Please be informed that the data shown in this PDF Document is generated from our Online Catalog. Please find the complete data in the user's documentation. Our General Terms of Use for Downloads are valid (http://phoenixcontact.com/download)

Feed-through terminal block, Connection method: Push-in connection, Cross section: 0.14 mm² - 4 mm², AWG: 26 - 12, Width: 5.2 mm, Height: 35.2 mm, Color: gray, Mounting type: NS 35/7,5, NS 35/15

Product Features

- The Push-in connection terminal blocks are characterized by the system features of the CLIPLINE complete system and by easy and tool-free wiring of conductors with ferrules or solid conductors
- The compact design and front connection enable wiring in a confined space
- In addition to the testing facility in the double function shaft, all terminal blocks provide an additional test connection
- Tested for railway applications

Key Commercial Data

Packing unit	1 pc
Minimum order quantity	50 pc
Weight per Piece (excluding packing)	8.8 g
Country of origin	Germany

Technical data

General

Number of levels	1
Number of connections	3
Potentials	1
Nominal cross section	2.5 mm²
Color	gray
Insulating material	PA
Flammability rating according to UL 94	V0
Area of application	Railway industry

Feed-through terminal block - PT 2,5-TWIN - 3209549

Technical data

General

	Machine building
	Plant engineering
	Process industry
Rated surge voltage	8 kV
Degree of pollution	3
Overvoltage category	III
Insulating material group	I
Maximum load current	28 A (with 4 mm² conductor cross section)
Nominal current I_N	24 A (with 2.5 mm² conductor connection cross section)
Nominal voltage U_N	800 V
Open side panel	Yes
Shock protection test specification	DIN EN 50274 (VDE 0660-514):2002-11
Back of the hand protection	guaranteed
Finger protection	guaranteed
Result of surge voltage test	Test passed
Surge voltage test setpoint	9.8 kV
Result of power-frequency withstand voltage test	Test passed
Power frequency withstand voltage setpoint	2 kV
Result of the test for mechanical stability of terminal points (5 x conductor connection)	Test passed
Result of bending test	Test passed
Bending test rotation speed	10 rpm
Bending test turns	135
Bending test conductor cross section/weight	0.14 mm² / 0.2 kg
	2.5 mm² / 0.7 kg
	4 mm² / 0.9 kg
Tensile test result	Test passed
Conductor cross section tensile test	0.14 mm²
Tractive force setpoint	10 N
Conductor cross section tensile test	2.5 mm²
Tractive force setpoint	50 N
Conductor cross section tensile test	4 mm²
Tractive force setpoint	60 N
Result of tight fit on support	Test passed
Tight fit on carrier	NS 35
Setpoint	1 N
Result of voltage-drop test	Test passed

Feed-through terminal block - PT 2,5-TWIN - 3209549

Technical data

General

Requirements, voltage drop	≤ 3.2 mV
Result of temperature-rise test	Test passed
Short circuit stability result	Test passed
Conductor cross section short circuit testing	2.5 mm²
Short-time current	0.3 kA
Conductor cross section short circuit testing	4 mm²
Short-time current	0.48 kA
Result of aging test	Test passed
Ageing test for screwless modular terminal block temperature cycles	192
Result of thermal test	Test passed
Proof of thermal characteristics (needle flame) effective duration	30 s
Oscillation, broadband noise test result	Test passed
Test specification, oscillation, broadband noise	DIN EN 50155 (VDE 0115-200):2008-03
Test spectrum	Service life test category 2, bogie mounted
Test frequency	f_1 = 5 Hz to f_2 = 250 Hz
ASD level	6.12 $(m/s^2)^2$/Hz
Acceleration	3.12 g
Test duration per axis	5 h
Test directions	X-, Y- and Z-axis
Shock test result	Test passed
Test specification, shock test	DIN EN 50155 (VDE 0115-200):2008-03
Shock form	Half-sine
Acceleration	30g
Shock duration	18 ms
Number of shocks per direction	3
Test directions	X-, Y- and Z-axis (pos. and neg.)
Relative insulation material temperature index (Elec., UL 746 B)	130 °C
Temperature index of insulation material (DIN EN 60216-1 (VDE 0304-21))	125 °C
Static insulating material application in cold	-60 °C

Dimensions

Width	5.2 mm
End cover width	2.2 mm
Length	60.5 mm
Height	35.2 mm
Height NS 35/7,5	36.5 mm
Height NS 35/15	44 mm

Feed-through terminal block - PT 2,5-TWIN - 3209549

Technical data

Connection data

Connection method	Push-in connection
Connection in acc. with standard	IEC 60947-7-1
Conductor cross section solid min.	0.14 mm²
Conductor cross section solid max.	4 mm²
Conductor cross section AWG min.	26
Conductor cross section AWG max.	12
Conductor cross section flexible min.	0.14 mm²
Conductor cross section flexible max.	2.5 mm²
Min. AWG conductor cross section, flexible	26
Max. AWG conductor cross section, flexible	14
Conductor cross section flexible, with ferrule without plastic sleeve min.	0.14 mm²
Conductor cross section flexible, with ferrule without plastic sleeve max.	2.5 mm²
Conductor cross section flexible, with ferrule with plastic sleeve min.	0.14 mm²
Conductor cross section flexible, with ferrule with plastic sleeve max.	2.5 mm²
2 conductors with same cross section, stranded, TWIN ferrules with plastic sleeve, max.	0.5 mm²
Conductor cross section solid min.	0.14 mm²
Conductor cross section solid max.	4 mm²
Conductor cross section AWG min.	26
Conductor cross section AWG max.	12
Conductor cross section flexible min.	0.14 mm²
Conductor cross section flexible max.	2.5 mm²
Stripping length	8 mm ... 10 mm
Internal cylindrical gage	A3

Standards and Regulations

Connection in acc. with standard	CSA
	IEC 60947-7-1
Flammability rating according to UL 94	V0

Classifications

eCl@ss

eCl@ss 4.0	27141121
eCl@ss 4.1	27141121
eCl@ss 5.0	27141120
eCl@ss 5.1	27141120
eCl@ss 6.0	27141120

Feed-through terminal block - PT 2,5-TWIN - 3209549

Classifications

eCl@ss

eCl@ss 7.0	27141120
eCl@ss 8.0	27141120
eCl@ss 9.0	27141120

ETIM

ETIM 2.0	EC000897
ETIM 3.0	EC000897
ETIM 4.0	EC000897
ETIM 5.0	EC000897

UNSPSC

UNSPSC 6.01	30211811
UNSPSC 7.0901	39121410
UNSPSC 11	39121410
UNSPSC 12.01	39121410
UNSPSC 13.2	39121410

Approvals

Approvals

Approvals

CSA / UL Recognized / VDE Zeichengenehmigung / cUL Recognized / RS / ABS / NK / IECEE CB Scheme / BV / EAC / NK / EAC / cULus Recognized

Ex Approvals

ATEX / IECEx / EAC Ex

Approvals submitted

Approval details

CSA

	B	C
mm²/AWG/kcmil	26-12	26-12

Feed-through terminal block - PT 2,5-TWIN - 3209549

Approvals

	B	C
Nominal current IN	20 A	20 A
Nominal voltage UN	600 V	600 V

UL Recognized

	B	C
mm²/AWG/kcmil	26-12	26-12
Nominal current IN	20 A	20 A
Nominal voltage UN	600 V	600 V

VDE Zeichengenehmigung

mm²/AWG/kcmil	0.2-2.5
Nominal current IN	24 A
Nominal voltage UN	800 V

cUL Recognized

	B	C
mm²/AWG/kcmil	26-12	26-12
Nominal current IN	20 A	20 A
Nominal voltage UN	600 V	600 V

RS

ABS

NK

IECEE CB Scheme

mm²/AWG/kcmil	0.2-2.5

Feed-through terminal block - PT 2,5-TWIN - 3209549

Approvals

Nominal voltage UN	800 V

BV

EAC

NK

EAC

cULus Recognized