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Project 00NK18518

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REPORT

on

COMPONENT - INDUSTRIAL CONTROL SWITCHES
FOR USE IN HAZARDOUS LOCATIONS

Magnecraft Electric Co.
Darlington, SC

DESCRIPTION

PRODUCT COVERED:

USL,CNL Class I, Div. 2, Groups A, B, C and D Hazardous Locations. Component – Magnetic Motor Controllers Class 782, followed by XBX or XDX, followed by H, followed by 10, 21, 32 or 37 followed by 2, 3 or 4 followed by 6 through 240, followed by A or D and may be followed by any number 1 to 9999 incl., for use with relay socket Cat. 70-461.

Series KHS may be followed by 11 or 17, followed by A or D, followed by 1, 2, 3 or 4, may be followed by 1, 2, 3 or 6, followed by any number 6 through 240 for AC coil voltages or from 6 through 110 for DC coil voltages, may be followed by any number 1 to 9999 incl.

ENGINEERING CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

USL indicates investigation to UL Standard for Industrial Control Equipment, UL 508 and UL Standard For Electrical Equipment For Use In Class I, Division 2, Groups A, B, C and D Hazardous Locations, UL 1604

CNL indicates investigation to Canadian Standard For Industrial Control Equipment C22.2 No. 14 and Canadian Standard Non-Incendive Electrical Equipment For Use In Class I, Division 2 Hazardous Locations, C22.2 No. 213-M1987.

GENERAL:

The devices are open type, hermetically sealed, magnetically operated, 2-pole or 4-pole, double-throw relays, with normally open and normally closed contacts. These devices are intended to be mounted in an enclosure suitable for the location. The Series KHS are identical in construction to the Class 782.

NOMENCLATURE:

Example:	782	XDX	H	10	2	24	D	9999
	I	II	III	IV	V	VI	VII	VIII

I - Basic series designation

II - Number of poles
XBX – 2 poles
XDX - 4 poles

III - H – Hermetically sealed cover

IV - Contact rating

10 - 3 A, Silver (gold flashed) contacts

21 – 5 A, Silver Cadmium Oxide contacts
32 – 1 A, Bifurcated, Silver (gold plated) contacts
37 – 3 A, Gold, Silver nickel contacts

V - Mounting code

2 – Mounting plate with stud on broad side
3 – Mounting plate with stud on narrow side
4 – Mounting plate with stud on top cover side

VI - Coil Voltages

6 through 240 volts

VII – Coil voltage designator

A – AC (50/60 Hz) coil
D – DC coil

VIII - 1 – 9999

SECONDARY NOMENCLATURE:

Example:	KHS	17	D	1	1	24	9999
	I	II	III	IV	V	VI	VII

I - Basic secondary series designation

II - Number of poles
11 – 2 poles, double throw
17 - 4 poles, double throw

III - Coil Voltage designator

A – AC (50/60 Hz) coil
D – DC coil

IV - Mounting options

1 – Socket mount solder terminals with stud on base

2 – Mounting plate on broad side

3 – Mounting plate on narrow side, solder terminals and stud on base

4 – Mounting plate with stud on tope side of cover and stud on base

V - Contact rating/material

1 – 3 A, silver (gold flashed) contacts
2 – 5 A, silver cadmium oxide contacts
3 – Gold, silver nickel contacts
4 – Bifurcated crossbar, silver gold plated

VI Coil Voltage

6 through 240 volts

VII 1 – 9999

RATINGS:

1 A Contacts -

1 A, 120/240 V ac, 50/60 Hz Resistive, 100,000 endurance operations.
1 A, 30 V dc, 100,000 endurance operations

3 A Contacts -

3 A, 120/240 V ac, 50/60 Hz Resistive, 100,000 endurance operations.
3 A, 30 V dc, 100,000, endurance operations.
1/16 hp (2.8 A FLA), 120 V ac; 1/10 hp, 120 V ac; 1/10 hp, 240 V ac

5 A Contacts -

5 A, 120/240 V ac, 50/60 Hz Resistive 100,000, endurance operations.
5 A, 30V dc, 100,000, endurance operations.

Maximum Ambient temperature –

Relays with 1 or 3 amp contacts, 70 °C
Relays with 5 amp contacts, 70°C

Ratings Relay Socket:	V	A
70-461-1	300	10

CONSTRUCTION DETAILS:

The product shall be constructed in accordance with the following description.

Spacings - Spacings of not less than 1/16 in. (1.6 mm) through-air and 1/8 in. (3.2 mm) measured over surface of insulating material (including printed wiring boards), are maintained between any uninsulated live part and an uninsulated live part of opposite polarity, uninsulated grounded part other than the enclosure, or exposed metal part.

Corrosion Protection - All parts are of corrosion resistant material or are plated or painted.

Marking - Ink-stamped label or embossed in the cover, Company name and Model designation, coil rating, contact ampere rating(s), horsepower, “WARNING: Do not disconnect while circuit is live unless area is know to be nonhazardous.” Class I, Div. 2, Groups A, B C and D, Hazardous Locations.

Internal Wiring - Unless noted, wiring is Recognized Component - Appliance Wiring Material (AVLV2), has 1/32 in. (0.793 mm) thick insulation and temperature rating of at least 105°C and voltage rating of at least 300 V.

Installation Instructions -

The installation or user manual shall contain the following markings:

1. EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C, & D, DIV. 2 HAZARDOUS LOCATIONS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D OR NON-HAZARDOUS LOCATIONS ONLY.

2. WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2.

3. WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.