



Medium Voltage Solid State Starter

Renewal Parts

Supersedes 160.00-RP5 (706)

Form 160.00-RP5 (621)

Medium Voltage 4160 V and 2300 V, 60 Hz, and 3300 V, 50 Hz
Solid State Starters for YK and YT Chiller Applications

CURRENT-GUARD® STARTER



Issue Date:
June 30, 2021



Important!

Read before proceeding!

General safety guidelines

This equipment is a relatively complicated apparatus. During rigging, installation, operation, maintenance, or service, individuals may be exposed to certain components or conditions including, but not limited to: heavy objects, 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 rigging, installation, and 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 rigging, installation, and operating/service personnel. It is expected that these individuals possess 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 the on-product labels, this document and any referenced materials. This individual shall also be familiar with and comply with all applicable industry and governmental standards and regulations pertaining to the task in question.



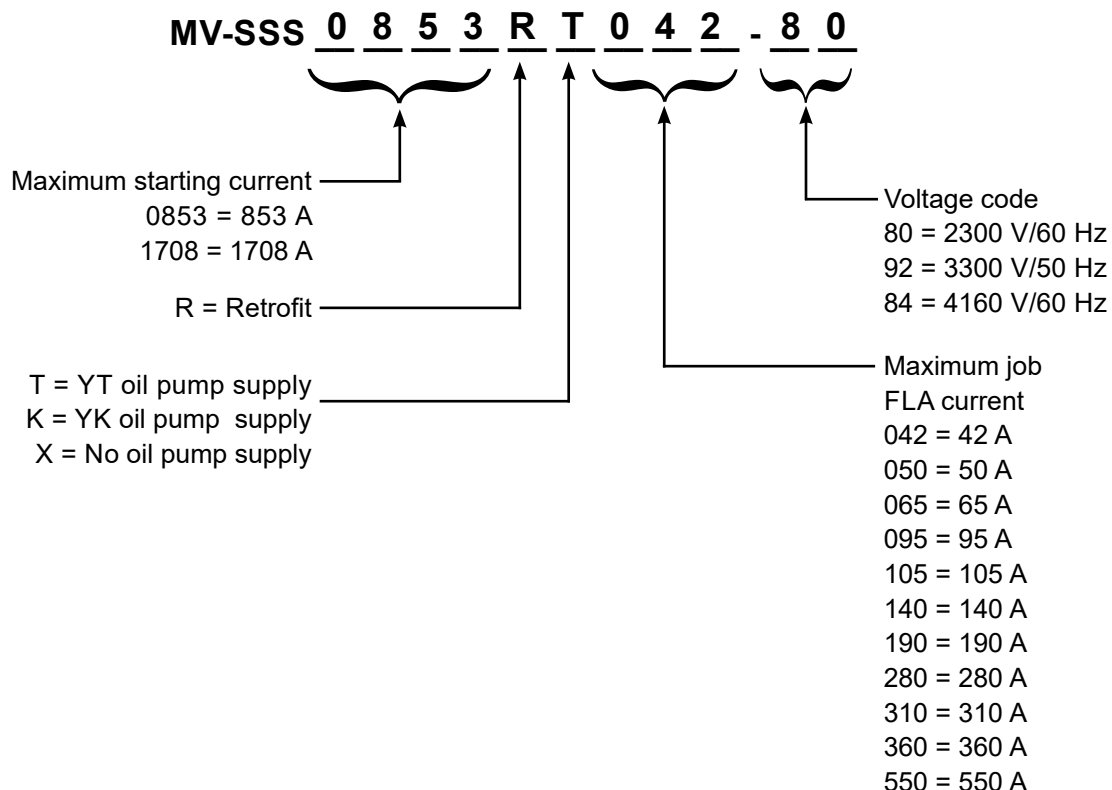
External wiring, unless specified as an optional connection in the manufacturer's product line, is not to be connected inside the control cabinet. Devices such as relays, switches, transducers and controls and any external wiring must not be installed inside the micro panel. All wiring must be in accordance 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.

This instruction lists the renewal parts of the YORK Medium Voltage Solid State Starter (MV-SSS). Qualification in this case requires that the individual hold a certificate, proving satisfactory completion of formal training on proper procedures and safety requirements for working on equipment in the medium voltage (600 VAC to 7500 VAC) class. The qualified individual furthermore is to be knowledgeable of, and adhere to, all safe work practices as required by NEC, OSHA, and NFPA 70E. Because available fault current is determined largely due to sizing of the upstream transformers, wiring, and protective devices - available fault current and arc-flash hazard levels must be determined by personnel responsible for the electrical systems within the facility where this product is installed. Proper personal protective equipment (PPE) is to be utilized where and when required. This entire publication is to be read thoroughly before servicing this product. Proper lock-out and tag-out procedures are mandatory.



Under no circumstances should any live testing be performed with the main cabinet doors open, exposing medium voltage components. Only the low-voltage access door is permitted to be open during live testing or operation of the unit. The energized safe approach distance for this product is to be determined by NFPA70e. Non-qualified personnel are not to be present within this boundary during energizing, de-energizing, or energized testing (even with cabinet doors closed) on this starter!

Unit model number nomenclature

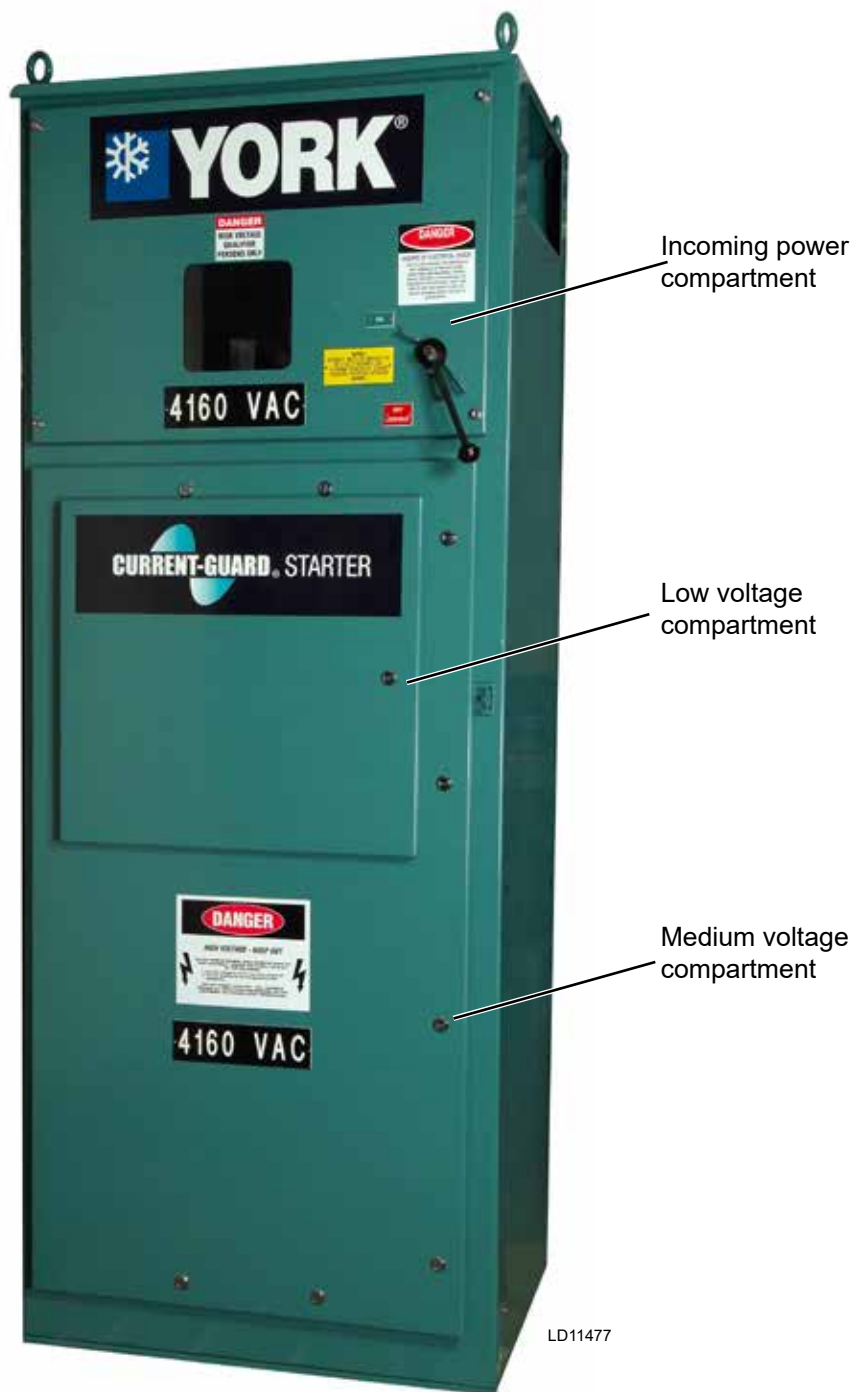


36 in. cabinet								
Unit model reference chart								
Model number	Max. FLA	Max. LRA	45% LRA	CT 1, 2, 3	FU 1, 2, 3	Power stack assembly P/N		
						2300 VAC	3300 VAC	4160 VAC
MVSSS0853R_042-V	42	1896	853	864:1	3R	031-02578-000	031-02578-000	031-02580-000
MVSSS0853R_050-V	50	1896	853	864:1	4R	031-02578-000	031-02578-000	031-02580-000
MVSSS0853R_065-V	65	1896	853	864:1	6R	031-02578-000	031-02578-000	031-02580-000
MVSSS0853R_095-V	95	1896	853	864:1	9R	031-02578-000	031-02578-000	031-02580-000
MVSSS0853R_105-V	105	1896	853	864:1	9R	031-02578-000	031-02578-000	031-02580-000
MVSSS0853R_140-V	140	1896	853	864:1	12R	031-02578-000	031-02578-000	031-02580-000
MVSSS0853R_190-V	190	1896	853	864:1	12R	031-02578-000	031-02578-000	031-02580-000
MVSSS0853R_280-V	280	1896	853	2640:1	18R	031-02581-000	031-02581-000	031-02583-000
MVSSS0853R_310-V	310	1896	853	2640:1	24R	031-02581-000	031-02581-000	031-02583-000
MVSSS0853R_360-V	360	1896	853	2640:1	24R	031-02581-000	031-02581-000	031-02583-000
MVSSS1708R_360-V	360	3796	1708	2640:1	24R	031-02581-000	031-02581-000	031-02583-000

72 in. cabinet								
Unit model reference chart								
Model number	Max. FLA	Max. LRA	45% LRA	CT 1, 2, 3	FU 1, 2, 3	Power stack assembly P/N		
						2300 VAC	3300 VAC	4160 VAC
MVSSS1708R_550-V	550	3796	1708	2640:1	38R	031-02581-000	031-02581-000	031-02583-000

List of tables

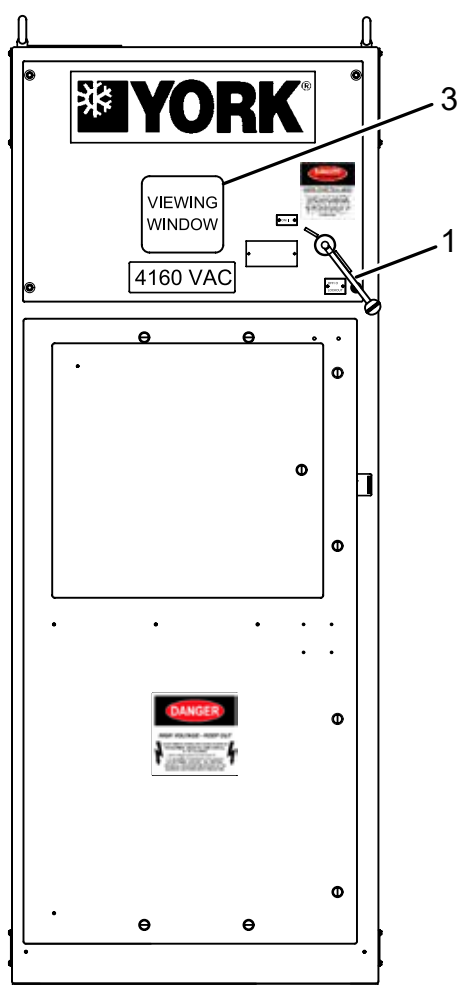
TABLE 1 - Exterior components	5
TABLE 2 - Incoming power compartment.....	6
TABLE 3 - Low voltage compartment.....	7
TABLE 4 - Medium voltage compartment.....	8
TABLE 5 - Fuses	10
TABLE 6 - Accessories.....	10



36 in. cabinet shown

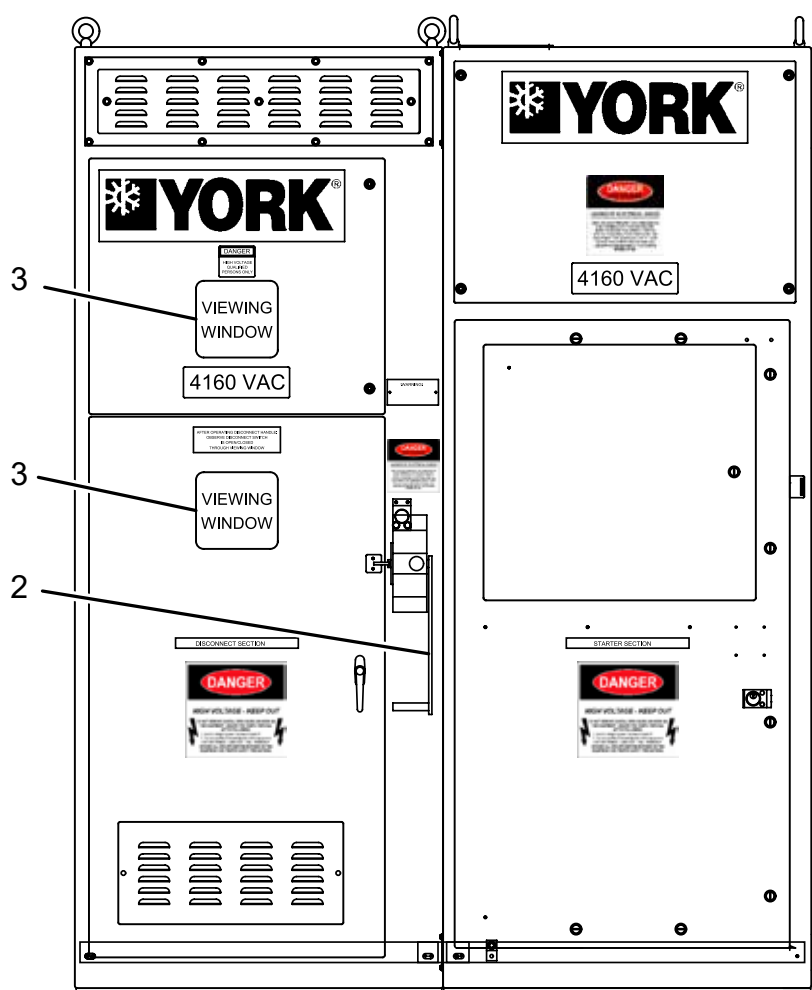
Table 1 - Exterior components

Item	Description	YORK P/N
1	400 A disconnect handle assy	031-02595-000
2	600 A disconnect handle assy	031-02597-000
3	Lexan disconnect viewing window	031-02594-000



LD11906

36 in. cabinet



SECTION 1
DISCONNECT SECTION

SECTION 2
STARTER SECTION

LD11961

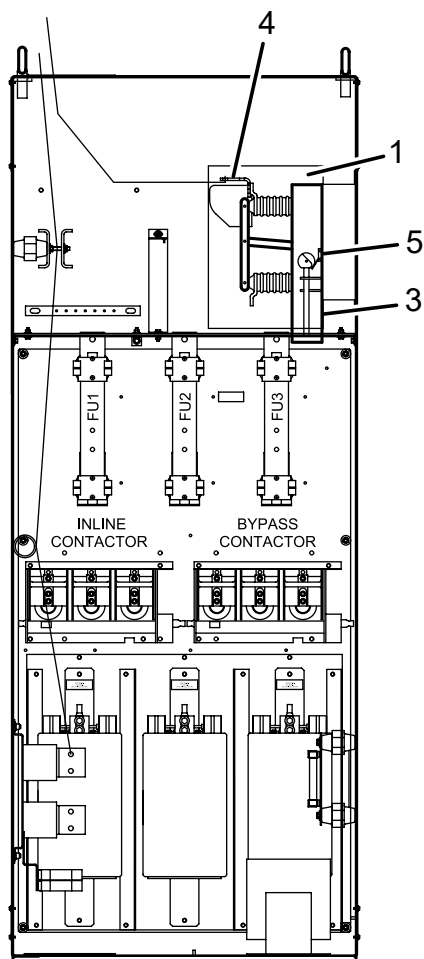
72 in. cabinet

Figure 1 - Exterior components

Table 2 - Incoming power compartment

Item	Description	YORK P/N
1	400 A, 5 kV disconnect switch	031-02589-000
2	600 A, 5 kV disconnect switch	031-02590-000
3	400 A, disconnect guillotine assy	031-02596-000
4	Incoming termination bus	031-02592-000
5	400 A, disconnect aux switch	031-02598-000
*	600 A, disconnect aux switch	031-02599-000

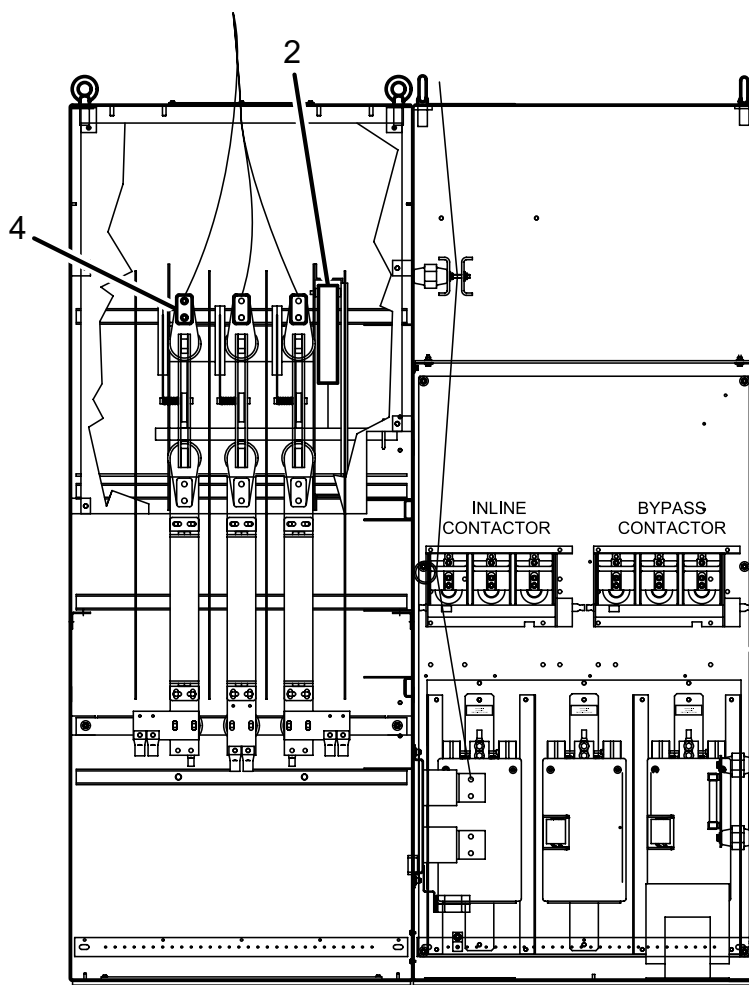
* Items are **not** shown.



FRONT INTERIOR VIEW

36 in. cabinet

LD11960



DISCONNECT SECTION

STARTER SECTION

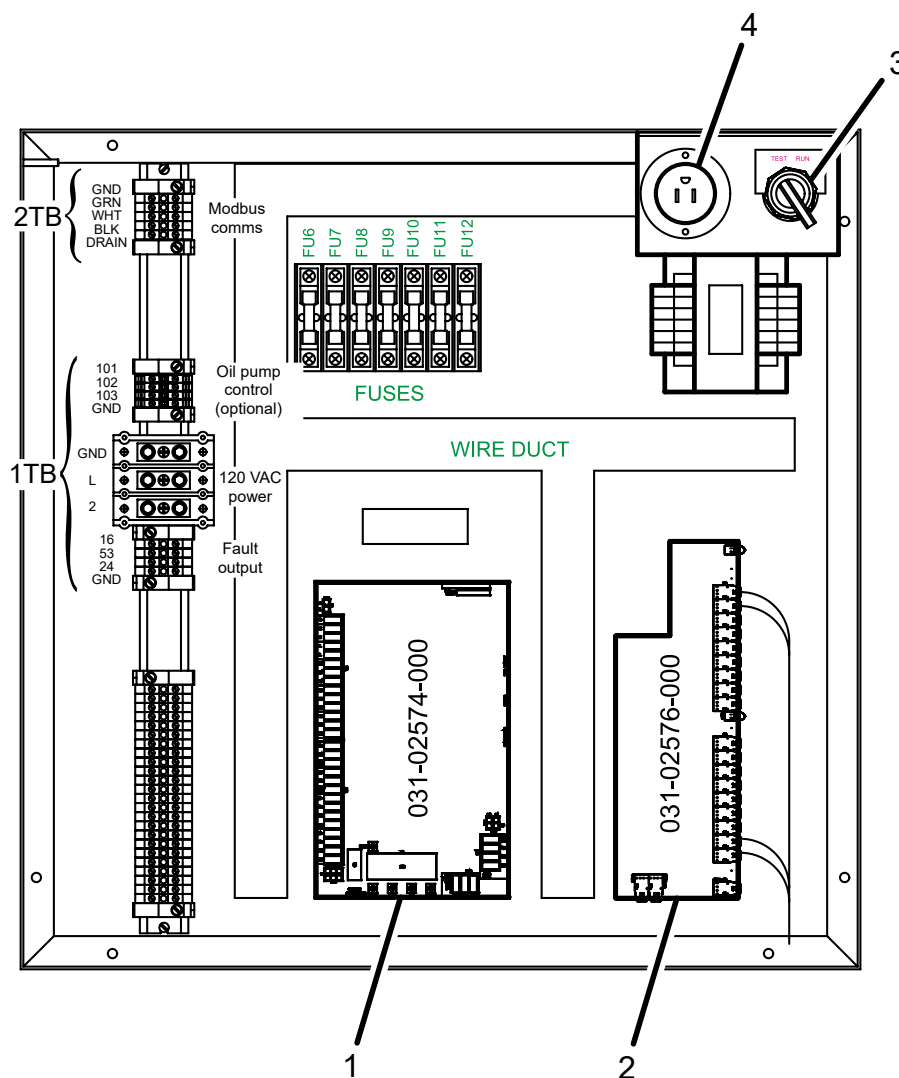
72 in. cabinet

LD11962

Figure 2 - Incoming power compartment

Table 3 - Low voltage compartment

Item	Description	YORK P/N
1	Controller board	031-02574-000
2	Fiber-optic transmitter board	031-02576-000
3	Test switch	031-02617-000
4	Test plug, 115 VAC, 15 A	031-02618-000



LD11910

Figure 3 - Low voltage compartment

Table 4 - Medium voltage compartment

Item	Description	YORK P/N
1	Gate driver board	031-02575-000
2	7.2 kV resistor divider board	031-02577-000
3	Power stack assembly, 2.3 kV/3.3 kV, 208 A	031-02578-000
3	Power stack assembly, 5 kV, 208 A	031-02580-000
4	Power stack assembly, 2.3 kV/3.3 kV, 415 A	031-02581-000
4	Power stack assembly, 5 kV, 415 A	031-02583-000
5	Vacuum contactor, 400 A, 5 kV (In-line or bypass)	031-02584-000
6	Vacuum contactor, 720 A, 5 kV (in-line or bypass)	031-02585-000
7	Control transformer, 3 kVA, 2300 V-120 V, 60 Hz, 1 ph	031-02619-000
7	Control transformer, 3 kVA, 3300 V-120 V, 50 Hz, 1 ph	031-02620-000
7	Control transformer, 3 kVA, 4160 V-120 V, 60 Hz, 1 ph	031-02586-000
8	Current transformer, 864:1	031-02587-000
8	Current transformer, 2640:1	031-02588-000
9	R-fuse clip assembly, 1 ph	031-02591-000
10	Outgoing termination bus	031-02593-000

Notes:

See Unit Model Reference Chart on page 3 for correct Power Stack Assembly.

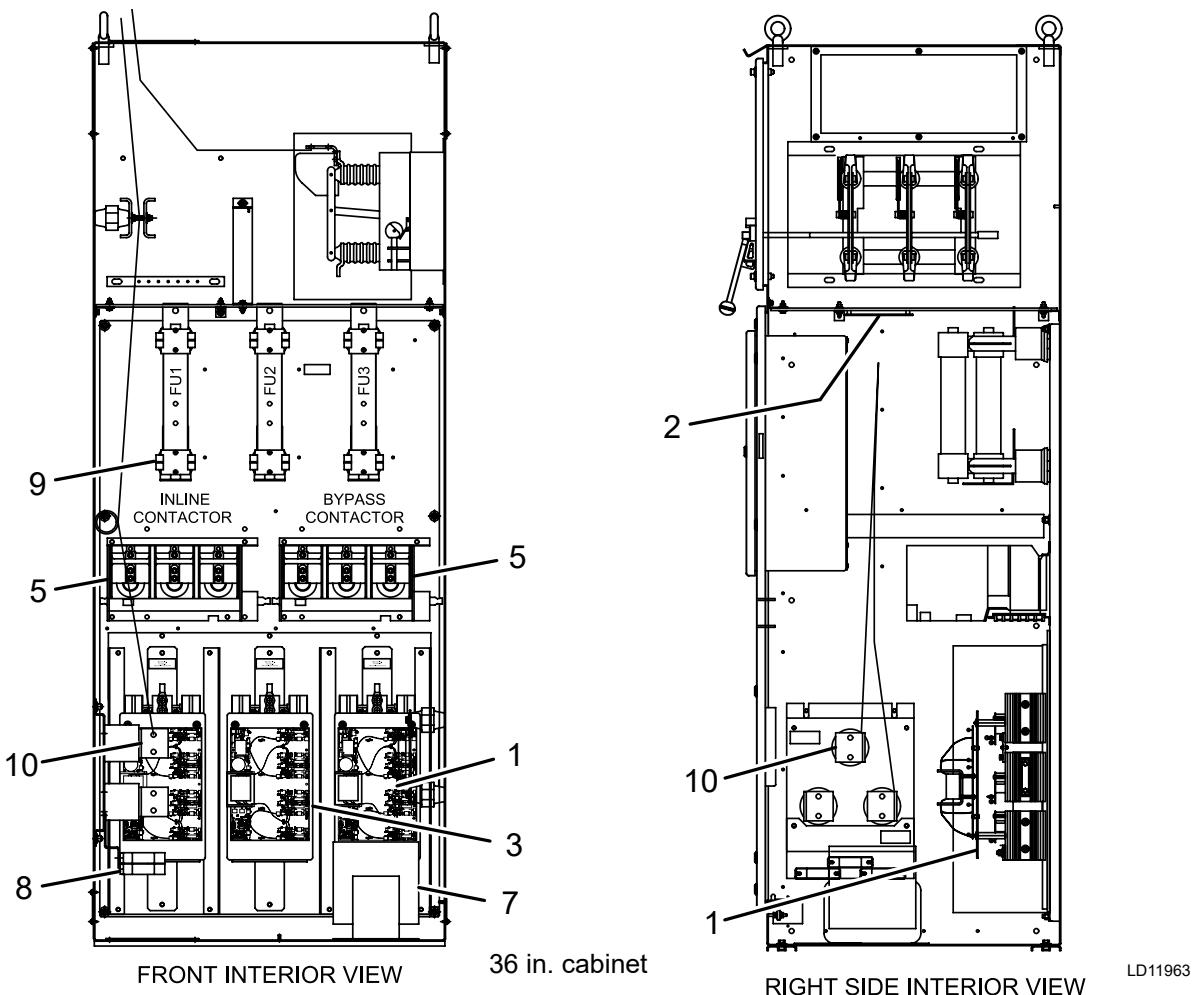
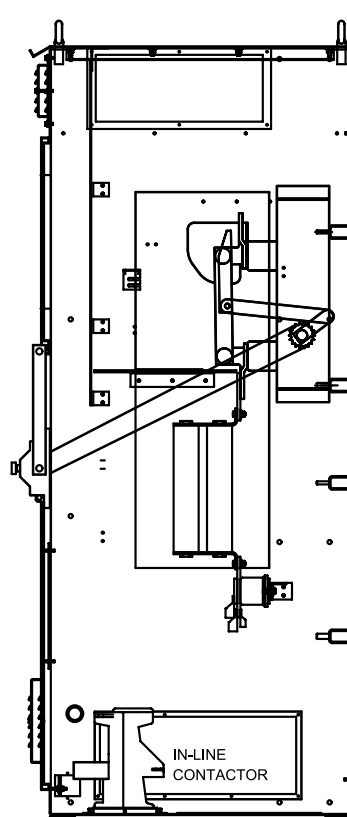
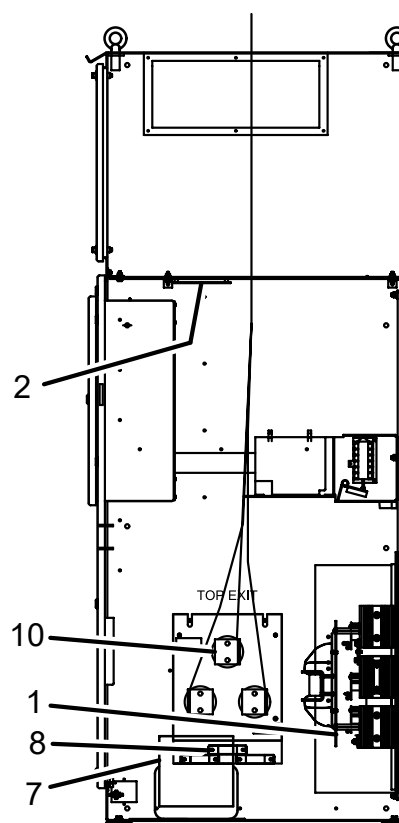


Figure 4 - Medium voltage compartment



72 in. cabinet



LD11964

9

Table 5 - Fuses

Item	Description	YORK P/N
1A	Fuse, 3R, 2.3 kV	031-02600-000
1A	Fuse, 4R, 2.3 kV	031-02601-000
1A	Fuse, 6R, 2.3 kV	031-02602-000
1A	Fuse, 9R, 2.3 kV	031-02603-000
1A	Fuse, 12R, 2.3 kV	031-02604-000
1B	Fuse, 18R, 2.3 kV	031-02605-000
1B	Fuse, 24R, 2.3 kV	031-02606-000
1A	Fuse, 3R, 3.3/5 kV	031-02607-000
1A	Fuse, 4R, 3.3/5 kV	031-02608-000
1A	Fuse, 6R, 3.3/5 kV	031-02609-000
1A	Fuse, 9R, 3.3/5 kV	031-02610-000
1A	Fuse, 12R, 3.3/5 kV	031-02611-000
1B	Fuse, 18R, 3.3/5 kV	031-02612-000
1B	Fuse, 24R, 3.3/5 kV	031-02613-000
2	Fuse, 38R, 3.3/5 kV	031-02734-000
3	Fuse, 2E, 4800 V (all voltages)	031-02614-000
3	Fuse, 3E, 4800 V (all voltages)	031-02615-000
4	Fuse, 10A, 500 V	025-27971-000
4	Fuse, 5A, 500 V	025-27922-000
4	Fuse, 15A, 500 V	025-25584-000
4	Fuse, 20A, 500 V	025-28967-000
4	Fuse, 5A, 600 V	025-34540-000
4	Fuse, 7A, 600 V	025-34136-000

Notes:

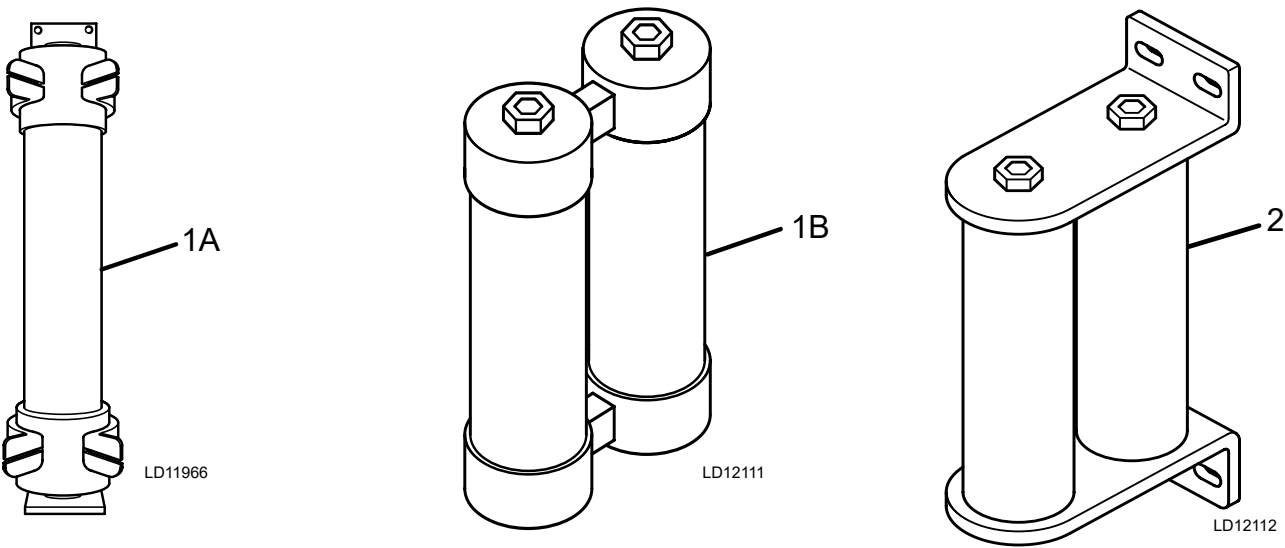
See Unit Model Reference Chart on page 3 for correct type fuses.
Have all the fuse information in-hand when ordering replacements.

Table 6 - Accessories

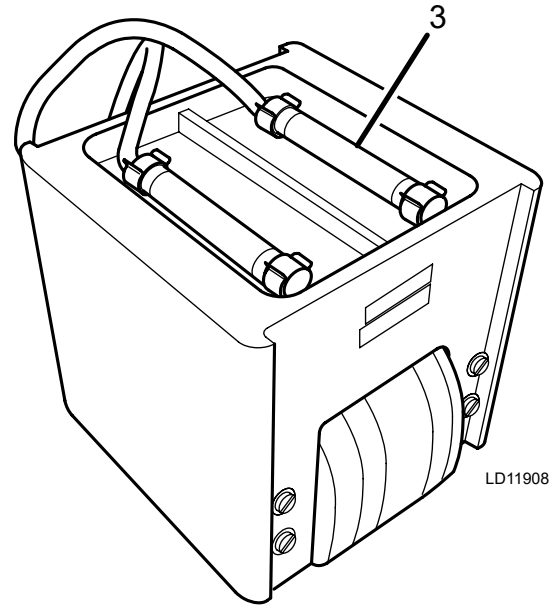
Item	Description	YORK P/N
1	Kit, MVSSS heater, space, 250 watts, 120 VAC	031-02739-000
1A	Heater, MVSSS space, 250 watts, 250 VAC	031-02740-000
1B	Thermostat, MVSSS heater	031-02741-000

Note:

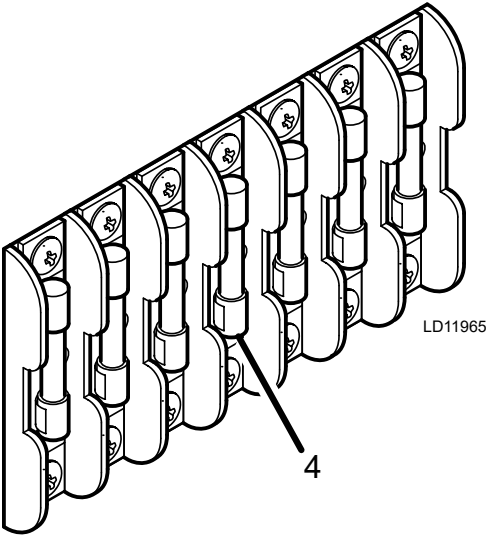
Accessories are **not** shown.



R-type fuses



Control
transformer
fuses



Fuses
(optional oil pump
fuses FU 10-12)

Figure 5 - Fuses



5000 Renaissance Drive, New Freedom, Pennsylvania USA 17349
Copyright © by Johnson Controls 2021
Form 160.00-RP5 (621)
Issue Date: June 30, 2021
Supersedes 160.00-RP5 (706)

1-800-524-1330
www.johnsoncontrols.com

Subject to change without notice. Printed in USA
ALL RIGHTS RESERVED