

OPERATIONS & MAINTENANCE MANUAL
FOR
CHRISTMAS PUMP STATION

General Contractor: Southern Constructors
Clark Cooper
1150 Maryville Pike
Knoxville, TN 37920
(865) 579-5351

Electrical Sub-Contractor: Funderburk Electric Services, LLC
P.O. Box 14380
Knoxville, TN 37914
Contact: Earl Norman
(865) 524-8615 ext.113

O & M Data: Lighting
Gear
Floor Boxes
Fire Stop Material



SOUTHERN CONSTRUCTORS, INC.
 1150 Maryville Pike
 P.O. Box 9476
 Knoxville, Tennessee 37940

(865) 579-5351 (865) 579-4328 (FAX)

Submittal No: 16510-1

Revision No: 0

Sent Date: 8/19/2009

Due Date: 9/5/2009

Submittal

Project: Christmas Pump Station

PM: Clark Cooper

Job: 0909

Christmas Pump Station

Harriman, TN

Spec Section No: 16510

Spec Section Title: Interior Building Lighting

Submittal Title: Lighting & Switchgear



SOUTHERN CONSTRUCTORS, INC.

"We know our business and we do it right"

Checked for compliance with contract drawings and specifications. This check is not to be construed as relieving the Vendor from compliance with nor the Architect from responsibility for the plans and specifications.

By: C.C. Date: 8/19/2009



West, Welch, Reed Engineers, Inc.

Knoxville, TN
 Ph: (865) 588-2431
 Fx: (865) 588-2434

Johnson City, TN
 Ph: (423) 926-3204
 Fx: (423) 926-3208

SUBMITTAL REVIEW

- NO EXCEPTIONS TAKEN
- ACCEPTED: NOTE COMMENTS
- SEE COMMENTS ATTACHED
- REJECTED: RESUBMIT

The review of these documents does not relieve the contractor from the responsibility of complying with the project contract drawings and specifications, nor the results of departures therefrom. The contractor remains responsible for the details of construction, including verifying quantities, assembly techniques, dimensions, installation methods, and performing the work in a safe manner.

By: Paul Welch Date: 8-26-09

**Christmas Pump
Station
Lighting & Gear**

For

**Funderburk Electrical Services,
LLC**

By

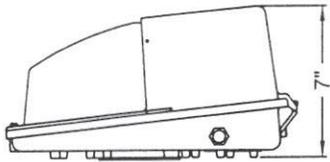
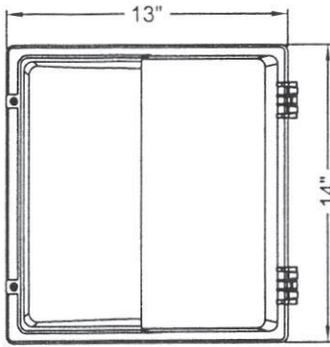
Mayer Electric

Mayer Electric Supply Co.

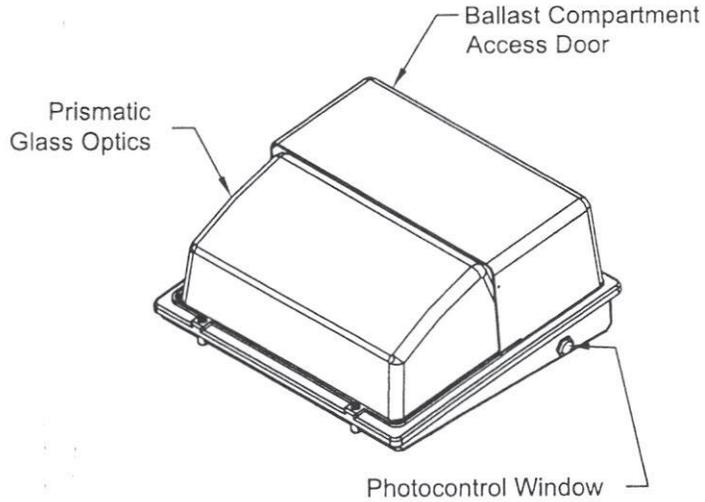
Christmas Pump Station

Funderburk Electrical Services, LLC

<u>Type</u>	<u>Manufacturer</u>	<u>Catalog Number</u>
A	Holophane	W415AHPMASZ
B	Holophane	7200412JF
C	Holophane	DM5C36SNN2DL



Maximum Weight - 34 Lbs.



Wallpack® IV

INFRASTRUCTURE
OUTDOOR



ORDERING INFORMATION:

<p>Series W4</p>	<p>15AHP</p> <p>BALLAST TYPE 050HP = 50W HPS, MOG BASE 070HP = 70W HPS, MOG BASE 100HP = 100W HPS, MOG BASE 15AHP = 150W 55V HPS 200HP = 200W HPS, MOG BASE 250HP = 250W HPS, MOG BASE 400HP = 400W HPS, MOG BASE 70DMH = 70W MH, MED BASE 10DMH = 100W MH, MED BASE 15DMH = 150W MH, MED BASE 175MH = 175W MH, MOG BASE* 175PM = 175W PM, MOG BASE 250MH = 250W MH, MOG BASE* 250PM = 250W PM, MOG BASE 400MH = 400W MH, MOG BASE* 320PM = 320W PM, MOG BASE 30DIN = 300W MAX INC. 42CFL = 42W COMP FLUOR.</p> <p>*Not available for shipment in the US due to EISA 2007 legislation.</p>	<p>MA</p> <p>VOLTAGE 12 = 120 VOLT CULUS 20 = 208 VOLT 24 = 240 VOLT 27 = 277 VOLT CULUS 48 = 480 VOLT VT = 120, 277, 347 VOLT CULUS MA = MT (PREWIRED TO 120V) MB = MT (PREWIRED TO 208V) MC = MT (PREWIRED TO 240V) MD = MT (PREWIRED TO 277V)</p>	<p>S</p> <p>OPTICS C = CUTOFF S = STANDARD U = UNDERPASS</p>	<p>Z</p> <p>COLOR G = GRAY K = BLACK W = WHITE Z = BRONZE</p>	<p>LAMP</p>
<p>ACCESSORIES W4TPD = DRIVER FOR TAMPER RESISTANT SCREWS LAMP = SHIP APPROPRIATE LAMP AS LINE ITEM</p>					
<p>OPTIONS B = PHOTOCONTROL C = NEMA DECAL D = POLYCARBONATE SHIELD F1 = SINGLE FUSING 120, 240, 277, 347, MA, MC & MD VOLTS F2 = DOUBLE FUSING 208, 240, 480, MB & MC VOLTS G = WIRE GUARD P = PROTECTED STARTER (HPS ONLY, NOT AVAILABLE WITH VT IN 050, 070, 100 & 150W) T = TAMPER RESISTANT SCREWS</p>					

Specifications

DESCRIPTION Wallpack IV is a wall mounted luminaire consisting of a precisely contoured anodized aluminum reflector, thermal shock resistant borosilicate glass refractor, integral HID Holophane ballast and die cast aluminum housing. Luminaire shall have a self hinged door secured by captive fasteners. Ballast and lamp socket shall be completely factory pre-wired and tested. Luminaire shall be designed to mount directly on a wall for surface wiring or over a recessed outlet box. The integral ballast shall provide reliable starting temperatures to -30°C. HID ballast shall be positioned for maximum heat dissipation. Luminaire housings shall be finished with a thermal-setting polyester powder paint coating. Luminaire shall be UL/CUL listed for wet locations.

Maximum Ambient Temperatures:
 30°C: 400MH, 250MH, 320PM, 250PM
 40°C: 70DMH, 10DMH, 15DMH, 175MH, 175PM, 30DIN, 42CFL. ALL HPS.

THIS DRAWING, WHEN APPROVED, SHALL BECOME THE COMPANY SPECIFICATION FOR THE MATERIAL TO BE FURNISHED BY HOLOPHANE ON THE ORDER NOTED ABOVE. A UNIT OF SIMILAR DESIGN MAY BE SUPPLIED, BUT ONLY AFTER APPROVAL BY THE CUSTOMER. HOLOPHANE WILL BE SUPPLIED WITH EACH ANCHOR BOLT ORDER TO MATCH THE POLE CONNECTION. THIS PRINT IS THE PROPERTY OF HOLOPHANE AND IS LOANED TO YOU FOR YOUR CONVENIENCE. IT WILL NOT BE USED DIRECTLY OR INDIRECTLY IN ANY WAY DETRIMENTAL TO OUR INTERESTS, AND ONLY IN CONNECTION WITH MATERIAL FURNISHED BY HOLOPHANE.

ORDER #:	
TYPE:	A
DRAWN:	BRL
DATE:	11/24/08
DWG #:	W4

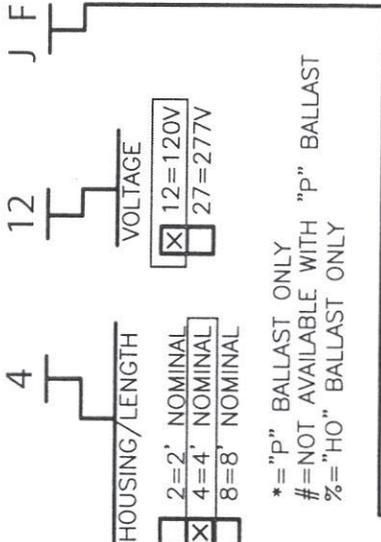
UL LISTED TO US AND
CANADIAN SAFETY STANDARDS

PRISMATITE® 7200

(2 LAMP)

WET LOCATION

CATALOG NUMBER
7200



HOUSING/LENGTH
 2=2' NOMINAL
 4=4' NOMINAL
 8=8' NOMINAL

VOLTAGE
 12=120V
 27=277V

*="P" BALLAST ONLY
 #=NOT AVAILABLE WITH "P" BALLAST
 %="HO" BALLAST ONLY

BALLASTS

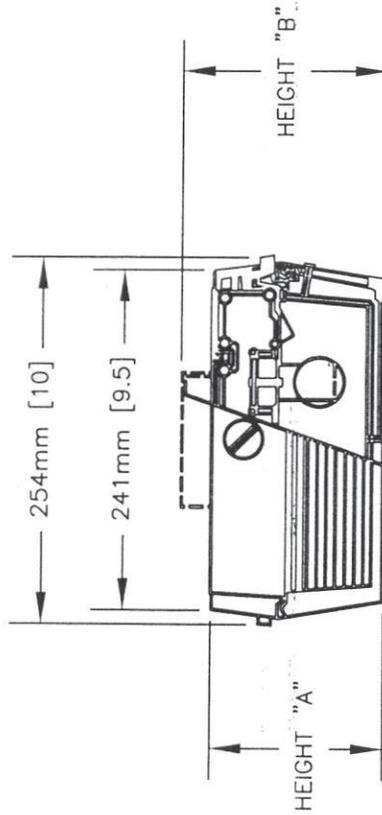
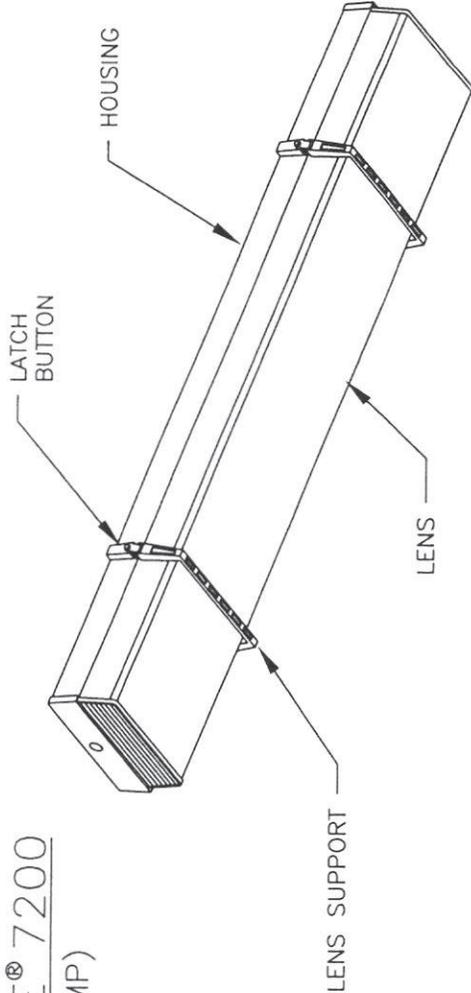
- J=MAGNETEK TRIAD FOR T8 LAMPS
- P=MAGNETEK TRIAD FOR 38-40W T5 LAMPS
- WB=ADVANCE MARK III (ENERGY SAVING) FOR 40W RS LAMPS
- WS=MAGNETEK UNIVERSAL (BASIC-12) FOR 40W RS LAMPS
- LT=FOR 40W RS LAMPS 0°F MIN START TEMPERATURE
- HO=FOR HO LAMPS, -20°F MIN START TEMPERATURE

OPTIONS (ADD TO CATALOG NUMBER)(SOME RESTRICTIONS APPLY):

- DR=IMPACT-RESISTANT LENS
- P1=PRISMATECT (CORROSION RESISTANT) FINISH
- SA=2 & 4 FOOT: TWO 1/2" THREADED STEM ADAPTORS;
8 FOOT: THREE 1/2" THREADED STEM ADAPTORS
- F=120V OR 277V FUSE INSTALLED

ACCESSORIES (SHIPS SEPARATELY)(ADD TO CATALOG NUMBER):

- CRK=CONTINUOUS ROW KIT (ONE PER FIXTURE)



CATALOG NUMBER	HEIGHT mm (in)	HEIGHT mm (in)	HEIGHT mm (in)	LENGTH mm (in)
72002XXP	124 (4.88)	N/A	N/A	608 (23.94)
72004XXJ, WB	124 (4.88)	N/A	N/A	1241 (48.88)
72004XXWS, LT	124 (4.88)	N/A	N/A	1241 (48.88)
72004XXHO	N/A	146 (5.75)	146 (5.75)	1241 (48.88)
72008XXHO	N/A	146 (5.75)	146 (5.75)	2480 (97.63)



An **ty** Brands Company

©2002 ACUITY GROUP INC., 214 OAKWOOD AVE., NEWARK, OH 43055

ORDER NO: _____

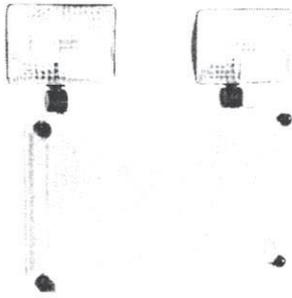
TYPE: B

DRAWING NO: MA-5155
 CAD MODEL: 7200.DWG
 DATE: 4-18-07

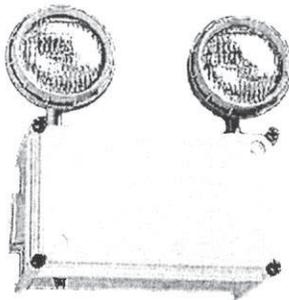
Sheet 1 of 1

DeSoto® M50

Emergency Lighting



DM5C18SHS92



DM5N50TNS2

GENERAL DESCRIPTION

The DeSoto M50 is approved for NEMA 3, 3r, 4, 4x, 12 and 13 areas, and can be additionally listed for wet or damp locations. The DeSoto M50 is ideal for food processing and washdown areas.

HOUSING

Constructed of impact resistant, fiberglass reinforced polyester. Housing color is gray.

Includes two black, rectangular thermoplastic 9 watt lamp heads externally mounted.

One-piece, molded gasket and unexposed metallic hardware prolong product life in highly corrosive areas.

Housing is rated for use in NEMA 3, 3r, 4, 4x, 12 and 13 areas.

ILLUMINATION

Illumination is accomplished with lamp heads externally mounted. The standard unit with external heads includes 6 or 12 volt lamp head in the 9 watt version. Optional lamp heads may be selected.



HL-1323 4/08

ELECTRONICS

120/277 VAC dual voltage input with surge protected, solid-state charging circuitry provides for a reliable charging system. The charging system is furnished with low voltage disconnect, AC lockout, brownout protection, AC indicator lamp and test switch.

The low voltage disconnect (LVD) feature will disconnect the battery prior to an unacceptable deep discharge, but not before the required 90 minute emergency operation.

The AC lockout feature prevents battery drain prior to the initial energizing of utility power, and allows the installer to complete all wiring and electrical connections without energizing the emergency circuit.

The brownout protection circuitry will automatically switch the unit into the emergency mode if the utility voltage sags below 20% of nominal.

Battery charging circuitry is entirely solid-state, and utilizes a constant current charger for nickel cadmium battery units. A fully automatic, voltage regulated charger is used for lead calcium battery units. Battery recharge time after full discharge is less than the required UL 924 standard.

Line sensitive electronics cause an instantaneous transfer to battery power if utility power is lost, or a brownout condition is detected. When line voltage is present and stabilized, the transfer circuitry switches back to normal operation and begins recharging the battery. The transfer circuitry can be tested via a momentary test switch located on the housing.

BATTERY

Maintenance free, sealed nickel cadmium (14 to 50 watt capacity) or lead calcium (18 to 50 watt capacity) batteries are available with 6 or 12 volt operation.

Standard sustained emergency operation is for 90 minutes with the illumination source providing full light output.

The suggested operating temperature range for nickel cadmium batteries is 20°F (-7°C) to 95°F (35°C), and the battery has an expected service life of 12 years.

The suggested operating temperature range for lead calcium batteries is 65°F (19°C) to 85°F (30°C), and the battery has an expected service life of 10 years.



NEMA/Hazardous

ELECTRICAL SPECIFICATIONS

Input Power Requirements

120VAC – 0.15 amps, 18 watts
277VAC – 0.07 amps, 18 watts

CODE COMPLIANCE

- UL 924 listed
- UL wet and damp location listings optional
- Enclosure meets NEMA 3, 3r, 4, 4x, 12 and 13 classifications
- NFPA 101, NEC, BOCA, OSHA and IBC illumination standards
- NSF standard 2 "Splash Zone"

WARRANTY

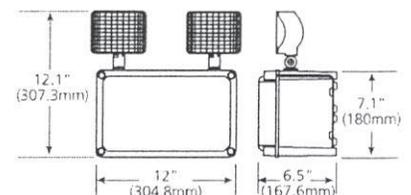
- Three year full electronics warranty
- One year full plus four year pro-rated lead calcium
- Five year full plus five year pro-rated nickel cadmium battery

See Holograph Warranty Sheet HL-1351 for complete details.

NEMA ENCLOSURE CLASSIFICATIONS

- Type 3 — Protects enclosed equipment against windblown dust and rain.
- Type 3R — Protects enclosed equipment against falling rain.
- Type 4 — Protects enclosed equipment against splashing water, falling or hose-directed water and severe external condensation.
- Type 4X — Same as type 4 plus corrosion resistance.
- Type 12 — Protects enclosed equipment against fibers, flyings, lint, dust, dirt, light splashing, seepage, dripping, and external condensation of non-corrosive liquids.
- Type 13 — Protects enclosed equipment against lint, dust, seepage, external condensation, and spraying of water, oil or coolant.

DIMENSIONS



DeSoto® M50



Emergency Lighting

SUGGESTED SPECIFICATION

Furnish and install Holophane's emergency lighting model **DM5 C 36 S NN 2 DL**. The unit shall be constructed to meet Underwriter's Laboratories, Inc. Standard #924 and the National Electrical Code (NEC).

Installation and Operation

Unit shall be easily field connected to a 120 or 277 VAC, 60 hertz, unswitched power source. Installation must comply with the NEC as well as other applicable codes. Upon utility power failure or brownout, the unit shall automatically transfer to battery power and maintain the required illumination level for a minimum period of 90 minutes. Upon restoration of utility

power, the charger shall restore the battery to full charge within UL 924 requirements following a rated discharge of not more than 90 minutes.

Charger

Product shall utilize either a constant current (nickel cadmium) or fully automatic, voltage regulated (lead calcium) charging system. The charging system shall maintain the battery at full capacity without the need for periodic exercising or equalization. The following features shall be standard: Low voltage disconnect (LVD), brownout protection and AC lockout.

Battery

The battery shall be either a maintenance free, sealed

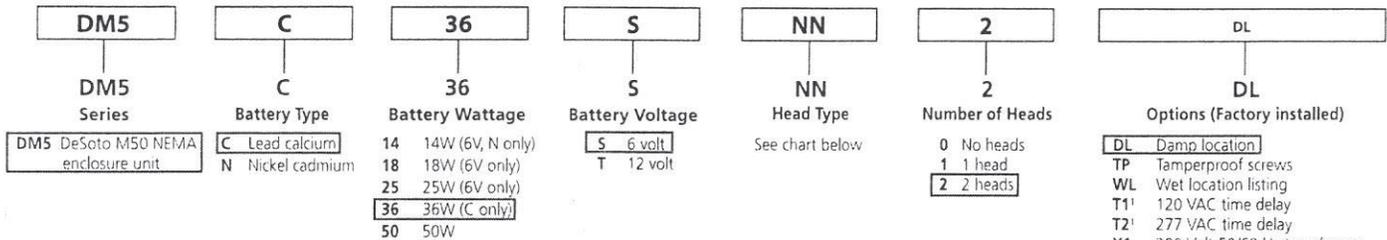
NEMA/Hazardous

nickel cadmium or lead calcium battery. The nickel cadmium battery shall utilize sintered plate construction and polypropylene separators for trouble-free operation in ambient temperatures up to 95°F (35°C). The lead calcium battery shall provide trouble-free operation in temperatures up to 85°F (30°C). Nickel cadmium batteries shall be supplied with a five year full warranty, and lead calcium batteries shall be supplied with a one year full warranty.

Housing

The unit housing shall be constructed of impact resistant, fiberglass-reinforced polyester. The housing color shall be gray.

Ordering Data



How to construct a catalog number
Example: DM5 C 36 S NN 2 DL

Head Selection Chart

Description	Wattage	Catalog number	
		White	Black
Lexan wedge base rectangular	Tungsten	5.4	HS6
	6 Volt	7.2	HS7
		9.0	HS9
	12 Volt	9.0	HT9
		12.5	HT12
Lexan PAR 36 sealed beam round	Tungsten	8.0	NM ¹
	6 Volt	18.0	NN ¹
		25.0	NO ¹
		30.0	NP ¹
12 Volt	12.0	NQ ¹	
	18.0	NR ¹	
	25.0	NS ¹	
	30.0	NT ¹	
	Halogen	8.0	NU ¹
6 Volt	12.0	NV ¹	
	12 Volt	8.0	NW ¹
	12.0	NX ¹	

¹ Add SH suffix to Lexan PAR36 sealed beam round heads for shatterproof lamp shield
Lexan® is a registered trademark of General Electric Co.

- DL Damp location**
- TP Tamperproof screws
 - WL Wet location listing
 - T1' 120 VAC time delay
 - T2' 277 VAC time delay
 - X1 200 Volt 50/60 Hz transformer
 - X2 220 Volt 50/60 Hz transformer
 - X3 240 Volt 50/60 Hz transformer
- Accessories (Shipped separately)**
- HP916-1-377 External mounting feet
 - HPNPTOOL Tamperproof screwdriver
 - HPWG5 Wire guard
 - PVS Polycarbonate vandal shield
- 1 Time delay is factory set at 15 minutes



Acuity Brands Lighting, Inc.

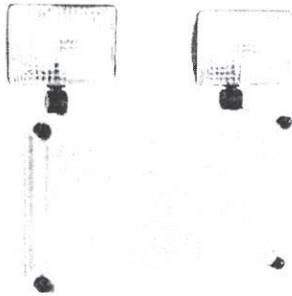
Holophane Headquarters,
3825 Columbus Rd., S.W., Granville, OH 43023
Holophane Canada, Inc., 9040 Leslie Street,
Suite 208, Richmond Hill, ON L4B 3M4
Holophane Europe Limited, Bond Ave.,
Milton Keynes MK1 1JG, England
Holophane, S.A. de C.V., Apartado Postal No. 986,
Naucalpan de Juarez, 53000 Edo. de Mexico

Contact your local Holophane factory sales representative for application assistance, and computer-aided design and cost studies. For information on other Holophane products and systems, call the Inside Sales Service Department at 740-345-9631. In Canada call 905-707-5830 or fax 905-707-5695.

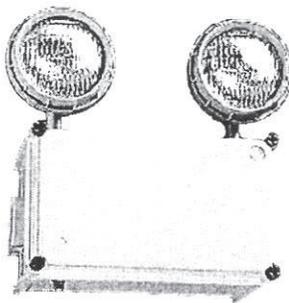
Limited Warranty and Limitation of Liability
Refer to the Holophane limited material warranty and limitation of liability on this product, which are published in the "Terms and Conditions" section of the current Buyers Guide, and is available from your local Holophane sales representative.

DeSoto® M50

Emergency Lighting



DM5C18SH592



DM5N50TNS2

GENERAL DESCRIPTION

The DeSoto M50 is approved for NEMA 3, 3r, 4, 4x, 12 and 13 areas, and can be additionally listed for wet or damp locations. The DeSoto M50 is ideal for food processing and washdown areas.

HOUSING

Constructed of impact resistant, fiberglass reinforced polyester. Housing color is gray.

Includes two black, rectangular thermoplastic 9 watt lamp heads externally mounted.

One-piece, molded gasket and unexposed metallic hardware prolong product life in highly corrosive areas.

Housing is rated for use in NEMA 3, 3r, 4, 4x, 12 and 13 areas.

ILLUMINATION

Illumination is accomplished with lamp heads externally mounted. The standard unit with external heads includes 6 or 12 volt lamp head in the 9 watt version. Optional lamp heads may be selected.



HL-1323 4/08

ELECTRONICS

120/277 VAC dual voltage input with surge protected, solid-state charging circuitry provides for a reliable charging system. The charging system is furnished with low voltage disconnect, AC lockout, brownout protection, AC indicator lamp and test switch.

The low voltage disconnect (LVD) feature will disconnect the battery prior to an unacceptable deep discharge, but not before the required 90 minute emergency operation.

The AC lockout feature prevents battery drain prior to the initial energizing of utility power, and allows the installer to complete all wiring and electrical connections without energizing the emergency circuit.

The brownout protection circuitry will automatically switch the unit into the emergency mode if the utility voltage sags below 20% of nominal.

Battery charging circuitry is entirely solid-state, and utilizes a constant current charger for nickel cadmium battery units. A fully automatic, voltage regulated charger is used for lead calcium battery units. Battery recharge time after full discharge is less than the required UL 924 standard.

Line sensitive electronics cause an instantaneous transfer to battery power if utility power is lost, or a brownout condition is detected. When line voltage is present and stabilized, the transfer circuitry switches back to normal operation and begins recharging the battery. The transfer circuitry can be tested via a momentary test switch located on the housing.

BATTERY

Maintenance free, sealed nickel cadmium (14 to 50 watt capacity) or lead calcium (18 to 50 watt capacity) batteries are available with 6 or 12 volt operation.

Standard sustained emergency operation is for 90 minutes with the illumination source providing full light output.

The suggested operating temperature range for nickel cadmium batteries is 20°F (-7°C) to 95°F (35°C), and the battery has an expected service life of 12 years.

The suggested operating temperature range for lead calcium batteries is 65°F (19°C) to 85°F (30°C), and the battery has an expected service life of 10 years.



NEMA/Hazardous

ELECTRICAL SPECIFICATIONS

Input Power Requirements

120VAC – 0.15 amps, 18 watts
277VAC – 0.07 amps, 18 watts

CODE COMPLIANCE

- UL 924 listed
- UL wet and damp location listings optional
- Enclosure meets NEMA 3, 3r, 4, 4x, 12 and 13 classifications
- NFPA 101, NEC, BOCA, OSHA and IBC illumination standards
- NSF standard 2 "Splash Zone"

WARRANTY

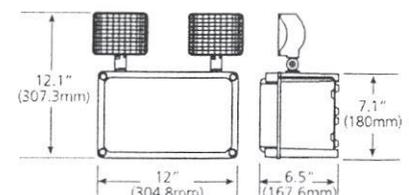
- Three year full electronics warranty
- One year full plus four year pro-rated lead calcium
- Five year full plus five year pro-rated nickel cadmium battery

See HoloPhane Warranty Sheet HL-1351 for complete details.

NEMA ENCLOSURE CLASSIFICATIONS

- Type 3 — Protects enclosed equipment against windblown dust and rain.
- Type 3R — Protects enclosed equipment against falling rain.
- Type 4 — Protects enclosed equipment against splashing water, falling or hose-directed water and severe external condensation.
- Type 4X — Same as type 4 plus corrosion resistance.
- Type 12 — Protects enclosed equipment against fibers, flyings, lint, dust, dirt, light splashing, seepage, dripping, and external condensation of non-corrosive liquids.
- Type 13 — Protects enclosed equipment against lint, dust, seepage, external condensation, and spraying of water, oil or coolant.

DIMENSIONS



DeSoto® M50



Emergency Lighting

SUGGESTED SPECIFICATION

Furnish and install Holophane's emergency lighting model **DM5 C 36 S NN 2 DL**. The unit shall be constructed to meet Underwriter's Laboratories, Inc. Standard #924 and the National Electrical Code (NEC).

Installation and Operation

Unit shall be easily field connected to a 120 or 277 VAC, 60 hertz, unswitched power source. Installation must comply with the NEC as well as other applicable codes. Upon utility power failure or brownout, the unit shall automatically transfer to battery power and maintain the required illumination level for a minimum period of 90 minutes. Upon restoration of utility

power, the charger shall restore the battery to full charge within UL 924 requirements following a rated discharge of not more than 90 minutes.

Charger

Product shall utilize either a constant current (nickel cadmium) or fully automatic, voltage regulated (lead calcium) charging system. The charging system shall maintain the battery at full capacity without the need for periodic exercising or equalization. The following features shall be standard: Low voltage disconnect (LVD), brownout protection and AC lockout.

Battery

The battery shall be either a maintenance free, sealed

NEMA/Hazardous

nickel cadmium or lead calcium battery. The nickel cadmium battery shall utilize sintered plate construction and polypropylene separators for trouble-free operation in ambient temperatures up to 95°F (35°C). The lead calcium battery shall provide trouble-free operation in temperatures up to 85°F (30°C). Nickel cadmium batteries shall be supplied with a five year full warranty, and lead calcium batteries shall be supplied with a one year full warranty.

Housing

The unit housing shall be constructed of impact resistant, fiberglass-reinforced polyester. The housing color shall be gray.

Ordering Data

How to construct a catalog number
Example: **DM5 C 36 S NN 2 DL**

DM5	C	36	S	NN	2	DL
DM5 Series	Battery Type	Battery Wattage	Battery Voltage	Head Type	Number of Heads	Options (Factory installed)
DM5 DeSoto M50 NEMA enclosure unit	C Lead calcium N Nickel cadmium	14 14W (6V, N only) 18 18W (6V only) 25 25W (6V only) 36 36W (C only) 50 50W	S 6 volt T 12 volt	See chart below	0 No heads 1 1 head 2 2 heads	DL Damp location TP Tamperproof screws WL Wet location listing T1 ¹ 120 VAC time delay T2 ¹ 277 VAC time delay X1 200 Volt 50/60 Hz transformer X2 220 Volt 50/60 Hz transformer X3 240 Volt 50/60 Hz transformer Accessories (Shipped separately) HP916-1-377 External mounting feet HPNPTPOOL Tamperproof screwdriver HPWGS Wire guard PVS Polycarbonate vandal shield ¹ Time delay is factory set at 15 minutes

Head Selection Chart

Description	Wattage	Catalog number	
		White	Black
Lexan wedge base rectangular	Tungsten 5.4	HS6	HS6B
	6 Volt 7.2	HS7	HS7B
	9.0	HS9	HS9B
	12 Volt 9.0	HT9	HT9B
	12.5	HT12	HT12B
	18.0	HT18	HT18B

Description	Wattage	Catalog number	
		Gray NEMA rated	
Lexan PAR 36 sealed beam round	Tungsten 8.0	NM ¹	
	6 Volt 18.0	NN ¹	
	25.0	NO ¹	
	30.0	NP ¹	
	12 Volt 12.0	NQ ¹	
	18.0	NR ¹	
	25.0	NS ¹	
	30.0	NT ¹	
Halogen	8.0	NU ¹	
	6 Volt 12.0	NV ¹	
12 Volt	8.0	NW ¹	
	12.0	NX ¹	

¹ Add SH suffix to Lexan PAR36 sealed beam round heads for shatterproof lamp shield

Lexan® is a registered trademark of General Electric Co.



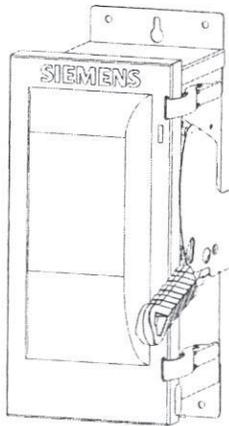
An Acuity Brands Company

Acuity Brands Lighting, Inc.

Holophane Headquarters,
3825 Columbus Rd., S.W., Granville, OH 43023
Holophane Canada, Inc., 9040 Leslie Street,
Suite 20B, Richmond Hill, ON L4B 3M4
Holophane Europe Limited, Bond Ave.,
Milton Keynes MK1 1JG, England
Holophane, S.A. de C.V., Apartado Postal No. 986,
Naucalpan de Juárez, 53000 Edo. de Mexico

Contact your local Holophane factory sales representative for application assistance, and computer-aided design and cost studies. For information on other Holophane products and systems, call the Inside Sales Service Department at 740-345-9631. In Canada call 905-707-5830 or fax 905-707-5695.

Limited Warranty and Limitation of Liability
Refer to the Holophane limited material warranty and limitation of liability on this product, which are published in the "Terms and Conditions" section of the current Buyers Guide, and is available from your local Holophane sales representative.



Heavy Duty Safety Switch

Type VBII, 30 Amp, Type 4/4X (Stainless Steel)

Standards and Ratings

- UL Listed under file #E4776
- Meets UL98 for switches and UL 50 for enclosures
- Meets NEMA Standard KS-1 for enclosed switches
- Meets NEC wire bending space requirements
- Rated 10,000 AIC as standard or 200,000 AIC when protected by Class R, T or J fuses rated 30 amp maximum
- I²t rated (Amps² x Seconds = 50,000)
- 12X overload current rating exceeds 10X industry standard

- Suitable for use as service entrance equipment

Features

- Quick-make and break switching action
- Double break visible blade design
- Highly visible ON/OFF indication
- Rugged installer friendly enclosure design
- Modular design allows quick and easy replacement of parts
- Front removable lugs which can easily be converted to copper body or compression type lugs
- Defeatable dual cover interlock

General Information

Catalog Number	Volts	Description	Shipping Weight (lbs.)
HNF261S	600	2 Pole, 2 Wire, Non-Fusible	13
HNF361S	600	3 Pole, 3 Wire, Non-Fusible	13
HNF361SS ⁶	600	3 Pole, 3 Wire, Non-Fusible	13

Horsepower Ratings^{1 2 3} - 600 Volts

Catalog Number	3 Phase, 480V AC		3 Phase, 600V AC		600V DC
	Std	Max	Std	Max	
HNF261S	—	— ⁴	—	— ⁴	15
HNF361S	—	20 ⁴	—	30	—
HNF361SS ⁶	—	20 ⁴	—	30	—

Accessories

Catalog Number	Description
HA161234	One Normally Open and Closed Auxiliary Switches
HA261234	Two Normally Open and Closed Auxiliary Switches
HA361234	Low Voltage Auxiliary Switch
HG61234	Equipment Ground Lug Kit
HG261234	Isolated Equipment Ground Lug Kit
HN612	Neutral Kit
HLC612	Copper Lug Kit (9 lugs per kit)
HCL612	Compression Lug Neutral Barrier Kit
SSH075	0.75" Type 4/4X Hub
SSH100	1.00" Type 4/4X Hub

¹ Dual horsepower ratings: Std - applies when non-time delay fuses are installed. Max - applies when time-delay fuses are installed.

² Horsepower ratings listed also apply to Design E motors through 15HP at 480V and 20HP at 600V with no derating.

³ Also rated 5HP at 250V DC.

⁴ Also rated 7 1/2 HP at 480V, 1 phase and 10HP at 600V, 1 phase.

⁵ Also rated 10HP on 3 Phase, 240V AC systems.

⁶ The enclosure of catalog number HNF361SS is constructed from 316 grade stainless steel.

Product Specification Sheet HD30.7

Answers for industry.

SIEMENS

Product Specification Sheet #HD30.7 (page 2 of 2)

Replacement Parts

Catalog Number	Description
HNB612	Non-Fusible Replacement Base
HH6123S	Replacement Handle/Handle Guard
HL612	Replacement Lugs (3 lugs per kit)
HM6123S	Replacement Mechanism
1	Replacement Door

Mechanical Lug Wire Ranges (60/75°C, Cu/Al)

Description	Wire Range
Line, Load	# 12-6 AWG (Al) or
Neutral	# 14-6 AWG (Cu)
Ground	# 14-4 AWG

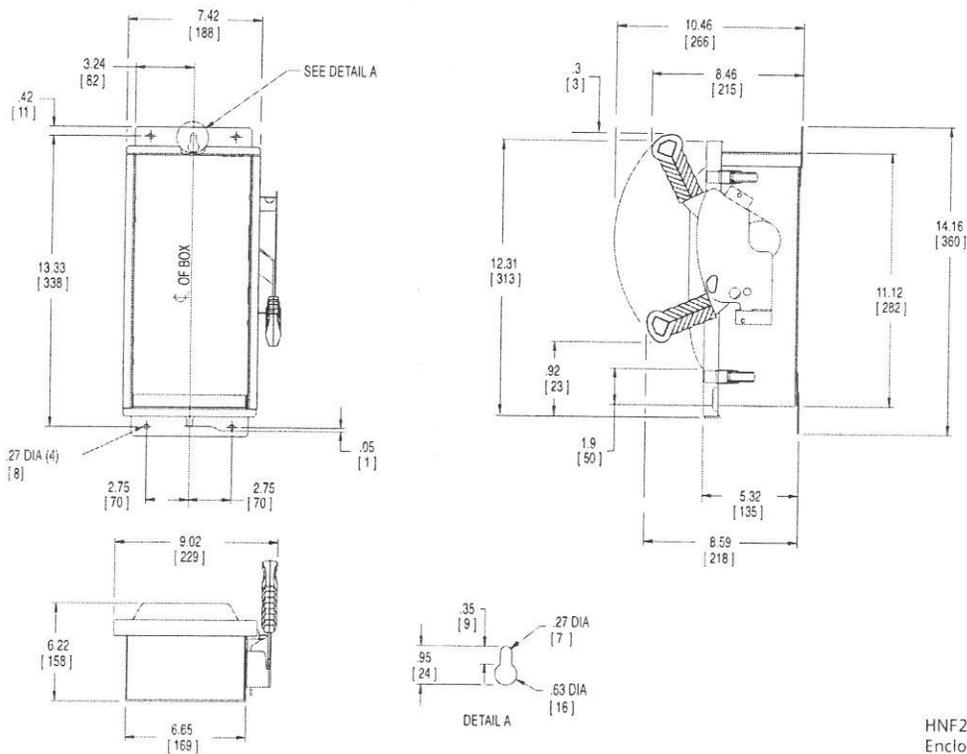
Compression Lugs ²

Wire Size	Burdny		Thomas-Betts		IlSCO	
	CU Only	CU/AL	CU Only	CU/AL	CU Only	CU/AL
#14-10				60096 60097		
#8	YA8C-L BOX YA8C-L1 BOX		54104 54130	60101 60102 61102	CRA-8	ACL-8 ACN-8
#6				61107		

¹ Place "DOOR" at the end of the switch catalog number.

² If compression lugs are used for the neutral, order compression lug neutral barrier kit HCL612.

Dimension Drawing



No knockouts in the enclosures.
 Dimensions shown in inches and millimeters ().
 Dimension shown accurate to ± 1/8 inch.

	LINE SIDE WIRE BEND	LOAD SIDE WIRE BEND
Non-Fused	3.02 (77)	4.11 (104)

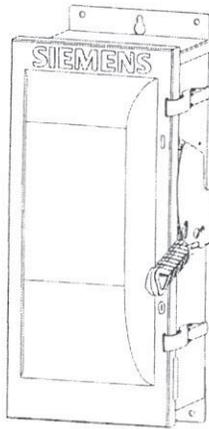
HNF261S & HNF361S
 Enclosure: 304 Stainless Steel
 .055 Thick (17 Gauge)
 HNF361SS
 Enclosure: 316 Stainless Steel
 .055 Thick (17 Gauge)

Siemens Energy & Automation, Inc.
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Heavy Duty Safety Switch

Type VBII, 200 Amp, Type 4/4X (Stainless Steel)

Standards and Ratings

- UL Listed under file #E4776
- Meets UL98 for switches and UL 50 for enclosures
- Meets NEMA Standard KS-1 for enclosed switches
- Meets NEC wire bending space requirements
- Rated 10,000 AIC as standard or 200,000 when protected by Class R, T or J fuses
- Rated 100,000 AIC at 600Vdc with Class R or J fuses
- I²t rated (Amps² x Seconds = 2,000,000)
- 12X overload current rating exceeds 10X industry standard

- Suitable for use as service entrance equipment

Features

- Quick-make and break switching action
- Double break visible blade design
- Highly visible ON/OFF indication
- Rugged installer friendly enclosure design
- Modular design allows quick and easy replacement of parts
- Front removable lugs which can easily be converted to copper body or compression type lugs
- Defeatable dual cover interlock

General Information

Catalog Number	Volts	Description	Shipping Weight (lbs.)
HF224S	240	2 Pole, 2 Wire, Fusible	48
HF324S	240	3 Pole, 3 Wire, Fusible	49
HF324SS ⁴	240	3 Pole, 3 Wire, Fusible	49
HF364S	600	3 Pole, 3 Wire, Fusible	49
HF364SS ⁴	600	3 Pole, 3 Wire, Fusible	49
HNF364S	600	3 Pole, 3 Wire, Non-Fusible	47
HNF364SS ⁴	600	3 Pole, 3 Wire, Non-Fusible	47

Horsepower Ratings ^{1 2} - 240 Volts

Catalog Number	1 Phase, 240V AC		3 Phase, 240V AC		250V DC
	Std	Max	Std	Max	
HF224S	15	—	25	60	40
HF324S & HF324SS	15	—	25	60	40

Horsepower Ratings ^{1 2} - 600 Volts

Catalog Number	3 Phase, 480V AC		3 Phase, 600V AC		600V DC
	Std	Max	Std	Max	
HF364S & HF364SS	50	125	60	150	50
HNF364S & HNF364SS ³	—	125	—	150	50

¹ Dual horsepower ratings:

Std - applies when non-time delay fuses are installed.

Max - applies when time-delay fuses are installed.

² Horsepower ratings listed also apply to Design E motors with no derating.

³ Also rated 60 HP on 3 phase, 240V AC systems.

⁴ The enclosure of catalog number HF324SS, HF364SS and HNF364SS is constructed from 316 grade stainless steel.

Product Specification Sheet HD200.4

Answers for industry.

SIEMENS

Product Specification Sheet #HD200.4 (page 2 of 3)

Accessories

Catalog Number	Description
HA161234	One Normally Open and Closed Auxiliary Switches
HA261234	Two Normally Open and Closed Auxiliary Switches
HA361234	Low Voltage Auxiliary Switch
HG61234	Equipment Ground Lug Kit
HG261234	Isolated Equipment Ground Lug Kit
HN64	Neutral Kit
HN264	200% Neutral Kit
HT24	240 Volt Class T Fuse Clip Kit (1-Pole per kit) (HF224S, HF324S)
HT64	600 Volt Class T Fuse Clip Kit (1-Pole per kit) (HF364S)
HR64	Class R Fuse Clip Kit (1 pole per kit) (HF224S, HF324S, HF364S)
HLC64	Copper Lug Kit (9 lugs per kit)
SSH150	1.50" Type 4/4X Hub
SSH200	2.00" Type 4/4X Hub

Replacement Parts

Catalog Number	Description
HFB64	Fusible Line Side Replacement Base (HF224S, HF324S, HF364S)
HBB64	Fusible Load Side Replacement Base (HF224S, HF324S, HF364S)
HNB64	Non-Fusible Replacement Base (HNF364S)
HH64S	Replacement Handle/Handle Guard
HL64	Replacement Lugs (3 lugs per kit)
HM64S	Replacement Mechanism
1	Replacement Door

Mechanical Lug Wire Ranges (75°C, Cu/Al)

Description	Wire Range
Line, Load, Neutral	#6 AWG - 300 Kcmil
200% and Standard Neutral Ground	#14-1/0AWG
Ground Lug Kit	#14-4 AWG
200% Neutral	(2) #6 AWG - 300 Kcmil

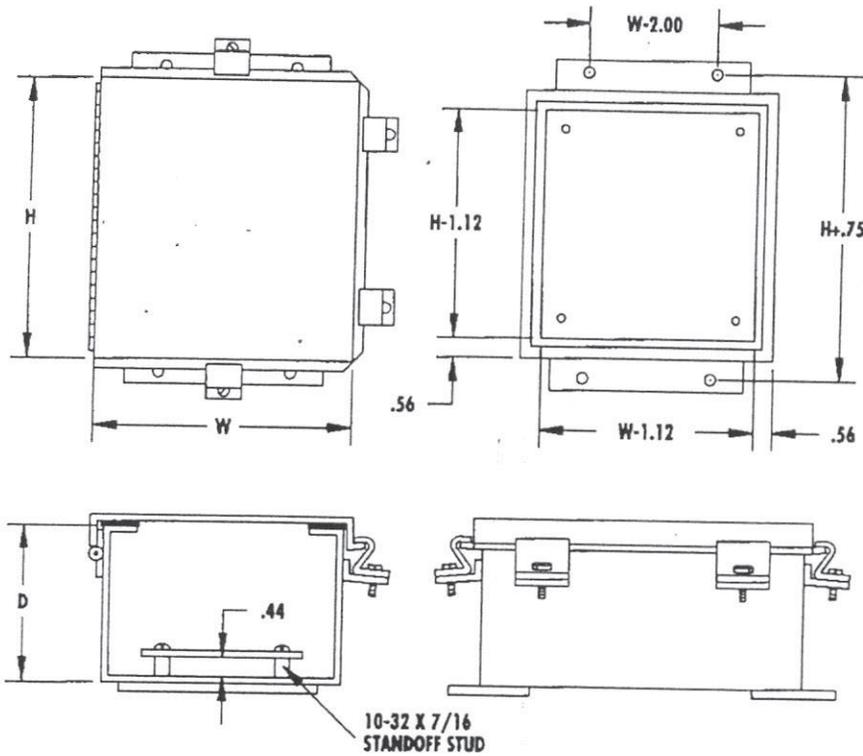
Compression Lugs

Wire Size	Burndy		Thomas-Betts		Ilsco	
	CU ONLY	CU/AL	CU ONLY	CU/AL	CU ONLY	CU/AL
#2	YA2C-L Box YA2C	YA2CA1	54142-TB	60117	CRB-2 CRB-2L	IACL-2 ACN-2
#1	YA1C-L Box YA1C	YA1CA1	54147 54947BE	60123	CRA-1-38 CRA-1L	ACN-1
1/0	YA25-L Box YA25	YA25A1	54153-TB 54949BE	60129 61130	CRA-0 CRA-1/0L	IACL-1/0 ACN-1/0
2/0	YA26-L3 YA26	YA26A6	54158 256-30695-1229 54910BE	60135 61136	CRA-2/0 CRA-2/0L	ACL-2/0 IACL-2/0
3/0	YA27-L3 YA27	YA27A1	54163-TB	60141 61142	CRC-3/0 CRB-3/0L	IACL-3/0 ACL-3/0
4/0	YA28-L3 YA28-TC38	YA28A1	54168 256-30695-1253	61148 60147	CRC-4/0 CRB-4/0L	IACL-4/0 ACL-4/0
250 Kcmil	YA29-L7		54173 54913BE	61156	CRA-250 CRA-250L	IACL-250
300 Kcmil				61162		

1 Place "Door" at the end of the switch catalog number.

STAINLESS STEEL JIC TYPE 4X-CONTINUOUS HINGE - LESS PANEL

NOTE: MAXIMUM SPACING BETWEEN CLAMPS IS 8.00.



CONSTRUCTION:

- CODE GAUGE TYPE 304 STAINLESS STEEL.
- SEAMS CONTINUOUSLY WELDED AND GROUND SMOOTH.
- STAINLESS STEEL SCREWS AND CLAMPS ON THREE SIDES OF COVER ASSURE WATERTIGHT SEAL.
- CONTINUOUS HINGE.
- OIL RESISTANT GASKET.
- OPTIONAL PANEL.
- ALSO MEETS INDUSTRY STANDARDS FOR TYPE 12 USE

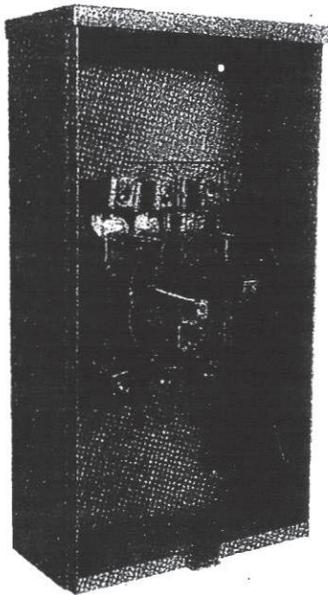
FINISH:

- ENCLOSURES ARE UNPAINTED AND HAVE A NUMBER 3 SMOOTH BRUSHED FINISH.

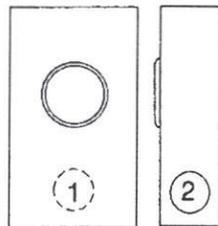
Enclosure Size HxWxD	List Price Each	Weight	Catalog Number
6x6x4		5.5	SJH664N4X
8x6x4		7	SJH864N4X
8x8x4		9	SJH884N4X
10x8x4		10.5	SJH1084N4X
12x10x6		15	SJH12106N4X
12x12x6		16	SJH12126N4X
14x12x6		20	SJH14126N4X
16x14x6		25	SJH16146N4X

NOTE: FOR PAINTED PANELS SEE PAGE 61

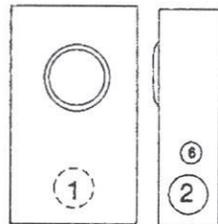
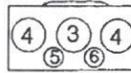
125 & 200 AMP—7 TERMINAL—RINGLESS—NON JAW CLAMPING—600 VAC



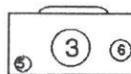
U7421-RL



7422
7423
9320
9321



7420
7421
7573
8100



U9320-RRL



125 AMP—7 TERMINAL—RINGLESS—3Ø4W

AMP	SERVICE	CATALOG NUMBER	HUB	CONNECTORS C/U/L		BY-PASS	DIMENSIONS			CONCENTRIC K.O.'S					
				LINE	LOAD		D	W	H	1	2	3	4	5	6
125	OH	U7573-RL	H.O.	#6-2/0	#6-2/0	LEVER	4 ⁷ / ₈	10	18 ¹ / ₂	2	2	2	—	1/4, 1/2	3/4
125	OH	U8100-RL	H.O.	#6-2/0	#6-2/0	NO	4 ⁷ / ₈	10	18 ¹ / ₂	2	2	2	—	1/4, 1/2	3/4
125	OH/UG	U9320-RRL	H.O.	#6-2/0	#6-2/0	LEVER	4 ⁷ / ₈	13	19	3	2 ¹ / ₂	3	3	1/4	1/4, 1/2
125	OH/UG	U9321-RRL	H.O.	#6-2/0	#6-2/0	NO	4 ¹ / ₂	13	19	3	2 ¹ / ₂	3	3	1/4	1/4, 1/2

200 AMP—7 TERMINAL—RINGLESS—3Ø4W

AMP	SERVICE	CATALOG NUMBER	HUB	CONNECTORS C/U/L		BY-PASS	DIMENSIONS			CONCENTRIC K.O.'S					
				LINE	LOAD		D	W	H	1	2	3	4	5	6
200	OH	U7420-RL	H.O.	#6-350 kcmil	#6-350 kcmil	NO	4 ⁷ / ₈	10	18 ¹ / ₂	3	2 ¹ / ₂	3	—	1/4, 1/2	3/4
200	OH	U7421-RL	H.O.	#6-350 kcmil	#6-350 kcmil	LEVER	4 ⁷ / ₈	10	18 ¹ / ₂	3	2 ¹ / ₂	3	—	1/4, 1/2	3/4
200	OH/UG	U7422-RXL	C.P.	#6-350 kcmil	#6-350 kcmil	NO	4 ⁷ / ₈	13	19	3	2 ¹ / ₂	3	3	1/4	1/4, 1/2
200	OH/UG	U7423-RXL	C.P.	#6-350 kcmil	#6-350 kcmil	LEVER	4 ¹ / ₂	13	19	3	2 ¹ / ₂	3	3	1/4	1/4, 1/2

HUBS: For proper hub selection see the hub suffix chart on the accessory page.
BY-PASS: Lever operates bypass device only; does not provide clamping action on meter spades.
CONNECTORS: Units supplied with extruded aluminum connectors and bonded triplex neutral.
 For field installed insulated neutral in the 13" wide 7422 and 7423 units order kit number K1047.

