

Duplex starter w/ alternator, Size 2 1/2, Three phase full voltage, Solid-state overload relay, OLRelay amp range 25-100A, 110V 50HZ / 120V 60HZ coil, Combination type, Two 100A disconnect switches, Enclosure NEMA type 12, Dust/drip proof for indoors



Figure similar

Product brand name	Class 84
Design of the product	Duplex controller with two non-fusible disconnect switches with alternator
Special product feature	ESP200 overload relay; Half-size controller

General technical data	
Weight [lb]	70 lb
Height x Width x Depth [in]	56 × 29 × 10 in
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

## Horsepower ratings

Yielded mechanical performance [hp] for three-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

## Contactors

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
Operating current at AC at 600 V rated value	60 A
Mechanical service life (switching cycles) of the main contacts typical	10000000

## Auxiliary contact

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)

## Coil

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	110 ... 110 V
• at AC at 60 Hz rated value	120 ... 120 V
Holding power at AC minimum	8.6 W
Apparent pick-up power of magnet coil at AC	218 V·A
Apparent holding power of magnet coil at AC	25 V·A
Operating range factor control supply voltage rated value of magnet coil	0.85 ... 1.1
Percental drop-out voltage of magnet coil related to the input voltage	50 %
Switch-on delay time	19 ... 29 ms
Off-delay time	10 ... 24 ms

## Overload relay

Product function	
• Overload protection	Yes
• Phase failure detection	Yes

• Phase unbalance	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 pick-up value current of the current-dependent overload release	25 ... 100 A
Trip 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
Operating current of auxiliary contacts of overload relay	<ul style="list-style-type: none"> <li>• at AC at 600 V 5 A</li> <li>• at DC at 250 V 1 A</li> </ul>
Contact rating of auxiliary contacts of overload relay according to UL	5A@600VAC (B600), 1A@250VDC (R300)
Insulation voltage	<ul style="list-style-type: none"> <li>• with single-phase operation at AC rated value 600 V</li> <li>• with multi-phase operation at AC rated value 300 V</li> </ul>

#### Disconnect Switch

Rated response values of switch disconnecter	100A / 600V
Design of fuse holder	non-fusible
Operating class of the fuse link	non-fusible

#### Enclosure

Degree of protection NEMA rating of the enclosure	NEMA Type 12
Design of the housing	Dust tight and drip proof for indoors

#### Mounting/wiring

Mounting position	Vertical
Mounting type	Surface mounting and installation
Type of electrical connection for supply voltage line-side	Box lug
Tightening torque [lbf·in] for supply	120 ... 120 lbf·in
Type of connectable conductor cross-sections at line-side at AWG conductors single or multi-stranded	1x (14 ... 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 at AWG conductors 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 at AWG conductors 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 at AWG conductors 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 at AWG conductors 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=US2:84GUG920DF>

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

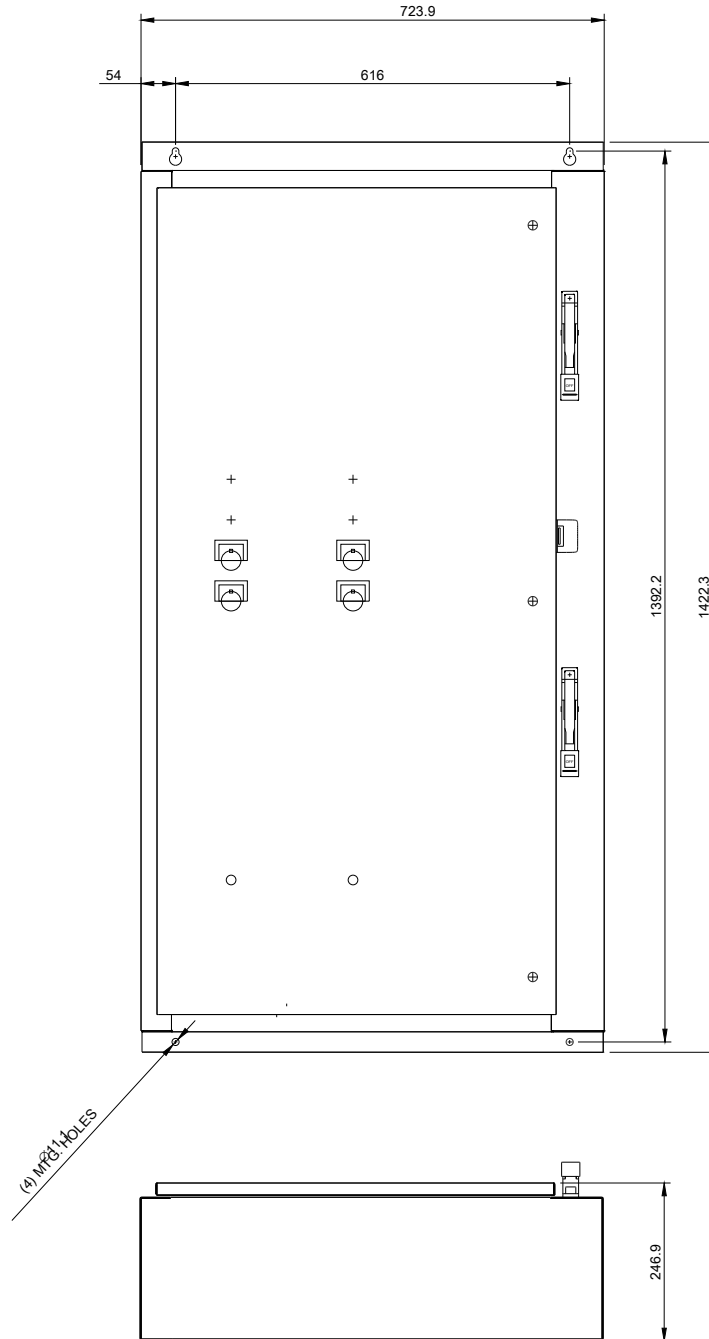
<https://support.industry.siemens.com/cs/US/en/ps/US2:84GUG920DF>

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

[http://www.automation.siemens.com/bilddb/cax\\_de.aspx?mlfb=US2:84GUG920DF&lang=en](http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=US2:84GUG920DF&lang=en)

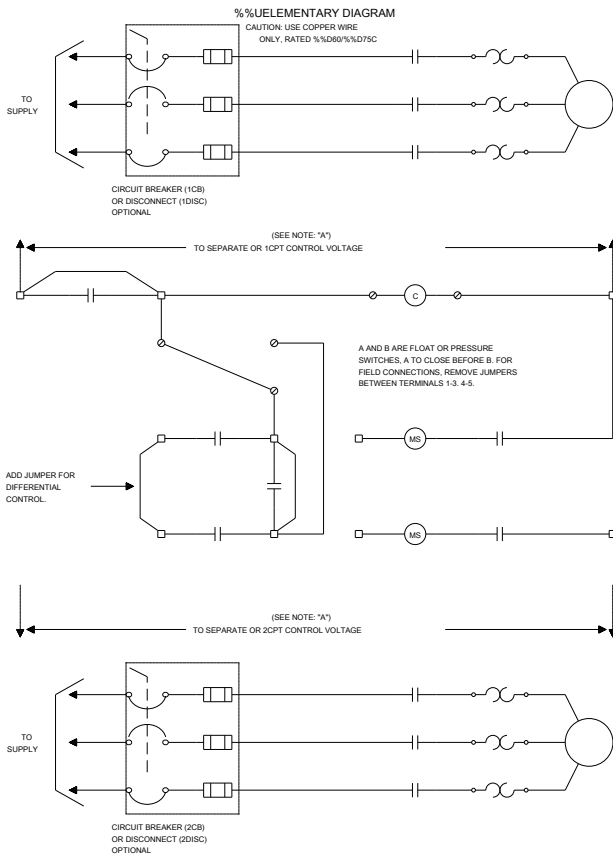
**Certificates/approvals**

<https://support.industry.siemens.com/cs/US/en/ps/US2:84GUG920DF/certificate>



# %%USCHEMATIC DIAGRAM

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



- NOTES:
- A. FOR SEPARATE OR CPT CONTROL VOLTAGE SOURCE, CONNECT PER DOTTED LINES OR TO 1 AND 2 CPT PRIMARIES PER FACTORY OR FIELD MODIFICATIONS.
  - B. FOR PROTECTION OF INTERNAL CONTROL CIRCUIT CONDUCTORS IN ACCORDANCE WITH THE N.E.C., USE FUSE KIT 49MFB4.
  - C. TO USE THIS CONTROLLER TWO SELECTOR SWITCHES, JUMPER BETWEEN THE FOLLOWING PAIRS OF TERMINALS 4-6, 5-7, AND 9-2.
  - D. FOR TWO POSITION SELECTOR SWITCHES, WIRE AS SHOWN ALSO ADD JUMPER BETWEEN TERMINALS 9-2.
  - E. SEPARATE SOURCE CONNECTIONS TO TERMINALS 8 AND 12 ARE REQUIRED ONLY WHEN THREE POSITION SELECTOR SWITCH IS BUILT IN.

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