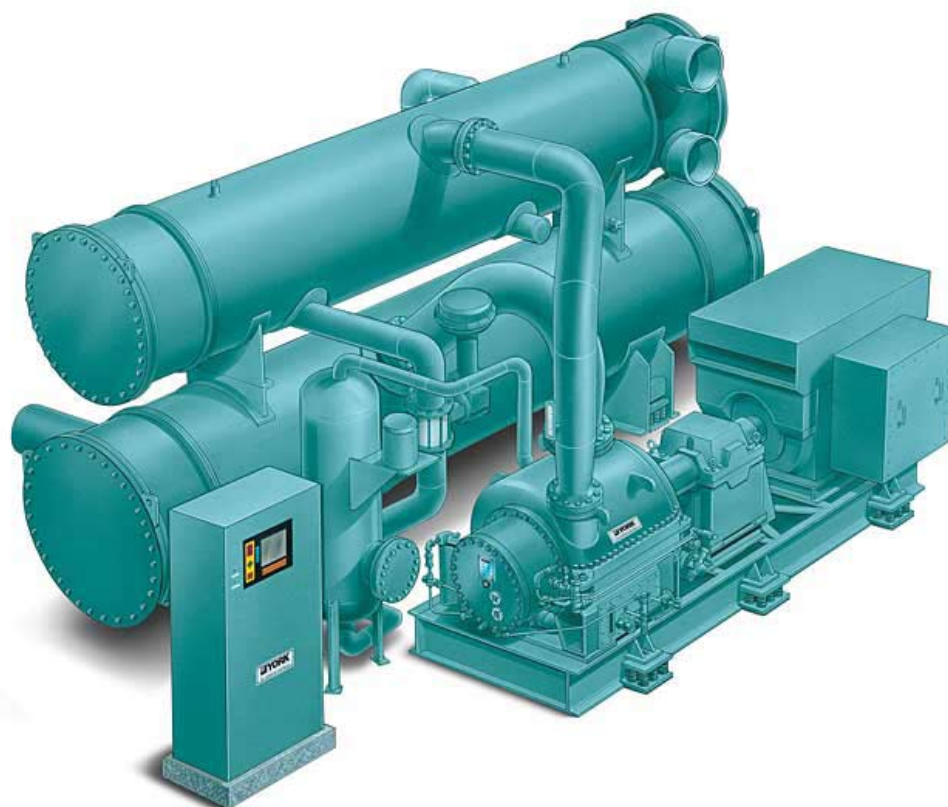


 BY JOHNSON CONTROLS	OM TITAN™ MULTI-STAGE CHILLER	
RENEWAL PARTS	NEW RELEASE	Form 160.72-RP1 (810)

**TITAN™ MULTISTAGE CHILLER WITH
RETROFIT OPTIVIEW CONTROL CENTER KIT
AND ELECTRO-MECHANICAL STARTER**



IMPORTANT!

READ BEFORE PROCEEDING!

GENERAL SAFETY GUIDELINES

This equipment is a relatively complicated apparatus. During installation, operation maintenance or service, individuals may be exposed to certain components or conditions including, but not limited to: refrigerants, materials under pressure, rotating components, and both high and low voltage. Each of these items has the potential, if misused or handled improperly, to cause bodily injury or death. It is the obligation and responsibility of operating/service personnel to identify and recognize these inherent hazards, protect themselves, and proceed safely in completing their tasks. Failure to comply with any of these requirements could result in serious damage to the equipment and the property in

which it is situated, as well as severe personal injury or death to themselves and people at the site.

This document is intended for use by owner-authorized operating/service personnel. It is expected that this individual possesses independent training that will enable them to perform their assigned tasks properly and safely. It is essential that, prior to performing any task on this equipment, this individual shall have read and understood this document and any referenced materials. This individual shall also be familiar with and comply with all applicable governmental standards and regulations pertaining to the task in question.



HIGH VOLTAGE Is used in the operation of this equipment. ***DEATH OR SERIOUS INJURY*** may result if personnel fail to observe safety precautions.

Work on electronic equipment should not be undertaken unless the individual(s) have been trained in the proper maintenance of equipment and is (are) familiar with its potential hazards.

Shut off power supply to the equipment before beginning work and follow lock-out procedures. When working inside equipment with power off, take care to discharge every capacitor likely to hold dangerous potential.

Be careful not to contact high voltage connections when installing or operating this equipment.



External wiring, unless specified as an optional connection in the manufacturer's product line, is not to be connected inside the OptiView cabinet. Devices such as relays, switches, transducers and controls and any external wiring must not be installed inside the micropanel. All wiring must be in accordance with Johnson Controls' published specifications and must be performed only by a qualified electrician. Johnson Controls will NOT be responsible for damage/problems resulting from improper connections to the controls or application of improper control signals. Failure to follow this warning will void the manufacturer's warranty and cause serious damage to property or personal injury.

CHANGEABILITY OF THIS DOCUMENT

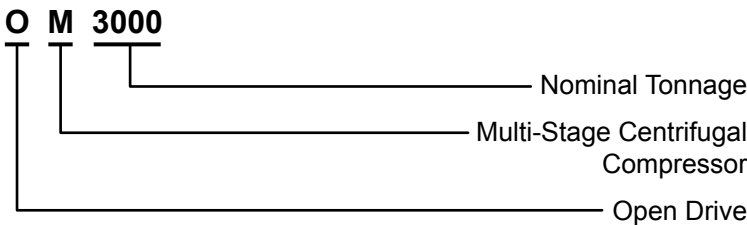
In complying with Johnson Controls’ policy for continuous product improvement, the information contained in this document is subject to change without notice. While Johnson Controls makes no commitment to update or provide current information automatically to the manual owner, that information, if applicable, can be obtained by contacting the nearest Johnson Controls Service office.

Operating/service personnel maintains the responsibility of the applicability of these documents to the competitive equipment the kit is installed on. If there is any question regarding the applicability of these documents, the technician should verify whether the equipment has been modified and if current literature is available with the owner of the equipment prior to performing any work on the chiller.

ASSOCIATED LITERATURE

MANUAL DESCRIPTION	FORM NUMBER
Service Instructions for YORK Titan Multi-Stage Chiller with OptiView Retrofit Controls	160.72-M1
Operating Instructions for YORK Titan Multi-Stage Chiller with OptiView Retrofit Controls	160.72-O1

NOMENCLATURE



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TABLE 1 - OPTIVIEW CONTROL CENTER PARTS

ITEM	DESCRIPTION	PART NO.	QUANTITY	FIGURE
2	Kit I/O Digital Control Broad	371 05583 000	1	4
3	Control Analog I/O Frick	031 02472 000	3	2
5	Mount Cable Strap White Adh	025 25155 000	25	2
6	Clamp, Ribbon Cable	025 25156 000	6	2
7	Clamp, Ribbon Cable	025 29103 000	6	2, 4
8	Housing Connr Electrical Plug	025 21417 000	1	2
9	Control I/O Board	031 01743 001	1	3
10	Microprocessor Board	031 02430 001	1	1
11	Ribbon Cable Panel	031 01799 000	1	5
13	Power Supply	025 34111 000	2	5
15	Din Rail, Mtg, 35 X 7.5 Mm, 2m Lg	025 29167 000	2	7
16	Switch, Keypad OptiView Panel	024 30994 000	1	7
17	Jumper Bar Assy 2 Pole	025 41864 000	5	4
19	Socket Relay	024 31713 000	1	7
20	Fuse Cartridge Ty 5 Amp	025 14019 000	2	3, 7
21	Cont Soc Wire Range 20-14	025 22215 000	4	2
22	Housing, SI-156 5 Circuit	025 34503 000	2	3, 7
23	Term Pin High Force 24-18	025 25157 000	21	7
24	Switch, Selector 3 Position	024 30931 000	1	7
25	Kit, Display Panel	331 01771 000	1	
26	Buss Bar Ground Panel	025 34122 000	1	3, 7
27	Gasket 1/16 X 1/2 Neoprene	071 05170 000	1	4
28	Relay Power	024 24965 000	1	4
30	Housing, Connr Plug Mini 2 Ckt Nat	025 29130 000	1	5
31	Duct Wire	025 34364 024	20 ft	5
32	Ribbon Cable Panel	031 02015 000	1	5
34	Ribbon Cable Panel	031 01779 000	1	2, 4
35	Contact Socket Mini Universal	025 28386 000	47	2, 4
36	Label Warning	035 03908 000	1	2
37	Duct Wire	025 34364 014	14 ft	4
38	Cover Wire Duct	025 34364 001	14 ft	4
39	Block Cont For 2 & 3 Position	024 30932 000	2	2
41	Cover Wire Duct	025 34364 002	20 ft	2
42	Housing Connr Plug Mini 24 Ckt Wht	025 34533 000	1	2, 4, 5
43	Block, Contact, 1 NC	024 36125 000	1	2, 4, 5
44	Block, Contact, 1 ND	024 36126 000	1	4
45	Relay Socket	024 31771 000	2	2, 5
46	Relay Timing Td Off 1 To 30 Sec	024 34896 000	2	2
47	Housing Connr Soc Comm 2 Ckt Nat	025 19667 000	1	4
48	Screw/Washer Assy (Sems)	021 18604 000	3	3
49	Cont Soc Awg Wire Size 20	025 19674 000	2	3

TABLE 1 - OPTIVIEW CONTROL CENTER PARTS (CONT'D)

ITEM	DESCRIPTION	PART NO.	QUANTITY	FIGURE
50	Contactor Elec 25 Amp	024 36743 000	3	5
52	Nut Hex #10-24	021 19622 000	12	4
53	Lockwasher Thin Extnl #10:	021 01136 000	12	4
54	Switch, Push-Pull	024 36124 000	1	2
57	Screw Tap Thd Cut Ty F	021 30766 000	2	
59	Screw Tap Thd Form Type B	021 14786 000	8	
61	Screw Tap Thd Cut Ty F	021 13726 000	1	
62	Washer Plain Type B .203 Id X	021 19175 000	4	
63	Spacer, Plastic, 3/8 Od X 1	021 19173 000	4	
64	Nut/Washer Assy (Keps)	021 19174 000	4	
65	Terminal Block, Plugable 6 Pos	025 37816 000	42	
67	Terminal Block, Plugable 8 Pos	025 37816 001	6	
69	E-Link Optiview/Latitude Panel	025 43894 000	1	
70	Lockwasher Thin Int #8:	021 01133 000	3	
71	Block Fuse	025 41970 000	8	
72	Block Term Partition Plate	025 39643 000	2	
73	Housing Connr Plug Mini 16 Ckt Wht	025 34143 000	4	
74	Surge Suppressor	031 00808 000	6	
75	Bag Cloth 4 Wide X 5-1/2	030 08277 000	1	
76	Housing, SI-156 13 Circuit	025 34504 000	2	
77	E-Link W/Serial Ports	025 43893 000	1	
78	Fuse, Cartridge 5 Amp,	025 15759 000	5	
79	Fuse, Cartridge 4 Amp,	025 34566 000	3	
81	Dwg-Panel Adapter Mounting	077 30823 000	1	
82	Housing Connr Plug Mini 8 Ckt Wht	025 34144 000	1	
83	Contact, Socket, Mini-	025 34145 000	5	
84	Housing Connr Plug Mini 20 Ckt Wht	025 34116 000	1	
85	Dwg-Panel, Back Panel	077 30824 000	1	
87	Feed thru Terminal	025 39641 000	105	
88	Block Term End Blk	025 39642 000	20	
89	Block Term End Plate	025 39644 000	7	
91	Nut Expansion	021 14661 000	52	
92	Screw Tap Thd Form Ty B #8 -32 x 1/4	021 14667 000	52	
93	2 teir Feed thru Terminal	025 41862 000	50	
94	Block Term End Plate	025 41863 000	3	
95	Block Term Self Grounding	025 39651 000	17	
97	Jumper Bar Assy 10 Pole	025 39974 000	2	
98	Jumper Bar Assy 4 Pole	025 41865 000	10	
99	Control Current Cm-2	031 00947 000	1	
100	Diode, Bridge	031 02882 000	1	
101	Wiring Resistor Assy	575 00364 001	1	

TABLE 1 - OPTIVIEW CONTROL CENTER PARTS (CONT'D)

ITEM	DESCRIPTION	PART NO.	QUANTITY	FIGURE
102	Dwg-Diag Wiring Om Optiview	077 30454 000	1	
103	Fuse Cartridge Ty 15 Amp	025 14384 000	2	
106	Jumper Bar Assy 3 Pole	025 39664 000	1	
107	Kit, Current Transformer, Yk	375 17422 707	1	
108	Wire Elec 18 Awg Black	025 08913 000	150 ft	
109	Wire Elec 18 Awg Grn/Yel Per	025 34025 000	25 ft	
110	Wire Elec 18 Awg White	025 12729 000	50 ft	
111	Wire Elec 14 Awg Black	025 08897 000	20 ft	
112	Wire 2-Condtr W/Foil Shield	025 28701 002	25 ft	
113	Wire Elec 18 Awg Red Per Aso	025 34017 000	25 ft	
114	Wire Elec 18 Awg Lt Blue	025 34021 000	25 ft	

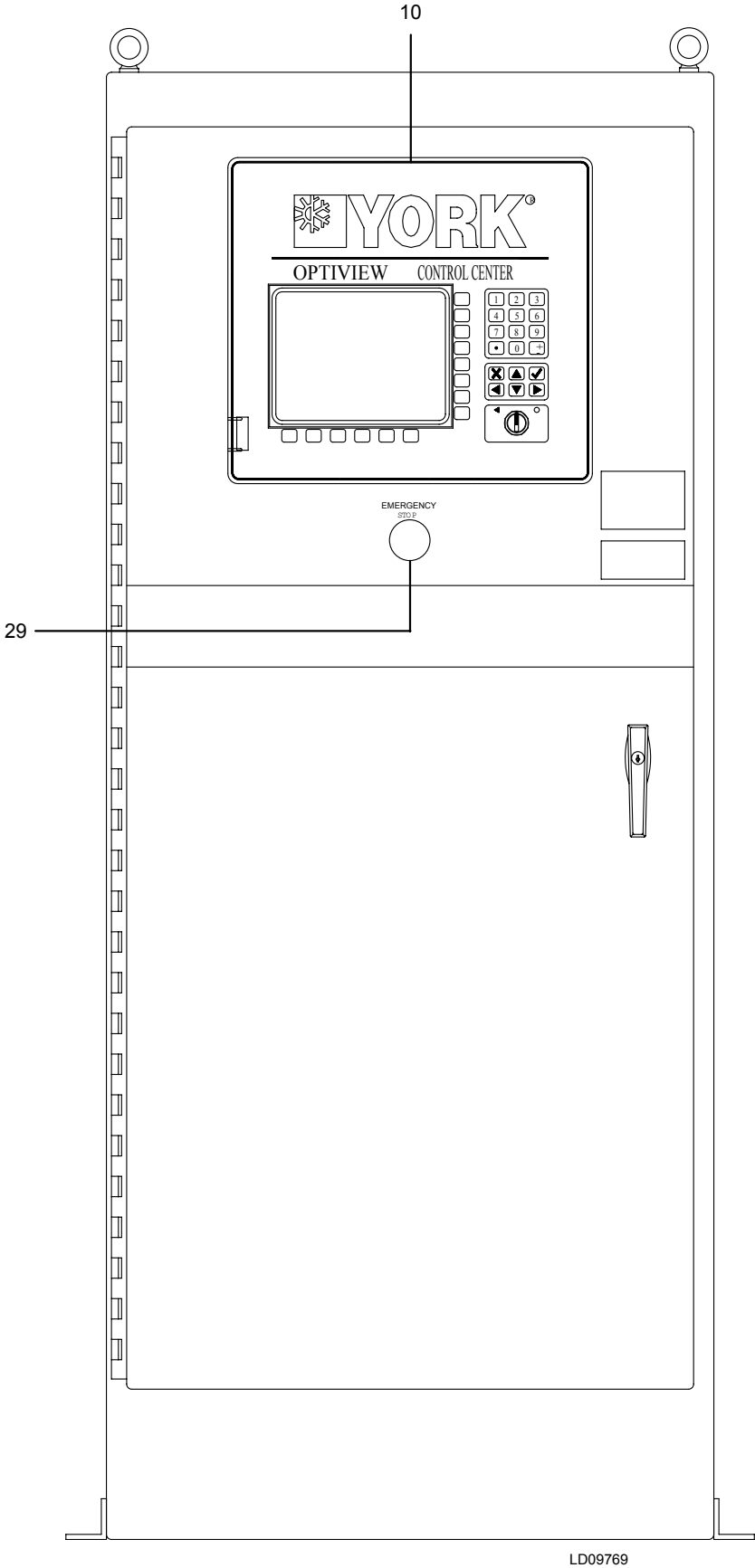


FIGURE 1 - FRONT OF GRAPHIC CONTROL CENTER

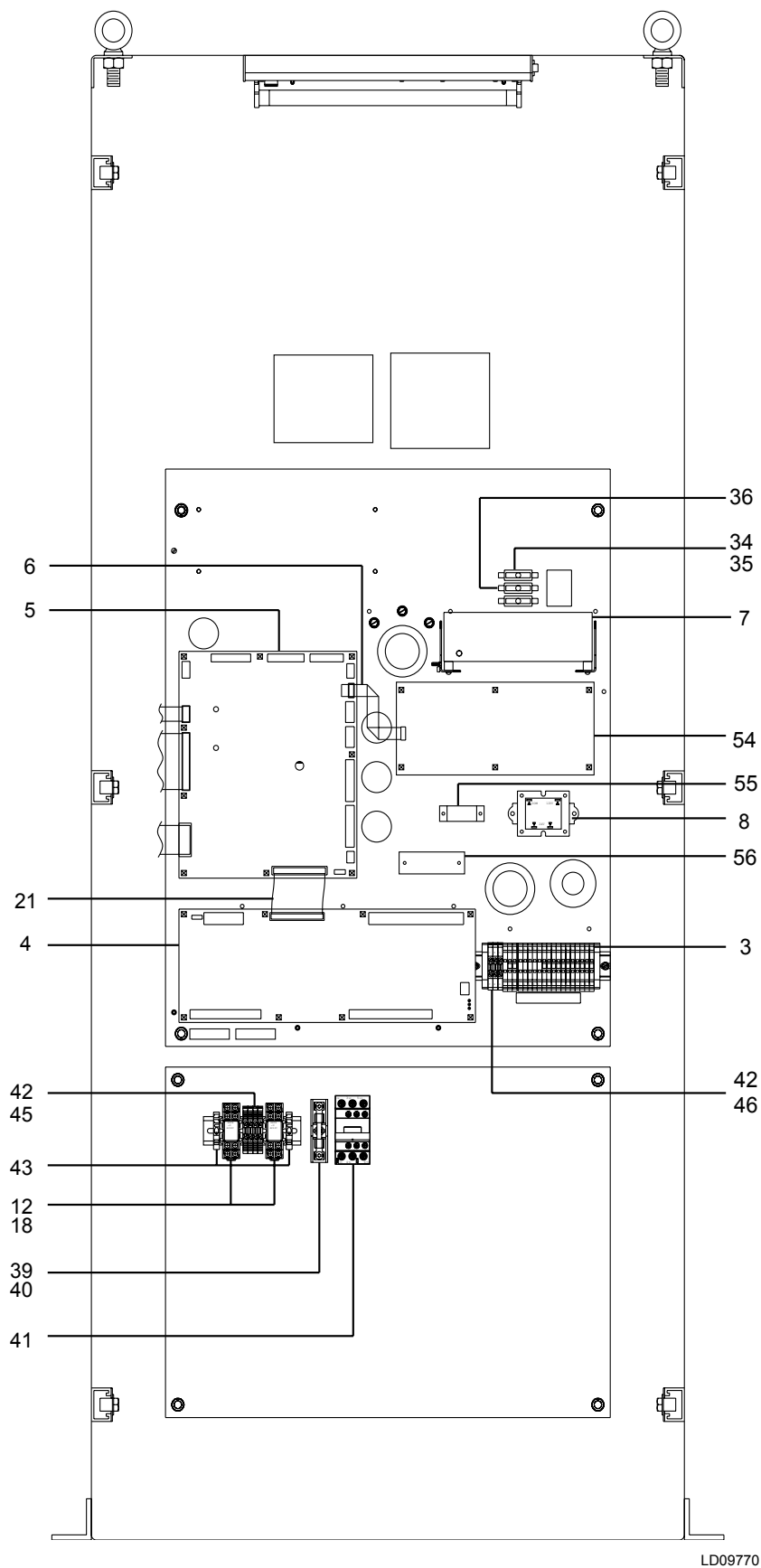
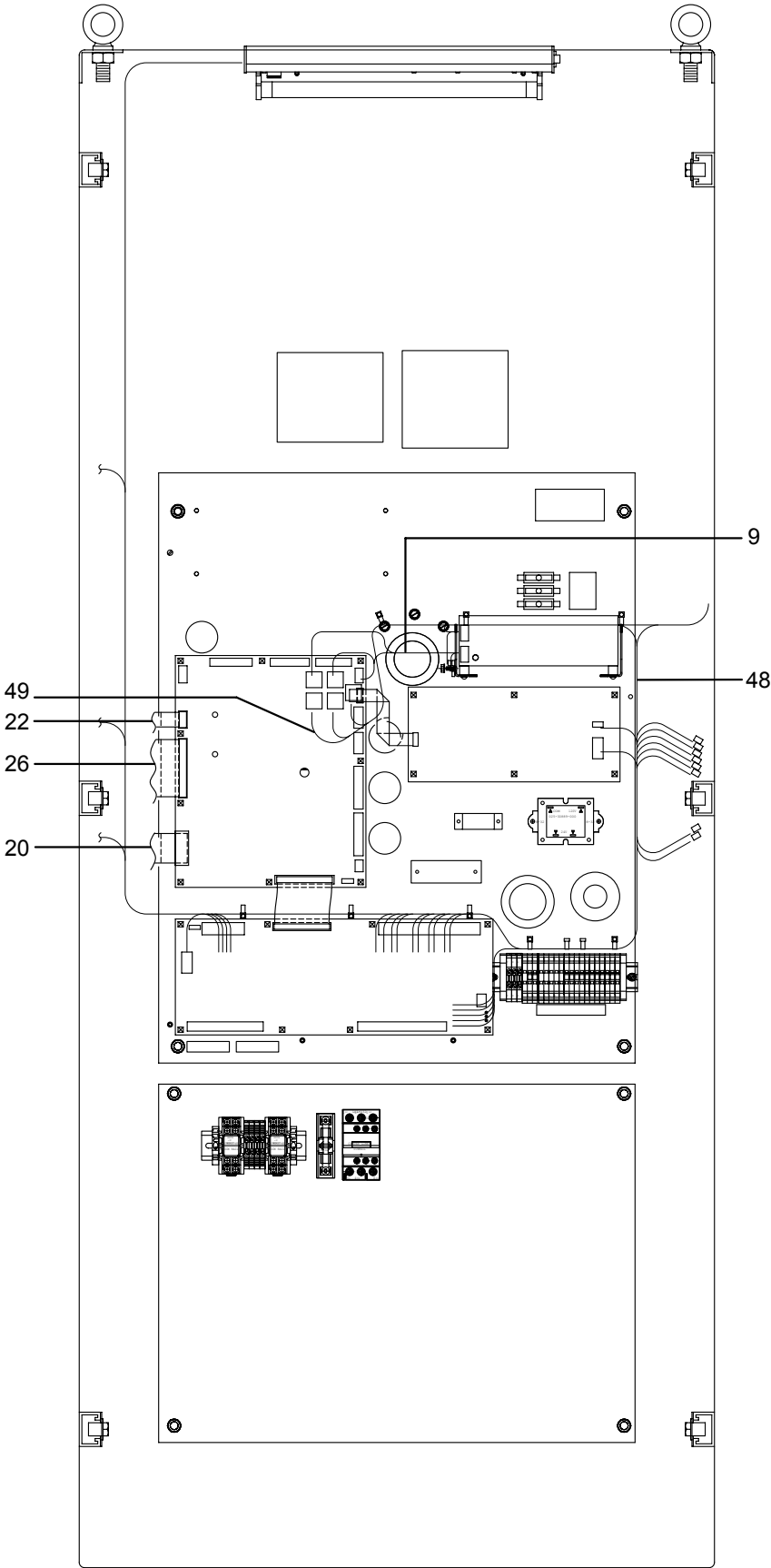
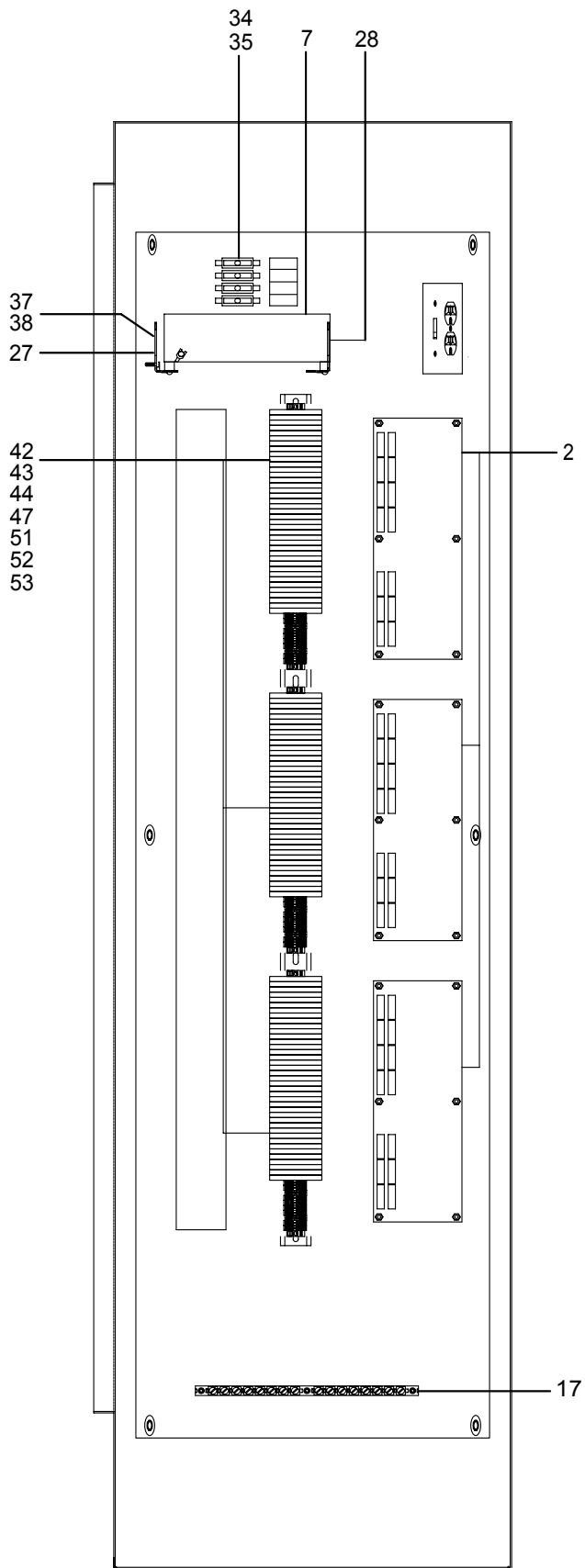


FIGURE 2 - INSIDE - BACK PLATE



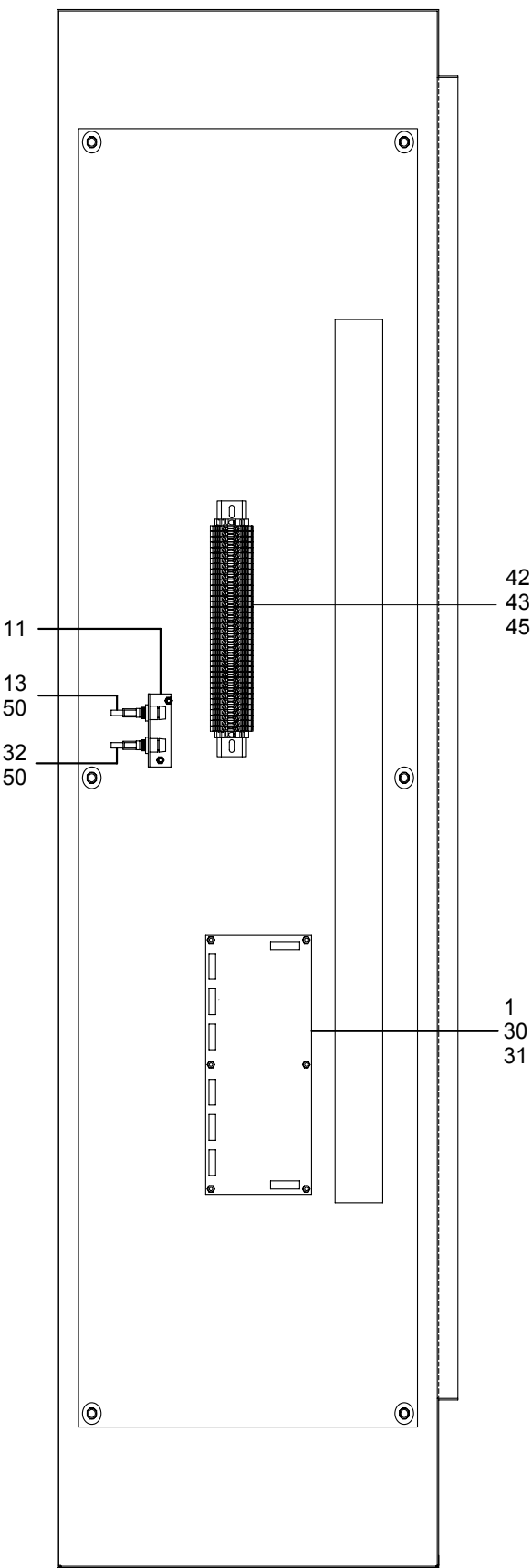
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FIGURE 3 - INSIDE BACK PLATE WIRING



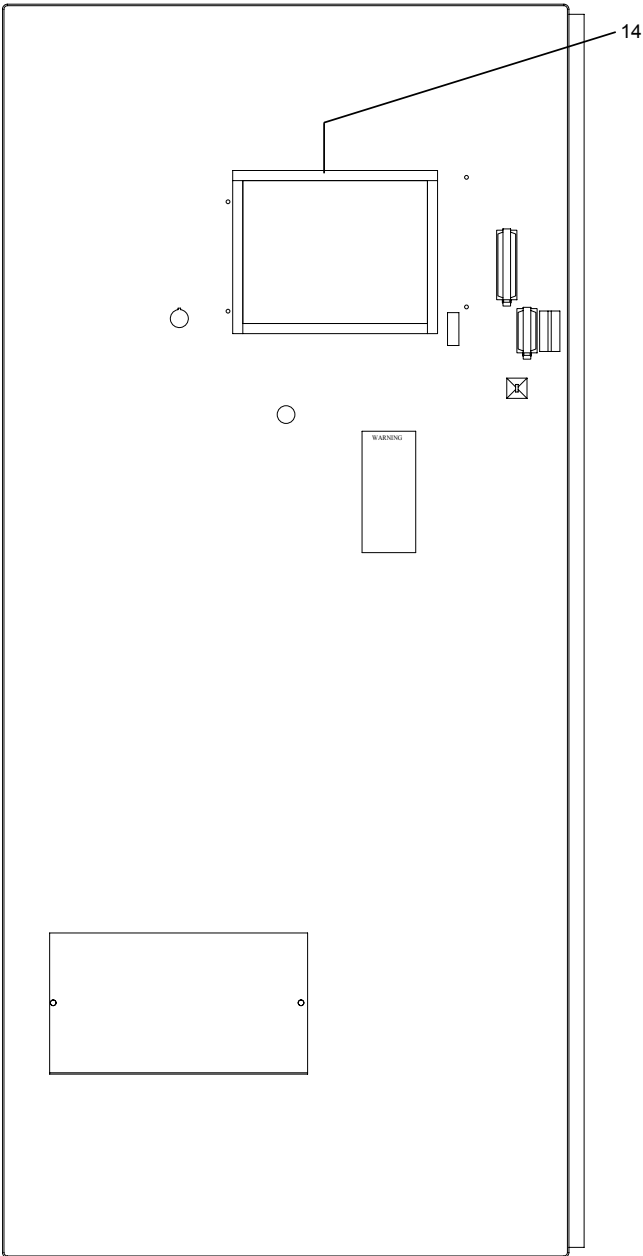
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FIGURE 4 - INSIDE LEFT PANEL



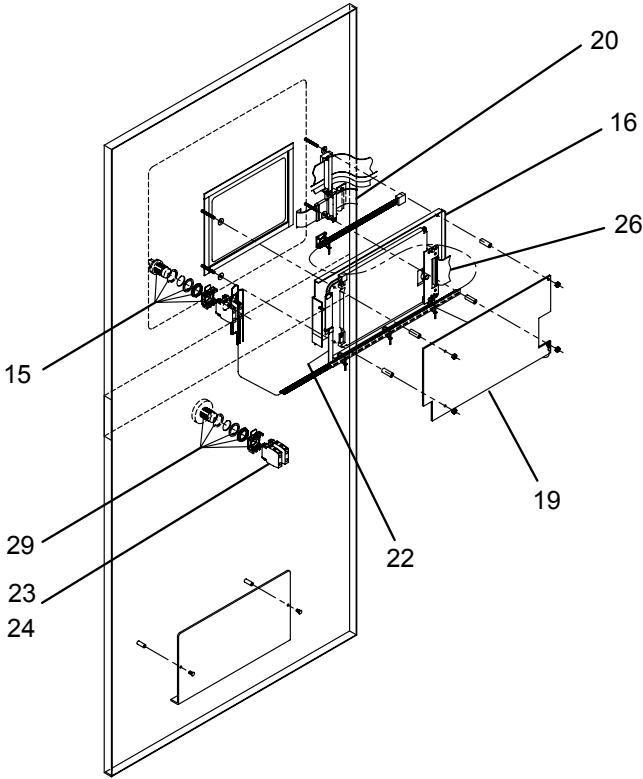
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FIGURE 5 - INSIDE RIGHT PANEL



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FIGURE 6 - INSIDE DOOR



LD09775

FIGURE 7 - INSIDE DOOR ASSEMBLY

NOTES

The following factors can be used to convert from English to the most common SI Metric values.

TABLE 2 - SI METRIC CONVERSION

MEASUREMENT	MULTIPLY ENGLISH UNIT	BY FACTOR	TO OBTAIN METRIC UNIT
Capacity	Tons Refrigerant Effect (ton)	3.516	Kilowatts (kW)
Power	Horsepower	0.7457	Kilowatts (kW)
Flow Rate	Gallons / Minute (gpm)	0.0631	Liters / Second (l/s)
Length	Feet (ft)	304.8	Meters (m)
	Inches (in)	25.4	Millimeters (mm)
Weight	Pounds (lbs)	0.4538	Kilograms (kg)
Velocity	Feet / Second (fps)	0.3048	Meters / Second (m/s)
Pressure Drop	Feet of Water (ft)	2.989	Kilopascals (kPa)
	Pounds / Square Inch (psi)	6.895	Kilopascals (kPa)

TEMPERATURE

To convert degrees Fahrenheit (°F) to degrees Celsius (°C), subtract 32° and multiply by 5/9 or 0.5556.

Example: $(45.0^{\circ}\text{F} - 32^{\circ}) \times 0.5556 = 27.2^{\circ}\text{C}$

To convert a temperature range (i.e., a range of 10°F) from Fahrenheit to Celsius, multiply by 5/9 or 0.5556.

Example: $10.0^{\circ}\text{F range} \times 0.5556 = 5.6^{\circ}\text{C range}$



BY JOHNSON CONTROLS

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Form 160.72-RP1 (810)
New Release

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