Technical Data **TD020001EN** Effective October 2014

Ampgard medium voltage motor control renewal parts

Contents

Powering Business Worldwide

General Information

Ampgard renewal and replacement parts

The present design of Ampgard® medium voltage starters was introduced in 2005. Additional ratings and features have been continuously introduced over the years.

This renewal parts guide will provide the proper identification of standard parts which may be required for the repair or maintenance of Eaton Ampgard starters.

Style numbers identified in this document may not be the same as style numbers on the original equipment. The renewal part styles in this document may be in a kit form and include subassembly, carton, installation instructions, etc.

Identifying your equipment

The following can help you in identifying which version of Ampgard you have. The current version of Ampgard as shown in the bottom illustration on ***page 3***, has the low voltage door/compartment located on the front of the medium voltage unit in a separate isolated compartment. In addition, the non-load break switch (isolation switch) is located to the right of the low voltage compartment.

The previous style of Ampgard, referred to as Classic Ampgard, has the low voltage compartment to the right of the medium voltage compartment as shown in the top illustration on ***page 3***. The isolation switch is located on the top of the medium voltage compartment.

This document addresses the current generation of Ampgard. For earlier designs, please contact your local Eaton representative.

There are numerous variations in Ampgard starters. Most of the parts listed in this guide are included in the more common variations.

400A starters are available with contactors that use bolted or finger connections. Fuses may be clip-in or bolt-in. Contactors are modified for high-altitude (above 2000m).

There are many variations of phase barriers. Common reasons for these variations include the use of special current transformers or other optional equipment, or special provisions for customer cable connections. Dimensions are shown for each of the barriers offered in this guide. Insure that the replacement barriers match the size of those originally supplied. If the original barriers are of a different size, contact Eaton for identification of the correct replacement part numbers.

800A contactors were the "SJ" series through March 2014. The contactors were changed to the "SL" series beginning April 2014. The specific parts used in the two contactors are different, but the complete contactor assemblies are interchangeable. Parts detailed in this document will specify if they are for the "SJ" version or the "SL" version of the contactor. Replacement vacuum interrupters are not available for the "SJ" version. Complete replacement contactors will be the "SL" series only.

Additional service

Should you experience difficulty in determining needed parts for repair or determining existing starter condition, contact your local Eaton representative. We can provide qualified technical personnel on site to:

- Identify and recommend replacement parts for damage caused by short-circuit of fault
- Remove damaged parts and install replacements
- Retrofit vintage motor-starting equipment with new components
- Evaluate condition of existing equipment
- Test components
- Provide a recommended spare parts list
- Upgrade horsepower rating

Figure 1. Classic Ampgard

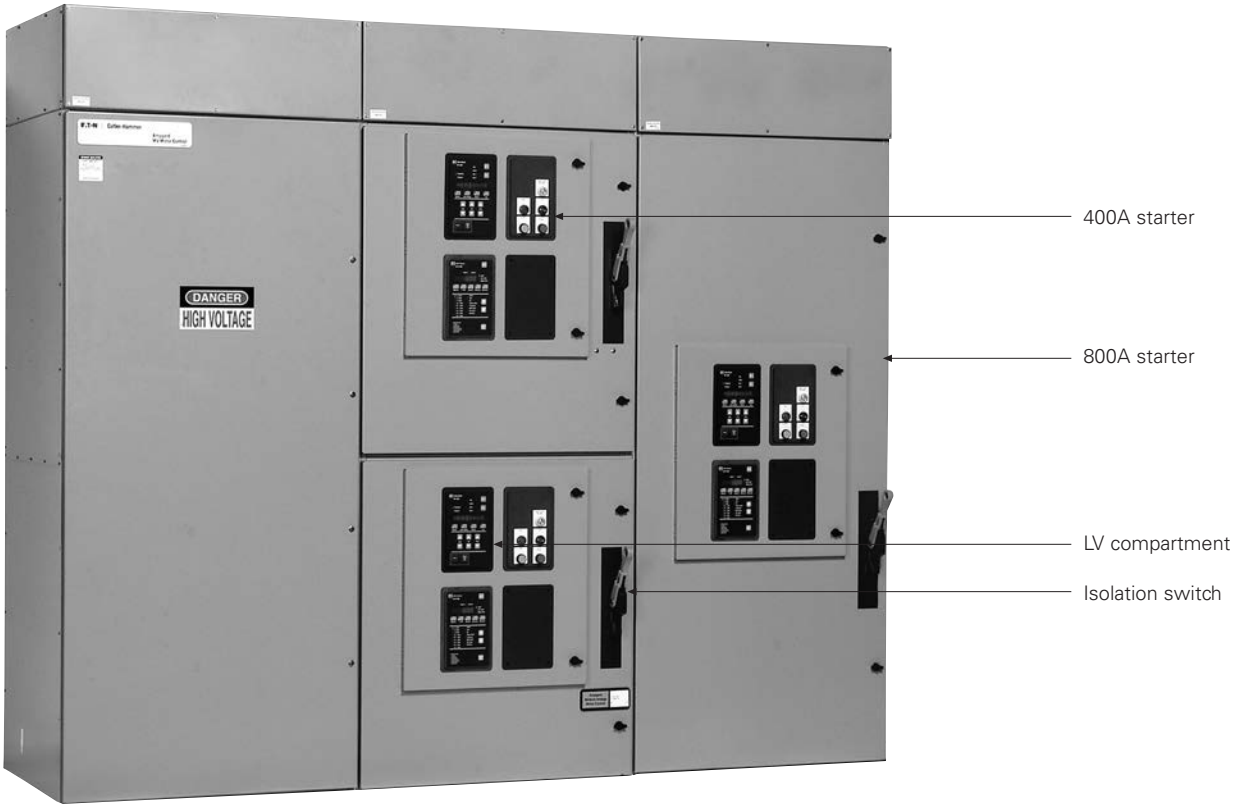


Figure 2. Current Ampgard (covered in this guide)

400A starter design

Figure 3. 7.2 kV, 400A, 2-high

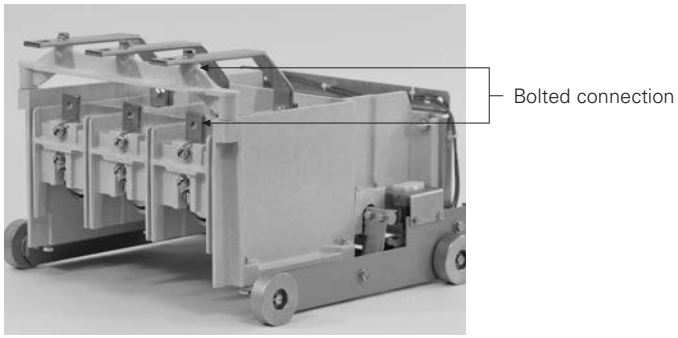


Figure 4. 400A contactor with bolted connection

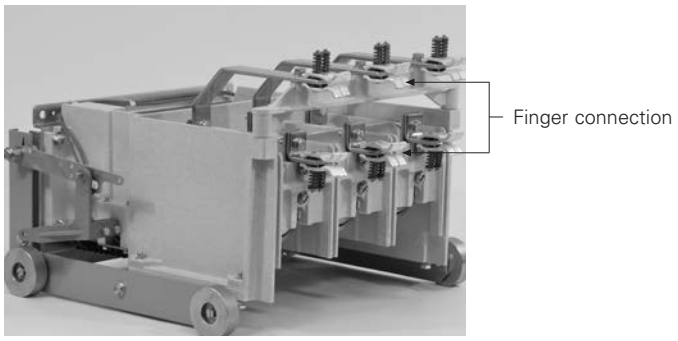


Figure 5. 400A contactor with finger connection

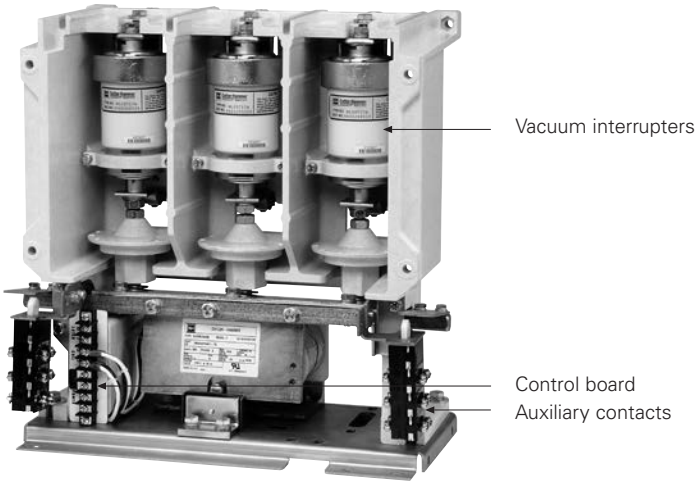


Figure 6. 400A contactor (bottom view)

Table 1. 400A contactors (7.2 kV and below)

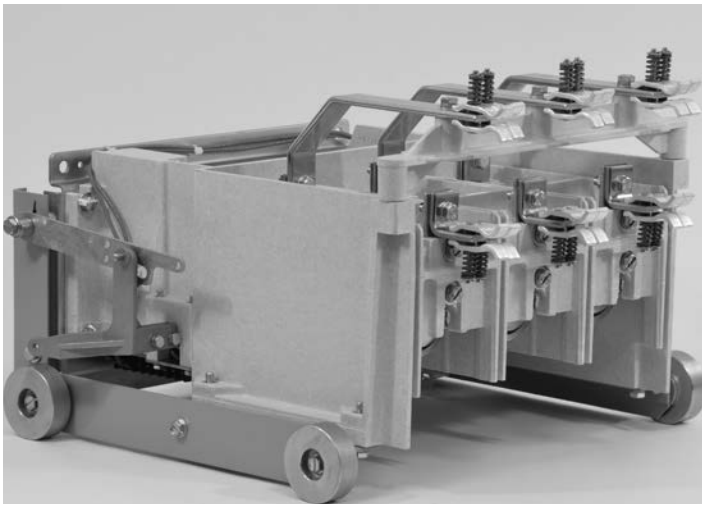


Figure 7. Stab connection

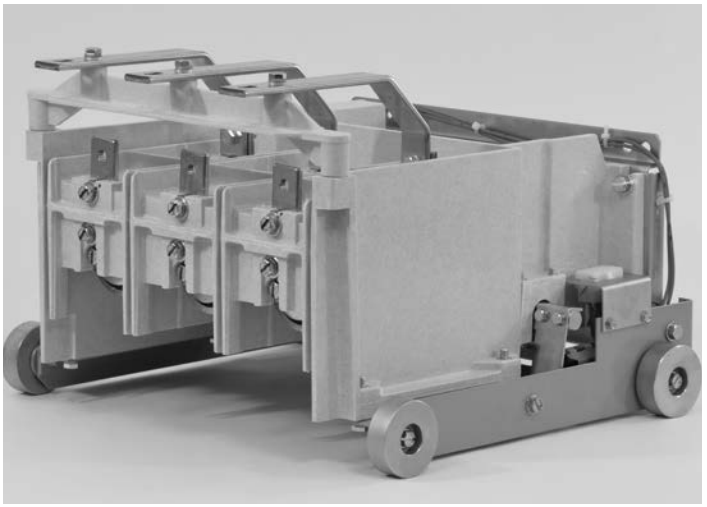


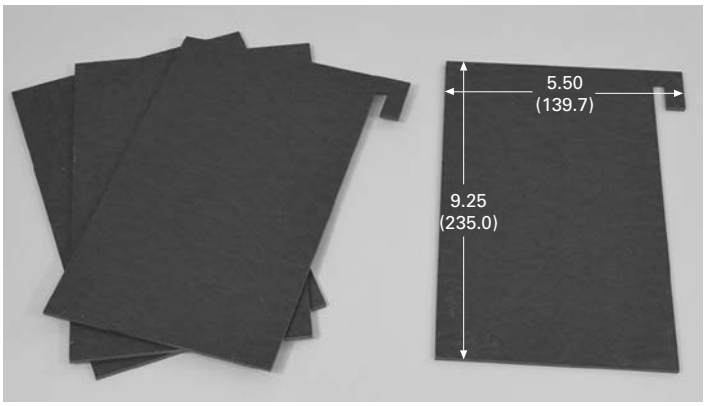
Figure 8. Bolted connection

Type	Style number
400A bolt-in main contactor (120 Vac, 130 ms dropout ①) ②	SL72B4SH3LANL7MNR25
400A stab-in main contactor (120 Vac, 130 ms dropout ①) ②	SL72S4SH3LANL7MNR25
400A bolt-in reversing contactor (120 Vac, 130 ms dropout ①) ②	SL72B4SH3LANL7VNR25
400A stab-in reversing contactor (120 Vac, 130 ms dropout ①) ②	SL72S4SH3LANL7VNR25
400A bolt-in latched contactor (120 Vac close and trip) ②	SL72B4SH3LAL45MNR25
400A stab-in latched contactor (120 Vac close and trip) ②	SL72S4SH3LAL45MNR25

① Dropout time is field adjustable.

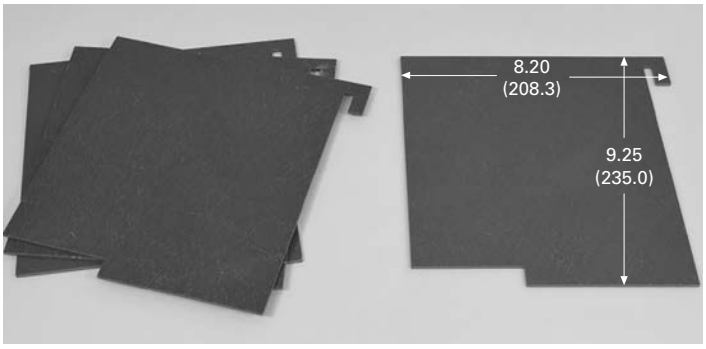
② Standard altitude contactor. For high altitude applications (>2000m) contact factory.

Table 2. 400A lower fuse phase barriers single barrel fuse (qty. 4)



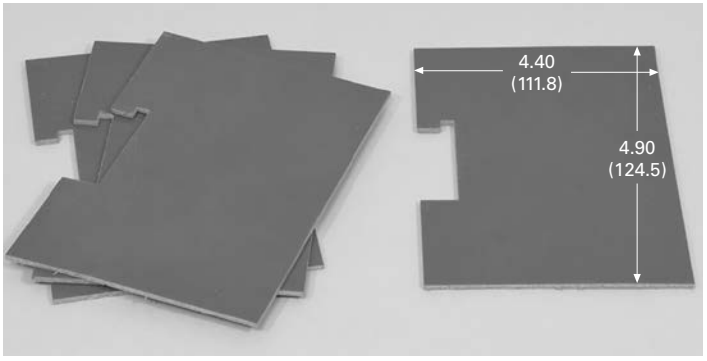
Type	Style number
400A	54A1310G02

Table 3. 400A fuse phase barriers double barrel fuse (qty. 4)



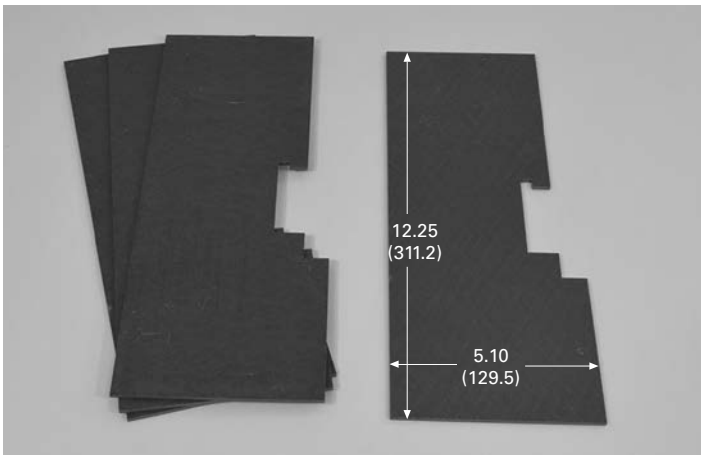
Type	Style number
400A	54A1310G05

Table 4. 400A contactor load stab barriers (qty. 4)



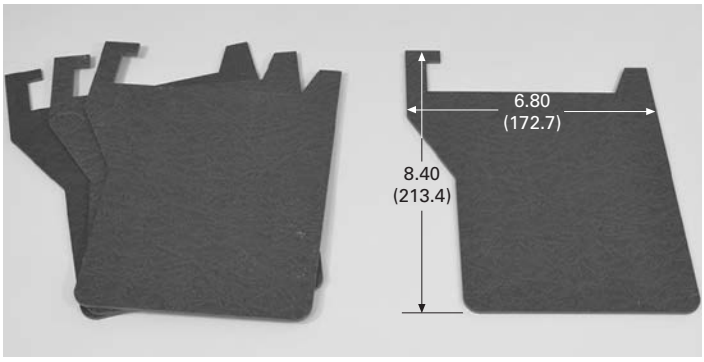
Type	Style number
400A	54A1302G20

Table 5. 400A motor load phase barriers (qty. 4)



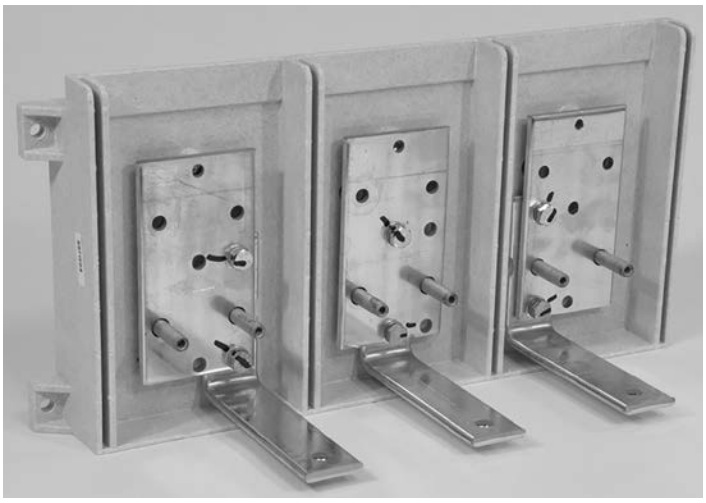
Type	Style number
400A	54A1310G01

Table 6. 400A isolation switch barrier double barrel (qty. 4)



Type	Style number
400A	54A1300G20

Table 7. 400A contactor line stab and lower fuse-mount assembly for bolt-in contactor

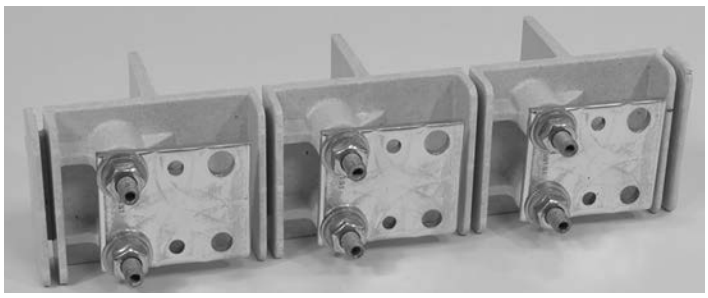


Type	Style number
Bolt-in fuse	54A1301G03 (order barriers separately)
Clip-in fuse	54A1301G04 (order barriers separately)

Table 8. 400A contactor load stab assembly for bolt-in contactor

Type	Style number
400A SL	54A1302G02 (order barriers separately)

Table 9. 400A motor load connection assembly (T1, T2, T3)

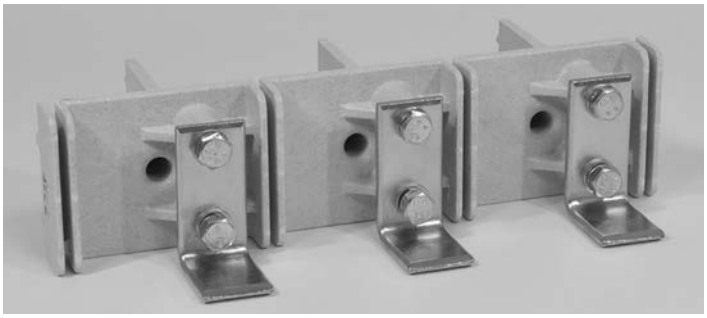


Type	Style number
400A load	54A1306G01 (order barriers separately)

Table 10. 400A contactor line stab and lower fuse-mount assembly for stab-in contactor

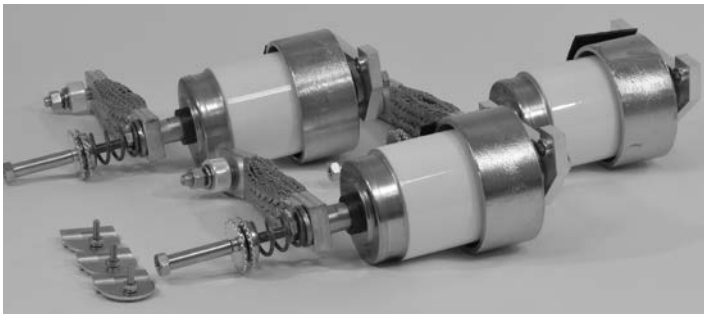
Type	Style number
Bolt-in fuse	54A1301G01 (order barriers separately)
Clip-in fuse	54A1301G02 (order barriers separately)

Table 11. 400A contactor load stab assembly for stab-in contactor



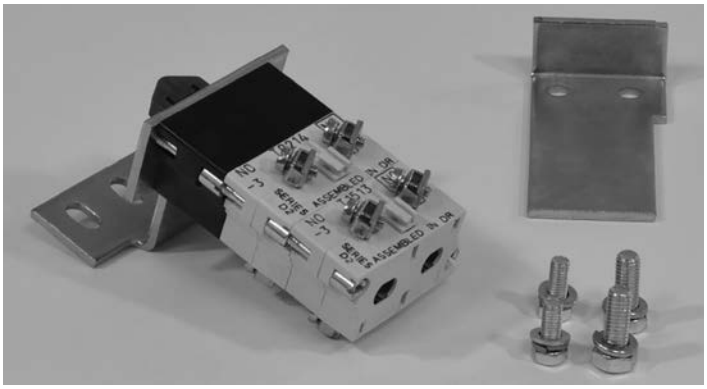
Type	Style number
400A SL	54A1302G01 (order barriers separately)

Table 12. 400A vacuum bottle assembly (qty. 3)



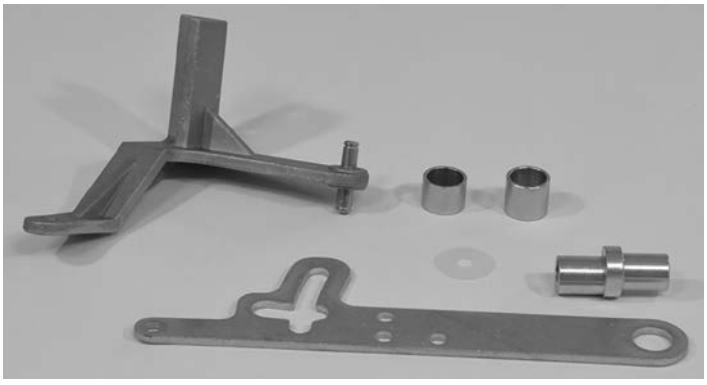
Type	Style number
400A SL	2147A58G02

Table 13. Auxiliary contact assembly (2NO/2NC)



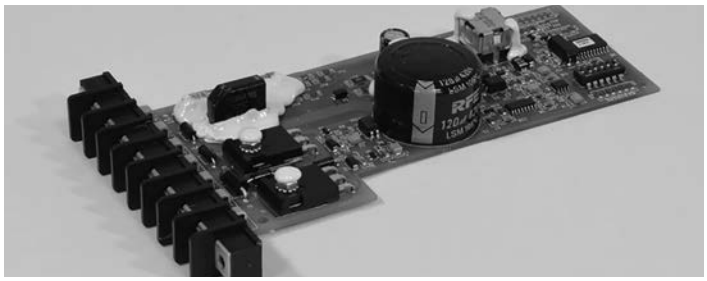
Type	Style number
400A SL	2147A58G04

Table 14. 400A contactor mechanical interlock kit



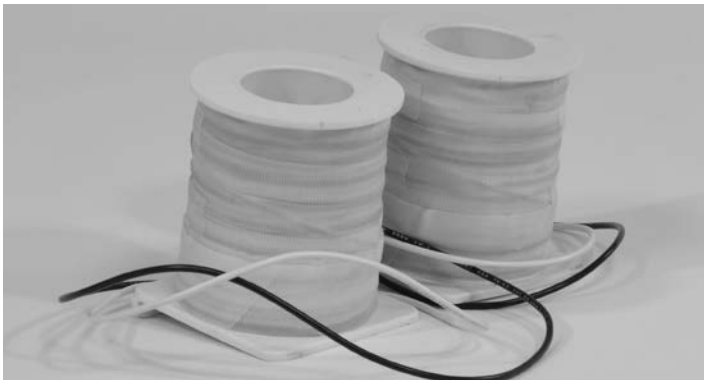
Type	Style number
Main	87C0600G01
Reversing	87C0600G02
Run or start	87C0600G03

Table 15. 400A control circuit board (includes mounting bracket and hardware)



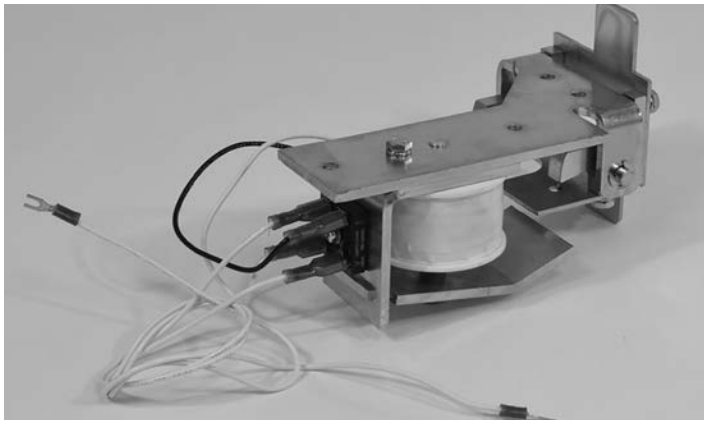
Type	Style number
400A SL	2147A58G03

Table 16. 400A dual coil kit



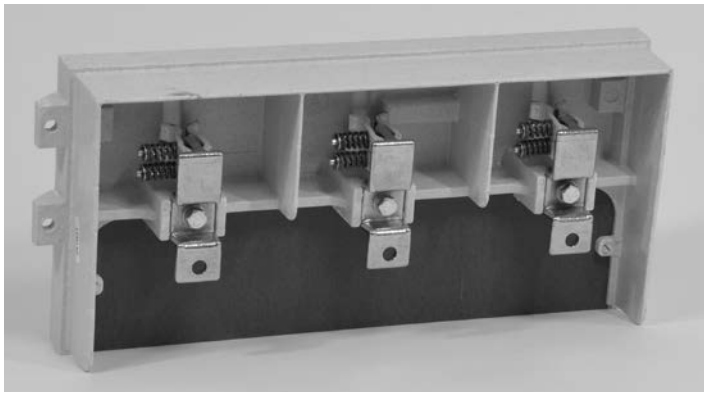
Type	Style number
400A SL	2147A58G11

Table 17. 400A mechanical latch assembly



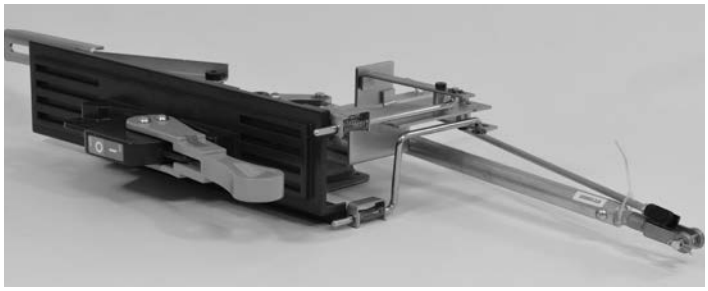
Type	Style number
24 Vdc coil and diode	2147A58G25
48 Vdc coil and diode	2147A58G26
125 Vac/Vdc coil and diode	2147A58G27
250 Vac/Vdc coil and diode	2147A58G28
Mechanical assembly	2147A58G24

Table 18. 400A isolation switch fixed portion



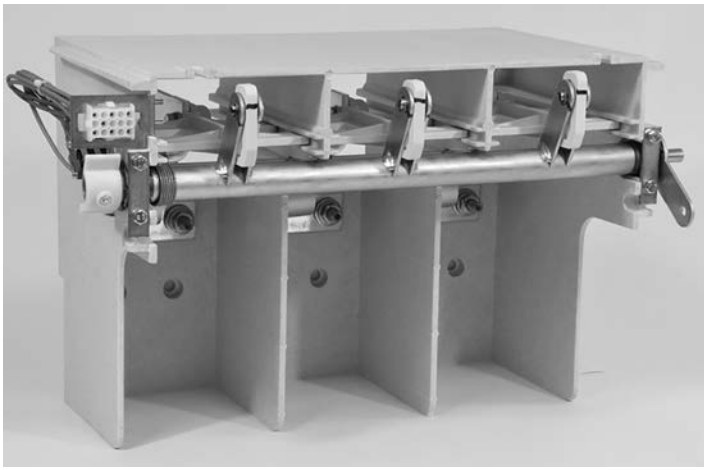
Type	Style number
Isolation switch fixed portion	54A1300G01

Table 19. Handle mechanism (contact factory for kirk key option)



Type	Style number
400A full voltage	54A1305G01
400A reduced voltage (with two door interlock pins)	54A1305G02

Table 20. 400A isolation switch removable portion



Type	Style number
Bolt-in fuse	54A1300G02 (order barriers for double barrel fuses separately)
Bolt-in fuse with blown fuse bar	54A1300G03 (order barriers for double barrel fuses separately)
Clip-in fuse	54A1300G04 (order barriers for double barrel fuses separately)

800A starter design

Figure 9. 7.2 kV 800A

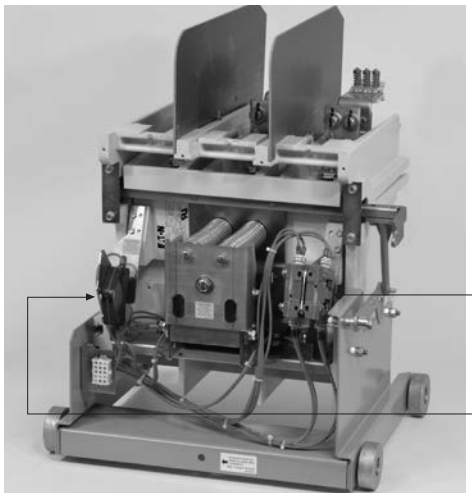


Figure 10. 800A SJ series contactor (front view)

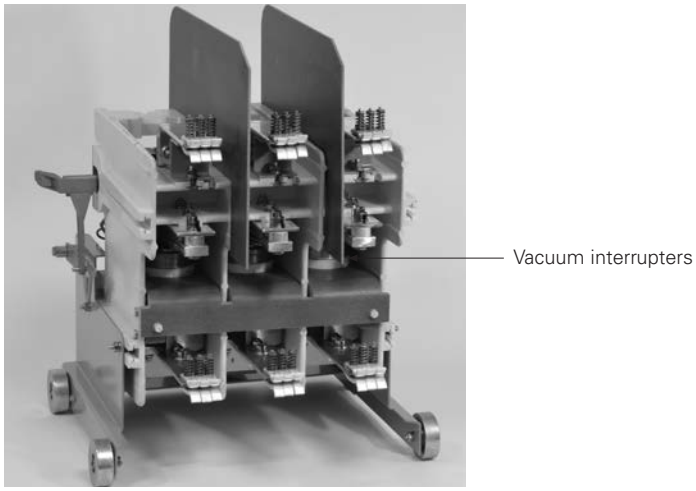


Figure 11. 800A SJ series contactor (rear view)

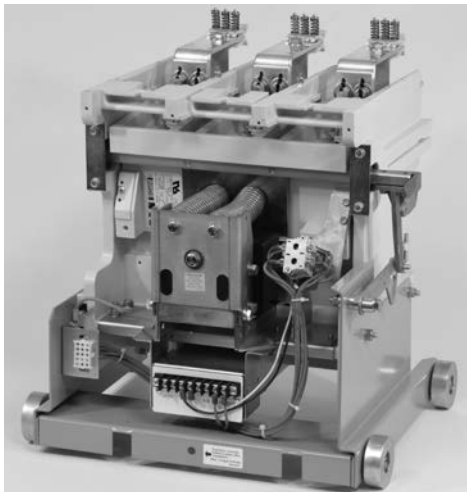
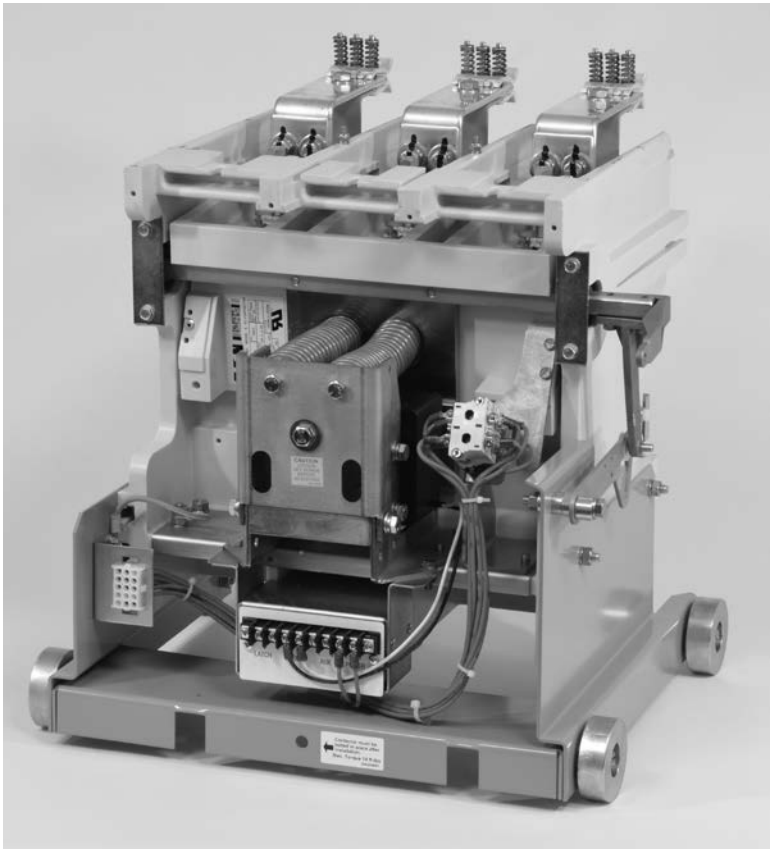


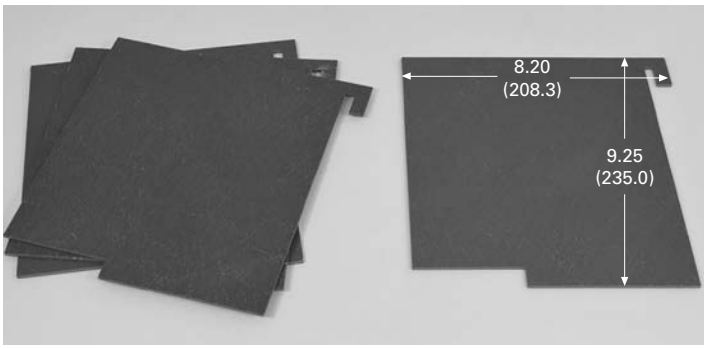
Figure 12. 800A SL series contactor (front view)

Table 21. 800A SL series complete replacement contactors



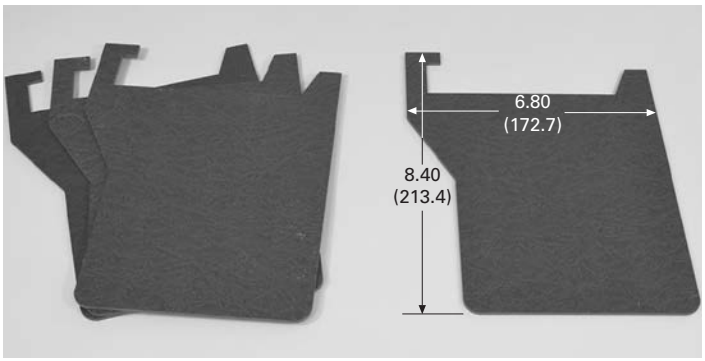
Type	Style number
800A SL series standard stab-in contactor (120 Vac, 130 ms dropout, interchangeable with SJ series)	SL72S8SH3LANL7MNR25
800A SL series reversing stab-in contactor (120 Vac, 130 ms dropout, interchangeable with SJ series)	SL72S8SH3LANL7VNR25
800A SL series latching stab-in contactor (120 Vac close and trip, interchangeable with SJ series)	SL72S8SH3LAL45MNR25

Table 22. 800A lower fuse phase barriers (qty. 4)



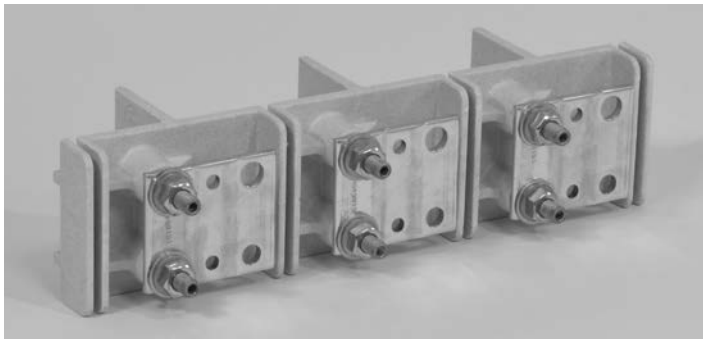
Type	Style number
800A	54A1310G07

Table 23. 800A isolation switch barriers (qty. 4)



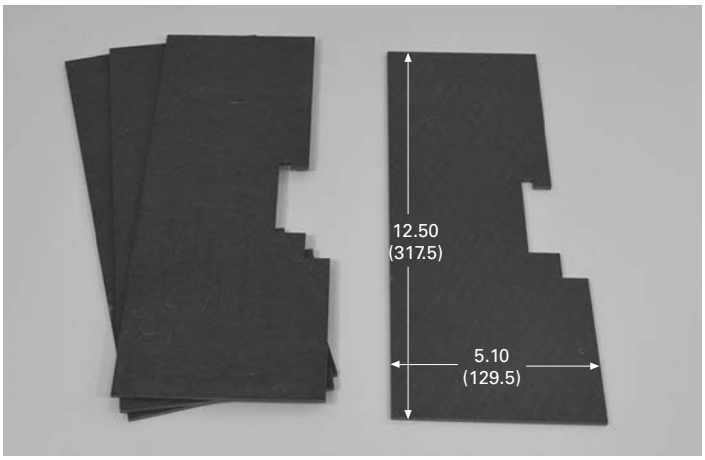
Type	Style number
800A	54A1300G20

Table 24. 800A motor load connection assembly (T1, T2, T3)



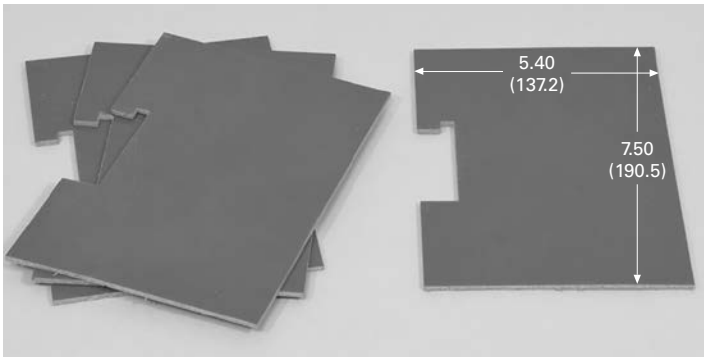
Type	Style number
800A SL	87C0599G01 (order barriers separately)

Table 25. 800A motor load phase barriers (qty. 4)



Type	Style number
800A	54A1310G01

Table 26. 800A contactor load stab phase barriers (qty. 4)

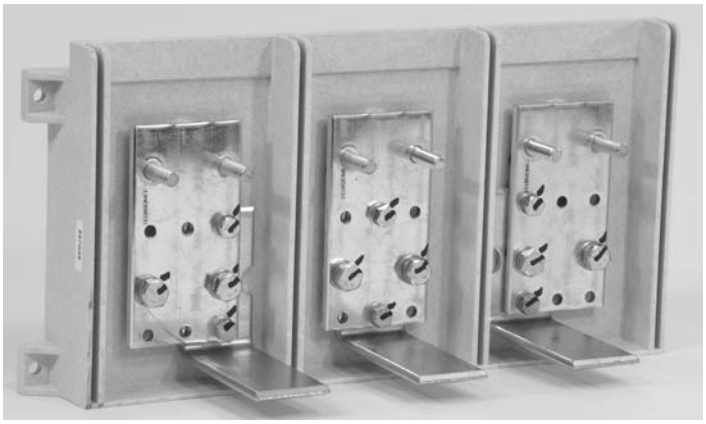


Type	Style number
800A	54A1302G21

Table 27. 800A contactor load stab assembly

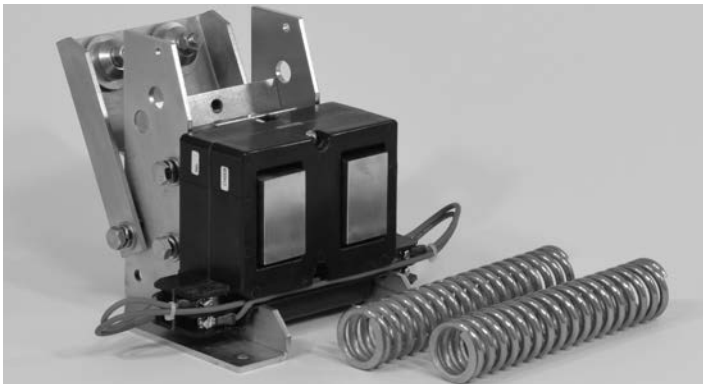
Type	Style number
800A SL	87C0598G07 (order barriers separately)

Table 28. 800A contactor line stab and lower fuse-mount assembly



Type	Style number
800A SL	87C0597G05 (order barriers separately)

Table 29. 800A SJ series magnetic assembly (complete with coil and springs)

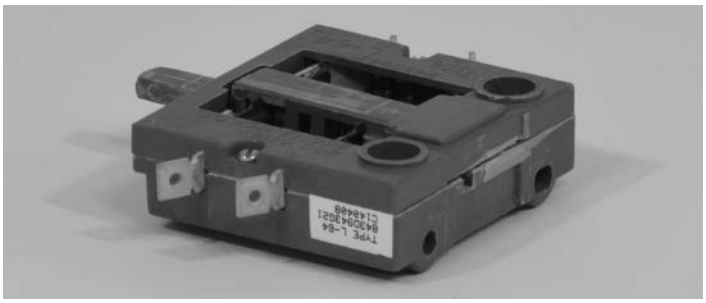


Type	Style number
120 Vac	2147A88G02
240 Vac	2147A88G03
Without coil	2147A88G04

Table 30. 800A SJ series L-63 interlock (coil circuit)

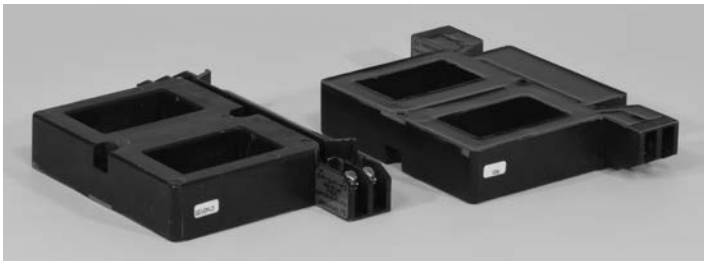
Type	Style number
Interlock	578D461G03

Table 31. 800A SJ series L-64 auxiliary interlocks



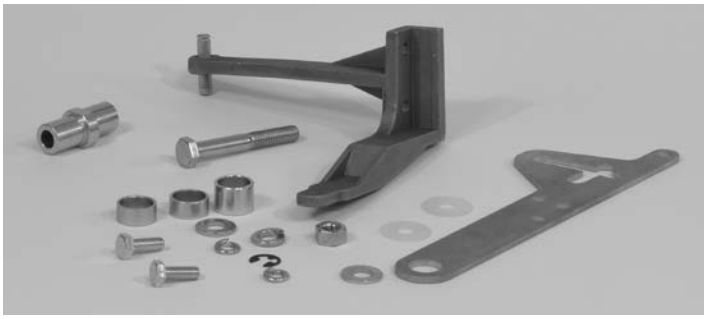
Type	Style number
1NO/1NC	843D943G21
2NO	843D943G22
2NC	843D943G23

Table 32. 800A SJ series contactor dual main coil assembly



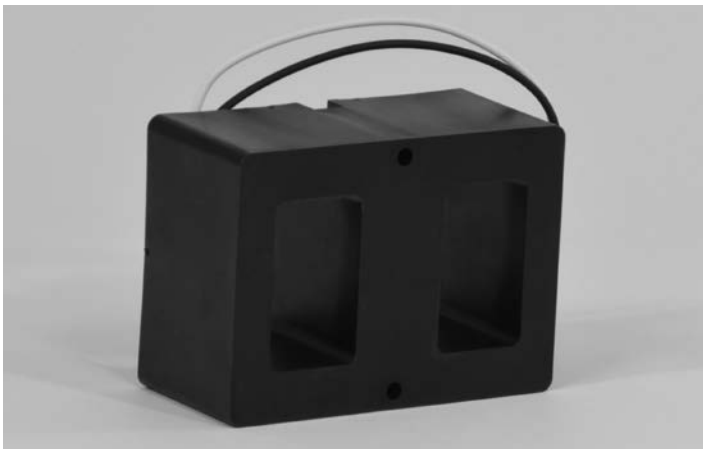
Type	Style number
120 Vac	2147A88G11
240 Vac	2147A88G12

Table 33. 800A contactor mechanical interlock kit (SJ or SL)



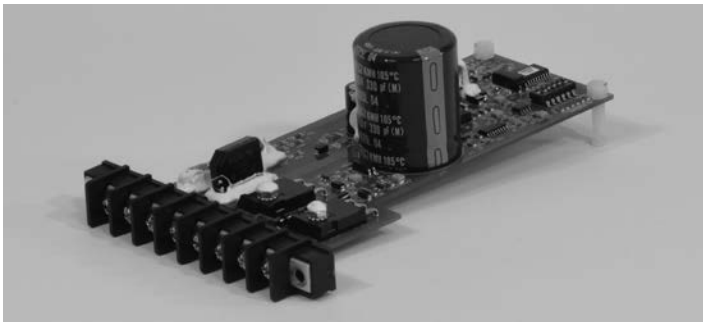
Type	Style number
Interlock kit	87C0726G01

Table 34. 800A SL series main coil



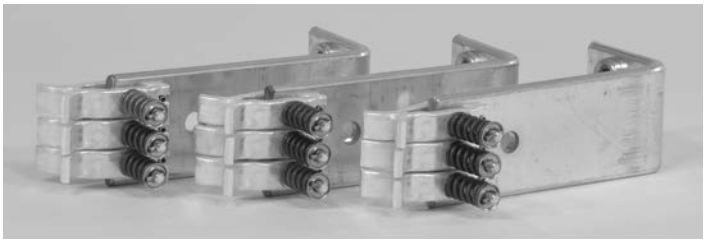
Type	Style number
Coil	54A1307G18

Table 35. 800A SL series control circuit board



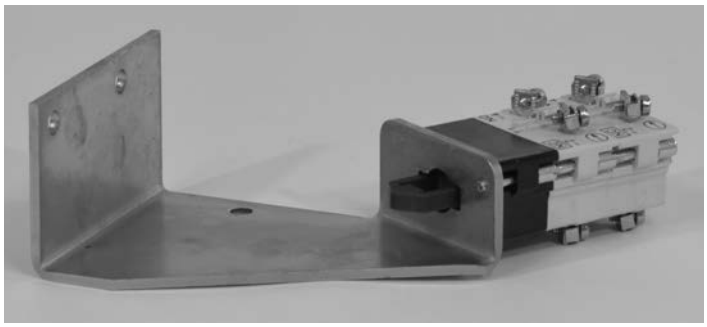
Type	Style number
800A SL	54A1307G24

Table 36. 800A SL series line finger assembly (qty. 3)



Type	Style number
800A SL	54A1307G20

Table 37. 800A SL series auxiliary interlocks

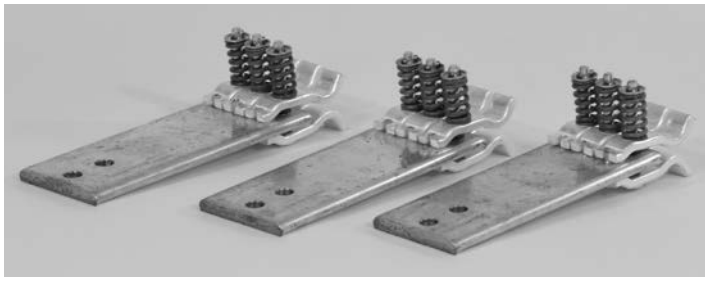


Type	Style number
2NO/2NC	54A1307G22

Table 38. 800A SL series vacuum bottle assembly (qty. 3)

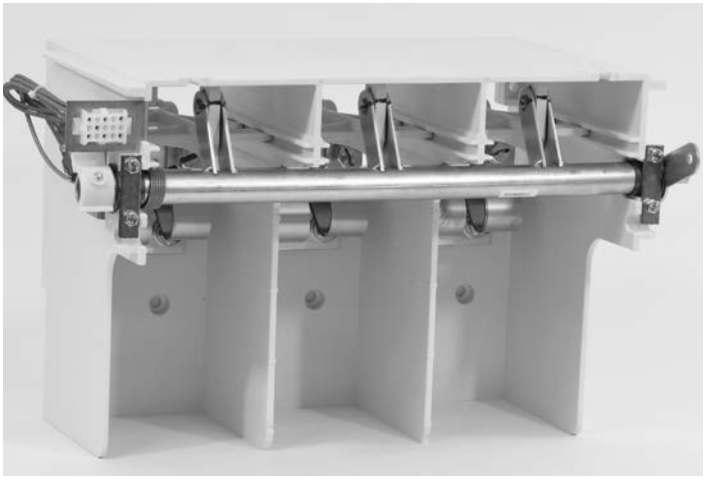
Type	Style number
800A SL	54A1307G19

Table 39. 800A SL series load finger assembly (qty. 3)



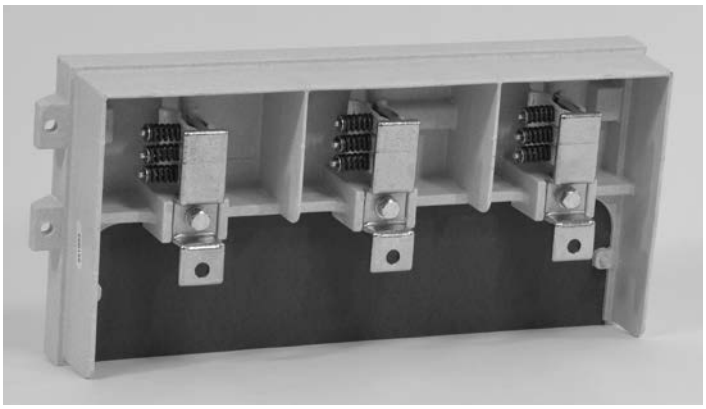
Type	Style number
800A SL	54A1307G13

Table 40. 800A isolation switch removable portion (blown fuse indicator (BFI) optional)



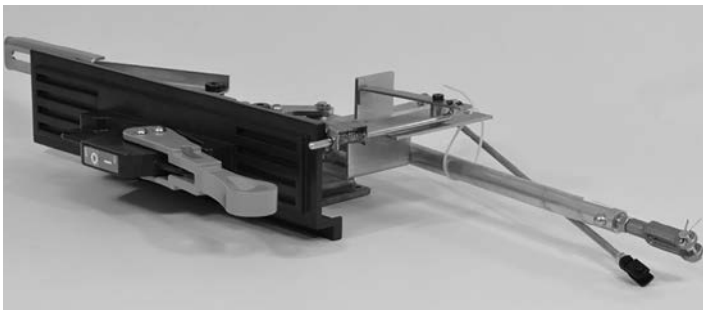
Type	Style number
Without BFI	54A1300G12 (order barriers separately)
With BFI	54A1300G13 (order barriers separately)

Table 41. 800A isolation switch fixed portion



Type	Style number
Fixed portion	54A1300G11

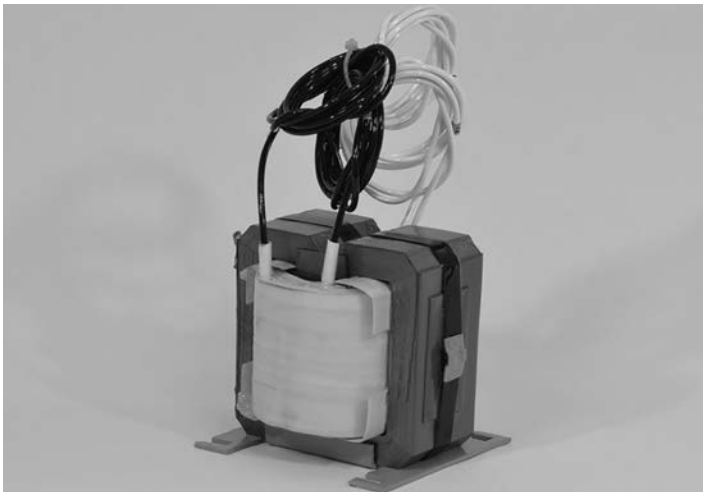
Table 42. Handle mechanism (contact factory for kirk key option)



Type	Style number
800A full voltage	54A1305G05

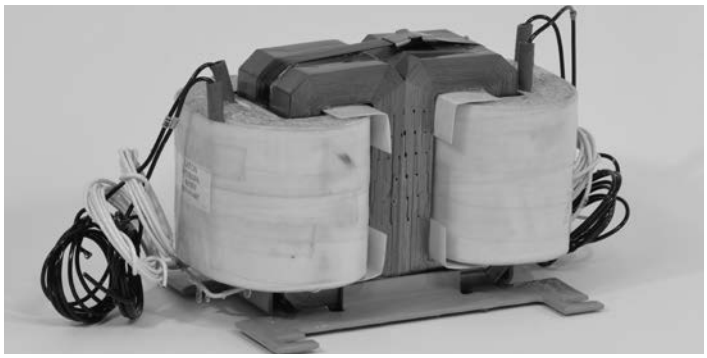
Control and potential transformers

Table 43. Standard 750 VA control transformer, 60 Hz



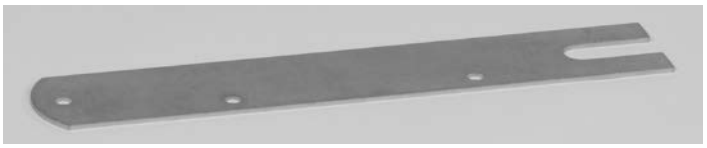
Type	Style number
2300/120V	C7.5A1D1F2
4160/120V	C7.5E1D1F2

Table 44. Potential transformer 100 VA three-phase, 60 Hz, open delta



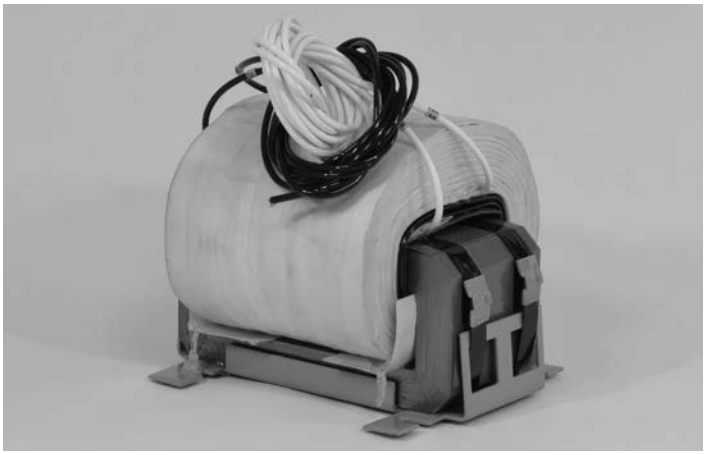
Type	Style number
2400/120V	PT3A0F6
4200/120V	PT3E0F6

Table 45. Vacuum interrupter wear gauge



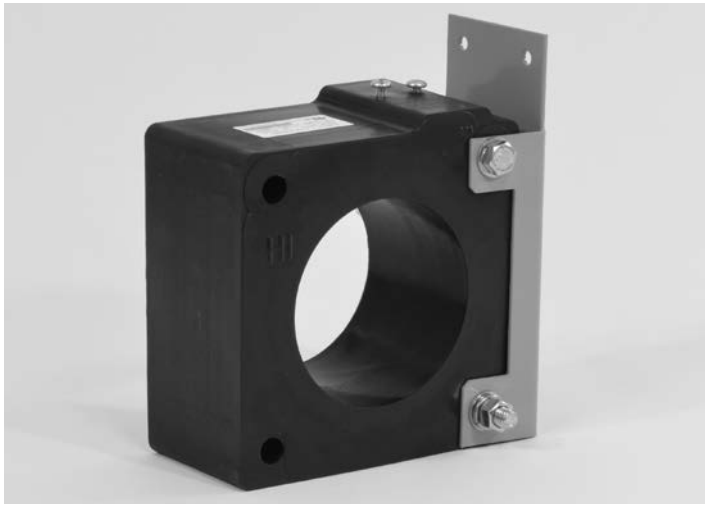
Type	Style number
400A (.020)	5259C11H01
800A (.060)	5259C11H02

Table 46. 2 kVA control transformer, 60 Hz



Type	Style number
2300/120V	C20A1D1F2
4160/120V	C20E1D1F2

Table 47. Ground fault current transformer



Type	Style number
50/5 ratio	54A1314G02

Current transformers

Table 48. Current transformers three-phase donut type with leads

Ratio	Style number
100/5	54A1303G01
150/5	54A1303G02
200/5	54A1303G03
250/5	54A1303G04
300/5	54A1303G05
400/5	54A1303G06
500/5	54A1303G07
600/5	54A1303G08
800/5	54A1303G09
1000/5	54A1303G10

Table 49. Current transformers single-phase donut type (qty. 3)

Ratio	Style number
50/5	①
75/5	②
100/5	2147A13G04
150/5	2147A13G05
200/5	2147A13G06
250/5	2147A13G07
300/5	2147A13G08
400/5	2147A13G09
500/5	2147A13G10
600/5	2147A13G11
750/5	2147A13G12
800/5	2147A13G13
1000/5	2147A13G14
1200/5	2147A13G15

① Use style number 2147A13G04 and double loop primary leads.

② Use style number 2147A13G05 and double loop primary leads.

Fuses

Table 50. Clip-in fuses, 5.0 kV maximum (qty. 3)

Type	Rating	Style number
CLS 400A motor starter	30A—1R	2A98253G01
	70A—2R	2A98253G02
	100A—3R	2A98253G03
	130A—4R	2A98253G04
	150A—5R	2A98253G05
	170A—6R	2A98253G06
	200A—9R	2A98253G07
	230A—12R	2A98253G08
	390A—18R ①	2A98253G09
	450A—24R ①	2A98253G10
HLE 400A feeder starter	10E	2A98253G41
	15E	2A98253G42
	20E	2A98253G43
	25E	2A98253G44
	30E	2A98253G45
	40E	2A98253G46
	50E	2A98253G47
	65E	2A98253G48
	80E	2A98253G49
	100E	2A98253G50
	125E	2A98253G51
	150E	2A98253G52
	200E	2A98253G53
	250E	2A98253G55
	300E ①	2A98253G56
	350E ①	2A98253G57
	400E ①	2A98253G58
	450E ①	2A98253G59

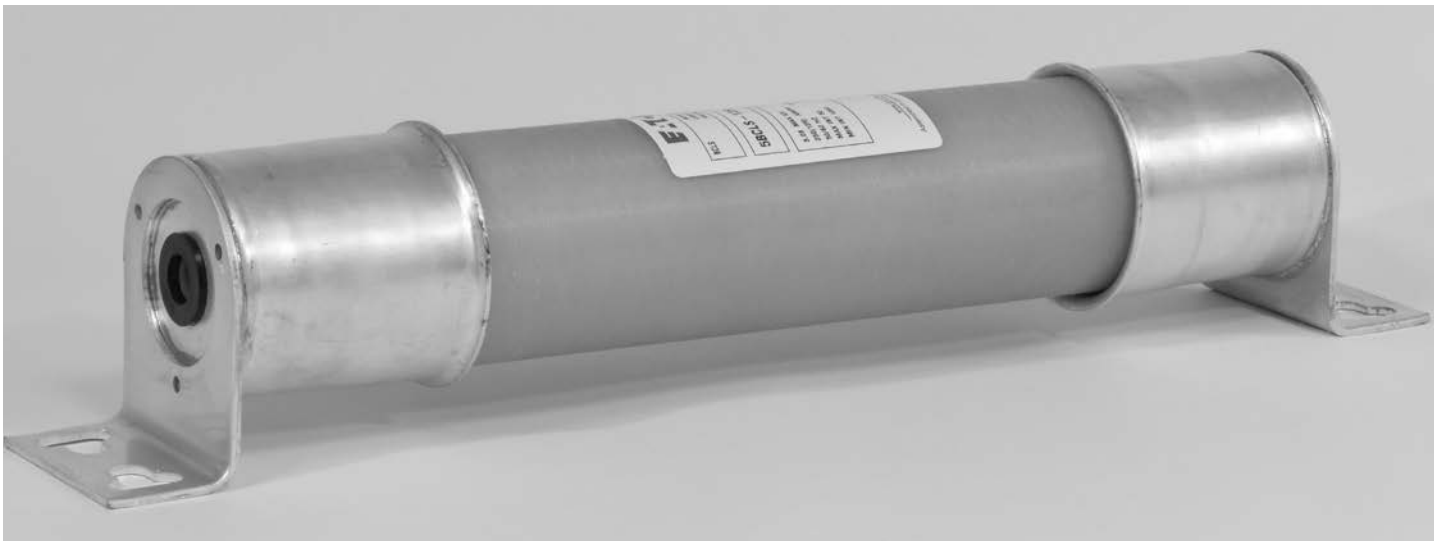
① Double barrel.

Table 51. Clip-in fuses, 7.2/8.3 kV maximum (qty. 3)

Type	Rating	Style number
CLS 400A motor starter	70A—2R	2A98253G21
	100A—3R	2A98253G22
	130A—4R	2A98253G23
	150A—5R	2A98253G24
	170A—6R	2A98253G25
	200A—9R	2A98253G26
	230A—12R	2A98253G27
	390A—18R ①	2A98253G28
	450A—24R ①	2A98253G29
HLE 400A feeder starter	10E	2A98253G71
	15E	2A98253G72
	20E	2A98253G73
	25E	2A98253G74
	30E	2A98253G75
	40E	2A98253G76
	50E	2A98253G77
	65E	2A98253G78
	80E	2A98253G79
	100E	2A98253G80
	125E	2A98253G81
	150E	2A98253G82
	175E	2A98253G83
	200E ①	2A98253G84
	250E ①	2A98253G85
	300E ①	2A98253G86
	350E ①	2A98253G87

① Double barrel.

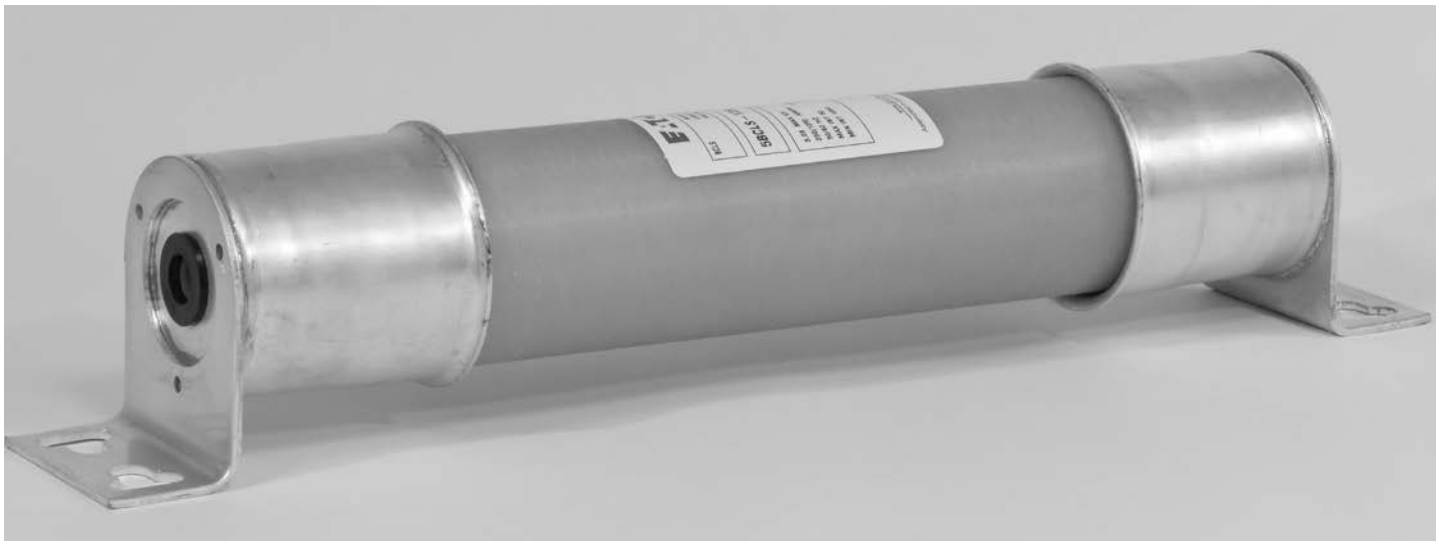
Table 52. Bolt-in fuses, 5.0 kV maximum (qty. 3)



Type	Rating	Style number
CLS 400/800A motor starter	30A—1R	54A1311G11
	70A—2R	54A1311G12
	100A—3R	54A1311G13
	130A—4R	54A1311G14
	150A—5R	54A1311G15
	170A—6R	54A1311G16
	200A—9R	54A1311G17
	230A—12R	54A1311G18
	390A—18R ①	54A1311G19
	450A—24R ①	54A1311G20
CLS 800A motor starter	650A—36R ①	54A1311G21
	800A—44R ①	54A1311G22
HLE 400/800A feeder starter	15E	54A1311G41
	20E	54A1311G42
	25E	54A1311G43
	30E	54A1311G44
	40E	54A1311G45
	50E	54A1311G46
	65E	54A1311G47
	80E	54A1311G48
	100E	54A1311G49
	125E	54A1311G50
	150E	54A1311G51
	175E	54A1311G52
	200E	54A1311G53
	250E	54A1311G54
	300E ①	54A1311G55
	350E ①	54A1311G56
	400E ①	54A1311G57
	450E ①	54A1311G58
HLE 800A feeder starter	600E ①	54A1311G59
	750E ①	54A1311G60

① Double barrel.

Table 53. Bolt-in fuses, 7.2/8.3 kV maximum (qty. 3)



Type	Rating	Style number
CLS 400/800A motor starter	100A—3R	54A1312G11
	130A—4R	54A1312G12
	150A—5R	54A1312G13
	170A—6R	54A1312G14
	200A—9R	54A1312G15
	230A—12R	54A1312G16
	390A—18R ①	54A1312G17
	450A—24R ①	54A1312G18
HLE 400/800A feeder starter	15E	54A1312G35
	20E	54A1312G36
	25E	54A1312G37
	30E	54A1312G38
	40E	54A1312G39
	50E	54A1312G40
	65E	54A1312G41
	80E	54A1312G42
	100E	54A1312G43
	125E	54A1312G44
	150E	54A1312G45
	180E	54A1312G46
	200E ①	54A1312G47
	250E ①	54A1312G48
	300E ①	54A1312G49
	350E ①	54A1312G50

① Double barrel.

Solid-state reduced voltage

400A MV4S reduced voltage solid-state

Figure 13. 400A MV4S starter (front view)

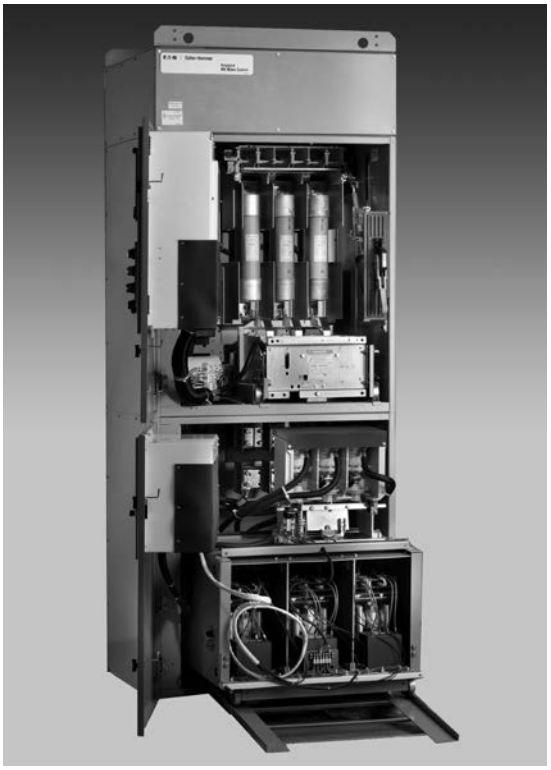
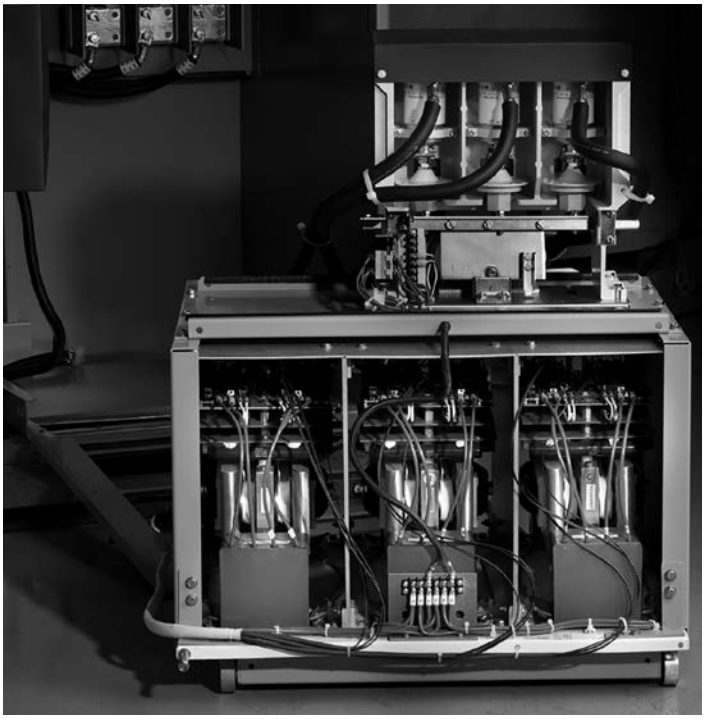


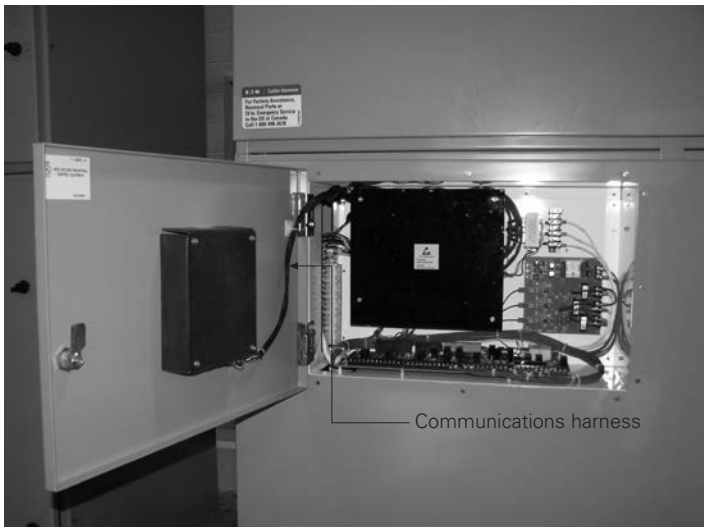
Figure 14. 400A MV4S starter (doors open)

Table 54. 400A MV4S solid-state truck assembly



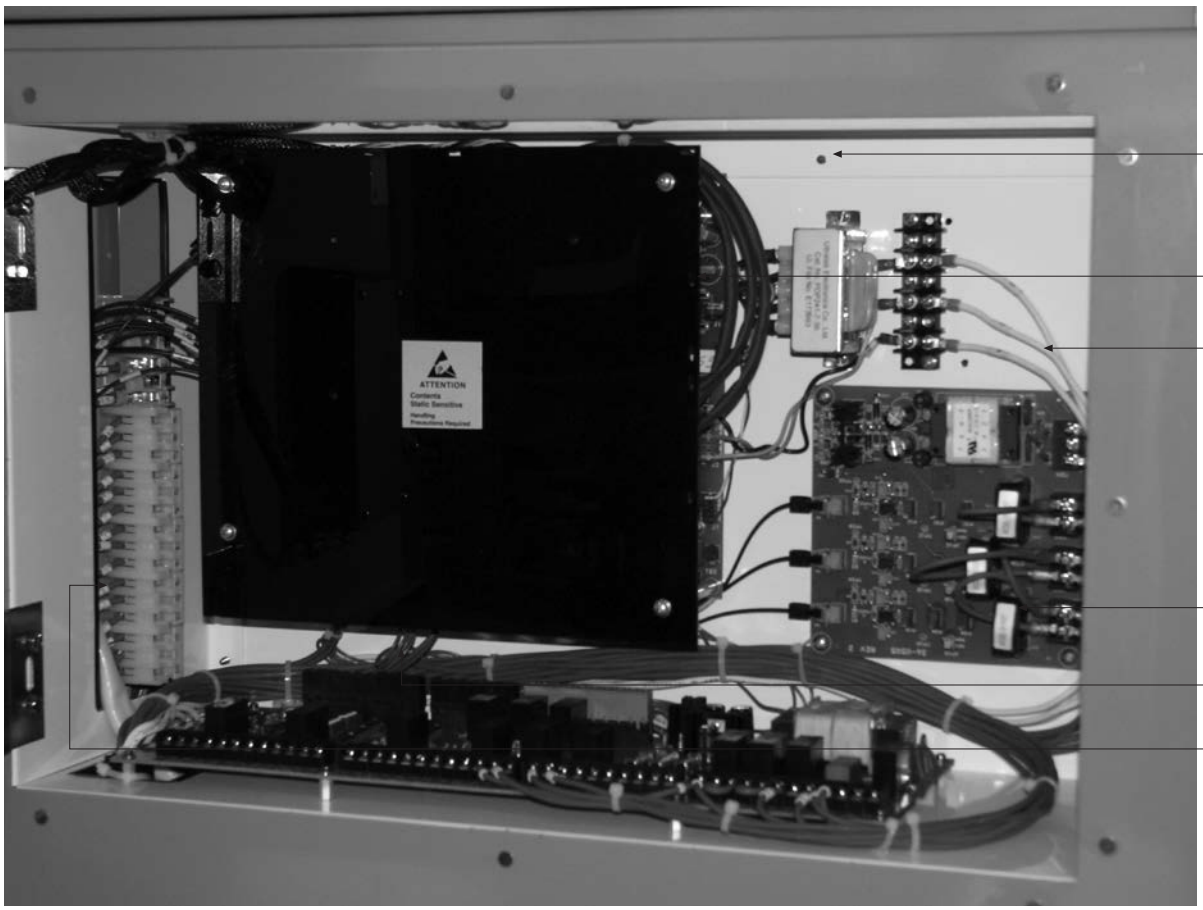
Type	Style number
Complete truck assembly	
400A/4160V	54A1320G01
400A/2300V	54A1320G02
400A/3300V	54A1320G03
200A/4160V	54A1320G04
200A/2300V	54A1320G05
200A/3300V	54A1320G06
Bypass contactor VI assembly (includes line side fingers)	54A1307G17
Bypass contactor complete	54A1319G01
Bypass contactor load finger assembly	54A1307G16
Power pole assembly (single-phase)	
400A/4160V	54A1318G200
400A/2300V	54A1318G201
200A/4160V	54A1318G300
200A/2300V	54A1318G301
Temperature board	54A1318G09

Table 55. 400A MV4S control door and control compartment



Type	Style number
Communications harness	54A1318G31

Table 56. 400A MV4S control compartment



Type	Style number
Fiber optics	
4160V	54A1318G22
2300V	54A1318G23
XP3	
4160V	54A1318G24
2300V	54A1318G25

Eaton
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Eaton.com

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