



Duplex starter w/o alternator Size 2 Three phase full voltage Solid-state overload relay OLR amp range 13-52A Combination type Two 60A disconnect switches Enclosure NEMA type 4/12 Water/dust tight weather proof

|                                                                         |                                                                               |
|-------------------------------------------------------------------------|-------------------------------------------------------------------------------|
| product brand name                                                      | Class 84                                                                      |
| design of the product                                                   | Duplex controller with two non-fusible disconnect switches without alternator |
| special product feature                                                 | ESP200 overload relay                                                         |
| <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                                              | 10 hp                                                                         |
| • at 220/230 V rated value                                              | 15 hp                                                                         |
| • at 460/480 V rated value                                              | 25 hp                                                                         |
| • at 575/600 V rated value                                              | 25 hp                                                                         |
| <b>Contactor</b>                                                        |                                                                               |
| size of contactor                                                       | NEMA controller size 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                          | 45 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                                            | 190 ... 220 V                                                                 |
| • at AC at 60 Hz rated value                                            | 220 ... 240 V                                                                 |
| holding power at AC minimum                                             | 8.6 W                                                                         |

|                                                                                                                    |                                         |
|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------|
| 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                                | 13 ... 52 A                             |
| tripping time at phase-loss maximum                                                                                | 3 s                                     |
| relative repeat accuracy                                                                                           | 1 %                                     |
| 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>Disconnect Switch</b>                                                                                           |                                         |
| response value of switch disconnecter                                                                              | 60A / 600V                              |
| design of fuse holder                                                                                              | non-fusible                             |
| operating class of the fuse link                                                                                   | non-fusible                             |
| <b>Enclosure</b>                                                                                                   |                                         |
| degree of protection NEMA rating of the enclosure                                                                  | NEMA Type 12                            |
| design of the housing                                                                                              | dustproof and drip-proof for indoor use |
| <b>Mounting/wiring</b>                                                                                             |                                         |
| mounting position                                                                                                  | Vertical                                |
| fastening method                                                                                                   | Surface mounting and installation       |
| type of electrical connection for supply voltage line-side                                                         | Box lug                                 |
| tightening torque [lbf-in] for supply                                                                              | 35 ... 35 lbf-in                        |
| type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded                  | 1x (14 ... 2 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 fuse link for short-circuit protection of the main circuit required | 10kA@600V (Class H or K); 100kA@600V (Class R or J) |
| 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=US2:84FUF950DG>

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

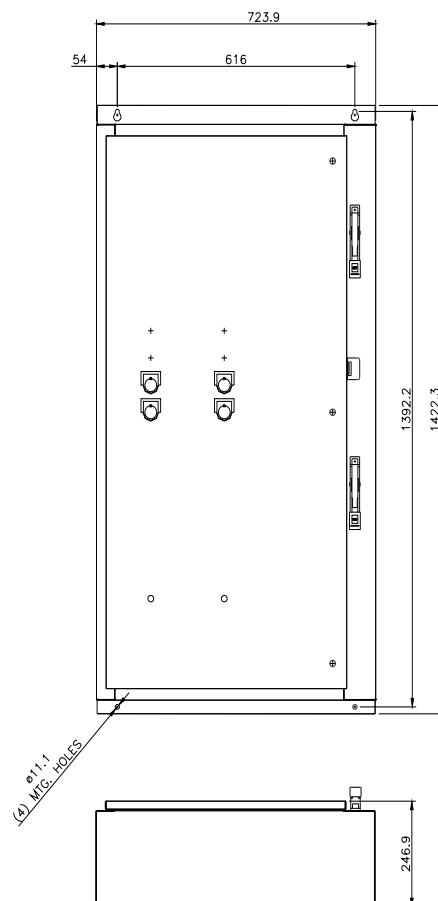
<https://support.industry.siemens.com/cs/US/en/ps/US2:84FUF950DG>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=US2:84FUF950DG&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=US2:84FUF950DG&lang=en)

Certificates/approvals

<https://support.industry.siemens.com/cs/US/en/ps/US2:84FUF950DG/certificate>



## SCHEMATIC DIAGRAM

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



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