| WIRE # | AWG* | DEVICE CONNECTED |
|---|---|---|
| 1 | 12-BLK | X20.1-1 K10, F101 |
| 2 | 12-BLK | X20.1-2 K10, F102 |
| 3 | 12-BLK | X20.1-3 K10 |
| 11 | 14-BLK | K7B, G21 |
| 12 | 14-BLK | K7B, G21 |
| 13 | 14-BLU | K7B, G21 |
| 14 | 14-BLU | K7B, G21 |
| 18 | 16-RED | U20, K226, K7A |
| 27 | 14-BLU | X20.4-27 G21, Y21 |
| 28 | 14-BLU | X20.4-28 G21, Y21 |
| 45 | 16-RED | K226, K26 |
| 20L1 | 12-BLK | K10, F21, F24, F26 |
| 20L2 | 12-BLK | K10, F22, F25, F27 |
| 20L3 | 12-BLK | K10, F23, F28 |
| 20L11 | 12-BLK | F21, U20 |
| 20L12 | 12-BLK | F22, U20 |
| 20L13 | 12-BLK | F23, U20 |
| 20L21 | 12-BLK | X20.2-21 U20, W21 |
| 20L22 | 12-BLK | X20.2-22 U20, W21 |
| 20L23 | 12-BLK | X20.3-23 U20, W21 |
| L31 | 14-BLK | F24, K7B |
| L32 | 14-BLK | F25, K7B |
| 1LV25 | 14-BLK | X20.4-24 M26, K26 |
| 1LV26 | 14-BLK | X20.4-25 M26, K26 |
| 1LW25 | 14-BLK | X20.4-26 M26, K26 |
| 1LU26 | 14-BLK | F26, K26 |
| 1LV26 | 14-BLK | F27, K26 |
| 1LW26 | 14-BLK | F28, K26 |
| L100 | 16-WHT | X20.4-100 T100, PE, K10, K226, K26, K7A, K7B, X16 |
| L101 | 16-RED | X20.5-101 F103, X16 |
| L110 | 16-RED | X20.5-110 K226, X16 |
| L117 | 16-RED | X20.5-117 K10, SA, X16 |
| L210 | 16-RED | X20.5-210 U20, X16 |
| L223 | 16-RED | X20.5-223 U20, X16 |
| L224 | 16-RED | X20.5-224 U20, X16 |
| L225 | 16-RED | X20.5-225 U20, X16 |
| L219 | 16-RED | X20.5-226 U20, X16 |
| L236 | 16-RED | X20.5-236 U20, X16 |
| L237 | 16-RED | X20.5-237 U20, X16 |
| L238 | 16-RED | X20.4-238 U20, X16 |
| L239 | 16-RED | X20.4-239 U20, X16 |
| L291 | 14-BLU | X20.4-291 U20, B291 |
| L292 | 14-BLU | X20.4-292 U20, B291 |
| L293 | | U20, B291 |
| R20.1 | 12-BLK | X20.2-R20.1 U20, B291 |
| R20.2 | 12-BLK | X20.2-R20.2 U20, B291 |

| S220 - GEARED LIMIT SWITCH | | |
|---|---|---|
| ELEMENT | FUNCTION | CONTACTS |
| S1 | EMERGENCY HOIST UPPER LIMIT | 11-12 |
| S2 | EMERGENCY HOIST LOWER LIMIT | 21-22 |
| S3 | OPERATING UPPER LIMIT | 31-32 |
| S4 | UPPER SLOW DOWN LIMIT | 41-42 |
| S5 | OPERATING LOWER LIMIT | 51-52 |
| S6 | LOWER SLOW DOWN LIMIT | 61-62 |

UL508A NOTES:

* WIRE AWG IN THIS COLUMN APPLIES TO WIRING INTERNAL TO HOIST CONTROL PANEL. FIELD WIRING REQUIREMENTS ARE SHOWN BELOW APPROPRIATE TERMINAL BOARD.

TO MAINTAIN ENCLOSURE TYPE 4, TYPE 12 RATING OF THE ENCLOSURE, USE CORD-GRIPS AND SEALING FITTINGS WITH A TYPE 4 AND TYPE 12 RATING

ALL PANEL COMPONENTS MUST BE LABELED TO MATCH SCHEMATIC WIRING DIAGRAM DESIGNATIONS

USE COPPER CONDUCTORS ONLY FOR ALL FIELD TERMINALS

SINGLE TERMINAL GROUND LUG PROVIDED FOR SUPPLY GROUNDING CONDUCTOR ONLY. DO NOT USE FOR PANEL WIRING.

LABEL FUSE BASES WITH FUSE USE SYMBOL AND SIZE IN AMPERES USING A PRINTED LABEL.

ADJACENT TO TRANSFORMER LABEL FUSE SYMBOL AND AMPACITY

LABEL TERMINAL BLOCKS WITH ALPHANUMERIC CODE AS SHOWN ON WIRING DIAGRAM USING PERMANENT MARKER.

SYMBOL DESIGNATIONS

A110 - PUSHBUTTON PENDANT
A275 - SLE3 MOTOR MONITOR
F21-F23 - HOIST CIRCUIT FUSING
F24-F25 - BRAKE CIRCUIT FUSING
F26-F28 - BLOWER FAN CIRCUIT FUSING
T100 - CONTROL TRANSFORMER
F101-102 - T100 PRIMARY FUSING
F103 - T100 SECONDARY FUSE
G21 - HOIST BRAKE RECTIFIER
K10 - MAIN CONTACTOR
K26 - BLOWER MOTOR CONTACTOR
K226 - BLOWER MOTOR DOB TIMER
K7A - BRAKE RELAY
K7B - BRAKE RELAY
U20 - HOIST INVERTER
R20 - HOIST BRAKING RESISTOR
S220 - GEARED LIMIT SWITCH
S260 - OPERATING UPPER LIMIT BYPASS
S261 - EMERGENCY UPPER LIMIT RESET
S262 - OPERATING LOWER LIMIT BYPASS
S263 - EMERGENCY LOWER LIMIT RESET
S228 - UPPER BLOCK LIMIT SWITCH
B275 - LOAD SENSOR
W21 - HOIST MOTOR
Y21 - HOIST MOTOR BRAKE
R292 - HOIST MOTOR PTC BRANCH RESISTOR
B291 - HOIST MOTOR PTC THERMISTOR
X20 - TERMINAL BLOCKS
PE - FRAME GROUND

⚠WARNING:
THIS EQUIPMENT MUST BE EFFECTIVELY GROUNDED ACCORDING TO APPLICABLE CODES.

⚠AVERTISSEMENT:
CET EQUIPMENT DOIT ETRE MIS A'LA TERRE EN ACCORDANCE AVEC LES NORMES EN VIGUEUR.

FIRST USED ON: PROJECT ONE

TIGHTENING TORQUE 20 LB.-IN.
POWER SUPPLY
X20.1
12 AWG WIRE 75°C (167°F) COPPER CONDUCTORS

TIGHTENING TORQUE 25 LB.-IN.
F21 F22 F23 25A CLASS J FUSE
20L11 20L12 20L13

TIGHTENING TORQUE 20 LB.-IN.
F24 F25 8A CLASS CC FUSE
L31 L32

TIGHTENING TORQUE 20 LB.-IN.
F26 F27 F28 0.3A CLASS CC FUSE
1LU26 1LV26 1LW26

TIGHTENING TORQUE 15 LB.-IN.
K10 L117 L100 20L1 20L2 20L3 SA

TIGHTENING TORQUE 7 LB.-IN.
K26 1LU26 1LV26 1LW26 45 L100 SA

TIGHTENING TORQUE 7 LB.-IN.
K7A 18 L17A L100 SA

TIGHTENING TORQUE 7 LB.-IN.
K7B L17 L51 L52 13 11 12 14 L100 SA

R20.1 R20.2 TO INVERTER
R20 EXTERNAL TO PANEL

BRAKE FAULT WARNING HORN
L80 100
EXTERNAL TO PANEL

TIGHTENING TORQUE 4.5 LB.-IN.
G21 1 2 3 4 5 6 11 12 13 14 L27 L28
V21 D.C. BRAKE COIL

TIGHTENING TORQUE 20 LB.-IN.
X20.2 21 22 23 R20.1 R20.2

TIGHTENING TORQUE 12 LB.-IN.
X20.3 101 110 117 210 223 224 225 219 236 237

TIGHTENING TORQUE 12 LB.-IN.
X20.4 238 239 24 25 26 27 28 100 100

TIGHTENING TORQUE 12 LB.-IN.
X20.5 291 292

12 AWG WIRE 75°C (167°F) COPPER CONDUCTORS

DOB 180 sec.
45 18 L110 A1 L100 A2 18 B1
K226

TIGHTENING TORQUE 20 LB.-IN.
CONNECT PER NAMEPLATE FOR PROPER VOLTAGE
1A CLASS CC FUSE F101 F102 100 VA PRIMARY T100 SECONDARY (X1) (X2) 1.4A CLASS CC FUSE F103 L101 L100

U20
PG-X3 CARD PORT CN5-C
IMPULSE VG+ SERIES 4 INVERTER
ENCODER WIRE COLOR
RED BLK WHT BLK GRN BLK
ENCODER CONNECTIONS
SHIELD AND DRAIN WIRES GROUND DRIVE END ONLY
IP +12 VDC
IG 0 VDC
FE GROUND
TB1 TB2

S4F INTERFACE CARD
R292
L210 L223 L224 L225 L219 L236 L237 L238 L239 L291 L292 L293
L100 L253 L254 L255 L256 L257 L258 L259 L210 L211 L212 L213 L214 L215 L216 L217 L218 L219 L220 L221 L222 L223 L224 L225 L226 L227 L228 L229 L230 L231 L232 L233 L234 L235

B1 B2 R/L1 S/L2 T/L3 U/T1 V/T2 W/T3
20PE.B 20PE.A 20L1 20L2 20L3 20L21 20L22 20L23
PG-X3 ENCODER CARD TIGHTENING TORQUE 1.95-2.21 LB.-IN.
S4F INTERFACE CARD TIGHTENING TORQUE 4.4-5.3 LB.-IN.
POWER TERMINALS TIGHTENING TORQUE 10.6-13.2 LB.-IN.
GND TERMINALS TIGHTENING TORQUE 17.7-22.1 LB.-IN.

U V W
U1 V1 W1 W26
HOIST BLOWER MOTOR
W26 BLOWER MOTOR 460 VOLT 100W-60Hz 0.22 FLA

CONNECT TO MAIN DISCONNECT
FEEDER CIRCUIT PROTECTION
25A MAX. DUAL ELEMENT TIME DELAY J-CLASS FUSES OR
25A MAX. LISTED THERMAL-MAGNETIC CIRCUIT BREAKER

# ELEMENTARY DIAGRAM

L1 L2 L3 G PE
X20.1/X20 1 2 3
14 AWG TAP WIRE
F101 F102 F103
X16/A16 101 X20/A20 101 L101
PRIMARY T100 SECONDARY (X1) (X2)
X20/A20 100 X16/A16 100 X20/A20 PE X16/A16 PE
K10 1 3 5 2 4 6
117 117 L117
110 110 L110
K226 18 45 K26 SA
L100
TO TROLLEY CIRCUIT 14 AWG TAP WIRE
20L1 20L2 20L3
K26 1LU26 1LV26 1LW26
X20.5/A20 24 25 26
K7A K7B L17 L17A
S4F INTERFACE CARD
M0 M2 M5 M3 M6 S1 S2 S3 S4 S5 S6 S7 S8 X2 +V AC
L210 L223 L224 L225 L219 L236 L237 L238 L239 L293 L292 L291
L80 BRAKE FAULT WARNING DEVICE
TO INVERTER PIN CONNECTIONS
R292 B291
X20.5/A20 291 292
L31 L32 K7B 12 11 13 14 G21 1 2 3 4 5 6 270 28 V21 D.C. BRAKE COIL 216VDC 45W 0.21A
U20 R/L1 S/L2 T/L3 14.8A MAX.
R20.1 R20.2 R20 B1 B2 IMPULSE VG+ SERIES 4 INVERTER PG-X3 IP IG FE
G U/T1 V/T2 W/T3 PE 20PE.B 20PE.A 20L21 20L22 20L23
U1 V1 W1 W21 HOIST MOTOR
B202 ENCODER 600PPR
W21 MOTOR 460 VOLT 7.5HP/5.4kW-120Hz 11.5 FLA THERMALLY PROTECTED TERMINALS L291 & L292

| UL508A HOIST CONTROL PANEL | |
|---|---|
| VOLTAGE | 460V |
| PHASES | 3 PH. |
| FREQUENCY | 60 Hz |
| TOTAL FLA | 18.8A |
| LARGEST MOTOR FLA | 11.5A |
| LONGEST MOTOR TIME RATE | 6 MIN ON-4 MIN OFF (IEC 60% DUTY |
| SCCR (kA) | 5kA |
| GROUP OCP | 29A |
| MAX FUSE | 25A |
| MAX CIRCUIT BREAKER | 25A |
| MAX VOLTAGE | 460V |
| ENCLOSURE TYPE | 4 / 12 |
| INPUT TERMINAL ID | X20.1: 1, 2, 3 |
| WIRING DIAGRAMS | 45656101 45656102 45656201 |

| ECN | Rev. | Description of change | Date | By | Original Scale: | NONE |
|---|---|---|---|---|---|---|
| 152316 | AD | FIXED MTR FAN,BRK HORN WIRE LBLS | 4/26/2019 | JKPWC | Drawn: | 8/22/2018 RTB |
| 152105 | AC | REVISED FEEDER OCP SIZE | 1/11/2019 | RTB | Approved: | |
| 152105 | AB | ADDED UL508A DATA | 12/17/2018 | RTB | Design Authority: | Wadesboro |

Columbus McKinnon Corporation
Hoist & Rigging - Americas
Amherst, NY USA

Description:
WIRING DIAGRAM - YK/SK HOIST
VG+S4 FLUX VECTOR CONTROL
TYPE A: BLS, GLS, PTC, SLE3
A20 PANEL - UL508A

Format: D Number: 45656102 Sheet: 1/1