



Duplex starter w/o alternator, Size 2 1/2, Three phase full voltage, Solid-state overload relay, OLR amp range 25-100A, 380-440/440-480V 50/60Hz coil, Combination type, Two 100A circuit breakers, Enclosure NEMA type 1, Indoor general purpose use

|   |  |
|---|--|
| product brand name  | Class 84   |
| design of the product   | Duplex controller with two MCPs without alternator |
| special product feature   | ESP200 overload relay; Half-size controller        |
| <b>General technical data</b>   |  |
| weight [lb]   | 70 lb  |
| Height x Width x Depth [in]   | 56 × 29 × 10 in                                    |
| touch protection against electrical shock                               | NA for enclosed products                           |
| installation altitude [ft] at height above sea level maximum            | 6560 ft  |
| ambient temperature [°F]  |  |
| • during storage  | -22 ... +149 °F                                    |
| • during operation  | -4 ... +104 °F                                     |
| ambient temperature   |  |
| • during storage  | -30 ... +65 °C                                     |
| • during operation  | -20 ... +40 °C                                     |
| country of origin   | USA  |
| <b>Horsepower ratings</b>   |  |
| yielded mechanical performance [hp] for 3-phase AC motor                |  |
| • at 200/208 V rated value  | 15 hp  |
| • at 220/230 V rated value  | 20 hp  |
| • at 460/480 V rated value  | 30 hp  |
| • at 575/600 V rated value  | 30 hp  |
| <b>Contactors</b>   |  |
| size of contactor   | Controller half size 2 1/2                         |
| number of NO contacts for main contacts                                 | 3  |
| operating voltage for main current circuit at AC at 60 Hz maximum       | 600 V  |
| operational current at AC at 600 V rated value                          | 60 A   |
| mechanical service life (operating cycles) of the main contacts typical | 10000000   |
| <b>Auxiliary contact</b>  |  |
| number of NC contacts at contactor for auxiliary contacts               | 0  |
| number of NO contacts at contactor for auxiliary contacts               | 1  |
| number of total auxiliary contacts maximum                              | 7  |
| contact rating of auxiliary contacts of contactor according to UL       | 10A@600VAC (A600), 5A@600VDC (P600)                |
| <b>Coil</b>   |  |
| type of voltage of the control supply voltage                           | AC   |
| control supply voltage  |  |
| • at DC rated value   | 0 ... 0 V  |
| • at AC at 50 Hz rated value  | 380 ... 440 V                                      |
| • at AC at 60 Hz rated value  | 440 ... 480 V                                      |
| holding power at AC minimum   | 8.6 W  |

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|--|--|
| apparent pick-up power of magnet coil at AC  | 218 VA                                       |
| apparent holding power of magnet coil at AC  | 25 VA  |
| operating range factor control supply voltage rated value of magnet coil   | 0.85 ... 1.1                                 |
| percentual drop-out voltage of magnet coil related to the input voltage  | 50 %   |
| ON-delay time  | 19 ... 29 ms                                 |
| OFF-delay time   | 10 ... 24 ms                                 |
| <b>Overload relay</b>  |  |
| product function   |  |
| • overload protection  | Yes  |
| • phase failure detection  | Yes  |
| • asymmetry detection  | Yes  |
| • ground fault detection   | Yes  |
| • test function  | Yes  |
| • external reset   | Yes  |
| reset function   | Manual, automatic and remote                 |
| trip class   | CLASS 5 / 10 / 20 (factory set) / 30         |
| adjustable current response value current of the current-dependent overload release                                | 25 ... 100 A                                 |
| tripping time at phase-loss maximum  | 3 s  |
| relative repeat accuracy   | 1 %  |
| product feature protective coating on printed-circuit board  | Yes  |
| number of NC contacts of auxiliary contacts of overload relay  | 1  |
| number of NO contacts of auxiliary contacts of overload relay  | 1  |
| operational current of auxiliary contacts of overload relay  |  |
| • at AC at 600 V   | 5 A  |
| • at DC at 250 V   | 1 A  |
| contact rating of auxiliary contacts of overload relay according to UL   | 5A@600VAC (B600), 1A@250VDC (R300)           |
| insulation voltage (Ui)  |  |
| • with single-phase operation at AC rated value  | 600 V  |
| • with multi-phase operation at AC rated value   | 300 V  |
| <b>Enclosure</b>   |  |
| degree of protection NEMA rating of the enclosure  | NEMA Type 1                                  |
| design of the housing  | indoors, usable on a general basis           |
| <b>Circuit Breaker</b>   |  |
| type of the motor protection   | Motor circuit protector (magnetic trip only) |
| operational current of motor circuit breaker rated value   | 100 A  |
| adjustable current response value current of instantaneous short-circuit trip unit                                 | 315 ... 1000 A                               |
| <b>Mounting/wiring</b>   |  |
| mounting position  | Vertical                                     |
| fastening method   | Surface mounting and installation            |
| type of electrical connection for supply voltage line-side   | Box lug                                      |
| type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded                  | 1x (10 AWG ... 1/0 AWG)                      |
| temperature of the conductor for supply maximum permissible  | 75 °C  |
| material of the conductor for supply   | AL or CU                                     |
| type of electrical connection for load-side outgoing feeder  | Box lug                                      |
| tightening torque [lbf-in] for load-side outgoing feeder   | 45 ... 45 lbf-in                             |
| type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded | 1x (14 ... 2 AWG)                            |
| temperature of the conductor for load-side outgoing feeder maximum permissible                                     | 75 °C  |
| material of the conductor for load-side outgoing feeder  | AL or CU                                     |
| type of electrical connection of magnet coil   | Screw-type terminals                         |
| tightening torque [lbf-in] at magnet coil  | 5 ... 12 lbf-in                              |
| type of connectable conductor cross-sections of magnet coil for AWG cables single or multi-stranded                | 2x (16 ... 12 AWG)                           |
| temperature of the conductor at magnet coil maximum permissible  | 75 °C  |
| material of the conductor at magnet coil   | CU   |

|   |   |
|---|---|
| type of electrical connection at contactor for auxiliary contacts   | Screw-type terminals                                |
| tightening torque [lbf-in] at contactor for auxiliary contacts  | 10 ... 15 lbf-in                                    |
| type of connectable conductor cross-sections at contactor for AWG cables for auxiliary contacts single or multi-stranded      | 1x (12 AWG), 2x (16 ... 14 AWG), 2x (18 ... 16 AWG) |
| temperature of the conductor at contactor for auxiliary contacts maximum permissible  | 75 °C   |
| material of the conductor at contactor for auxiliary contacts   | CU  |
| type of electrical connection at overload relay for auxiliary contacts  | Screw-type terminals                                |
| tightening torque [lbf-in] at overload relay for auxiliary contacts   | 7 ... 10 lbf-in                                     |
| type of connectable conductor cross-sections at overload relay for AWG cables for auxiliary contacts single or multi-stranded | 2x (20 ... 14 AWG)                                  |
| temperature of the conductor at overload relay for auxiliary contacts maximum permissible                                     | 75 °C   |
| material of the conductor at overload relay for auxiliary contacts  | CU  |

**Short-circuit current rating**

|  |                                     |
|--|-------------------------------------|
| design of the short-circuit trip                                   | Instantaneous trip circuit breaker  |
| maximum short-circuit current breaking capacity (I <sub>cu</sub> ) |                                     |
| • at 240 V   | 100 kA                              |
| • at 480 V   | 100 kA                              |
| • at 600 V   | 25 kA                               |
| certificate of suitability   | NEMA ICS 2; UL 508; CSA 22.2, No.14 |

**Further information**

Industrial Controls - Product Overview (Catalogs, Brochures,...)

[www.usa.siemens.com/iccatalog](http://www.usa.siemens.com/iccatalog)

Industry Mall (Online ordering system)

<https://mall.industry.siemens.com/mall/en/us/Catalog/product?mlfb=US2:84GUG95BMH>

Service&Support (Manuals, Certificates, Characteristics, FAQs,...)

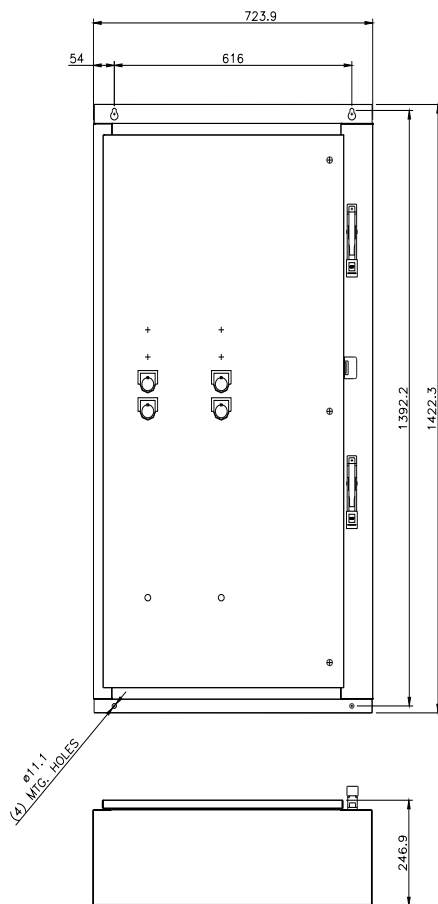
<https://support.industry.siemens.com/cs/US/en/ps/US2:84GUG95BMH>

Image database (product images, 2D dimension drawings, 3D models, device circuit diagrams, EPLAN macros, ...)

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=US2:84GUG95BMH&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=US2:84GUG95BMH&lang=en)

Certificates/approvals

<https://support.industry.siemens.com/cs/US/en/ps/US2:84GUG95BMH/certificate>



# SCHEMATIC DIAGRAM

Class 83 & 84 Duplex W/Manual Alternation Size 0-4



**NOTE:**  
**A.** FOR SEPARATE OR CPE CONTROL VOLTAGE SOURCE, REMOVE RINGS "A", "B", "C", AND "T" AND CONNECT THE DOTTED LINES OR TO 1 AND 2 OF TERMINALS FOR FACTORY OR FIELD MODIFICATIONS.  
**B.** FOR PROTECTION OF INTERNAL CONTROL CIRCUIT CONDUCTORS IN ACCORDANCE WITH THE N.E.C., USE FUSE SET 0-4/30A.  
**C.** TO USE THE CONTROLLER IN TWO REVERSE SWITCHING, REMOVE BETWEEN THE FOLLOWING PAIRS OF TERMINALS 5-4, 5-1.

D68077003

last modified:

1/25/2022