SIEMENS

Data sheet

US2:14FUF32BS

Non-reversing motor starter, Size 2, Three phase full voltage, Solid-state overload relay, OLR amp range 13-52A, 24VDC coil, Non-combination type, Enclosure type 1, Indoor general purpose use, Standard width enclosure



| product brand name | Class 14 |
|-------------------------------------------------------------------------|------------------------------------------|
| design of the product | Full-voltage non-reversing motor starter |
| special product feature | ESP200 overload relay |
| General technical data | |
| weight [lb] | 13 lb |
| Height x Width x Depth [in] | 14 × 8 × 7 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 |
| Horsepower ratings | |
| 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 |
| Contactor | |
| 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 | 1000000 |
| 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 | DC |
| control supply voltage | |
| at DC rated value | 24 V |
| holding power at AC minimum | 0 W |
| apparent pick-up power of magnet coil at AC | 163 VA |
| apparent holding power of magnet coil at AC | 5.5 VA |

| encreting range factor control cumply voltage rated value of | 0.85 1.1 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating range factor control supply voltage rated value of magnet coil | 0.65 1.1 |
| percental drop-out voltage of magnet coil related to the input voltage | 25 % |
| ON-delay time | 21 21 ms |
| OFF-delay time | 11 11 ms |
| Overload relay | |
| 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 % |
| 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 | |
| contact rating of auxiliary contacts of overload relay according to UL | 5A@600VAC (B600), 1A@250VDC (R300) |
| insulation voltage (Ui) | 2001/ |
| with single-phase operation at AC rated value | 600 V |
| with multi-phase operation at AC rated value | 300 V |
| | |
| Enclosure | 1 |
| degree of protection NEMA rating | 1 |
| degree of protection NEMA rating design of the housing | 1 Indoor general purpose use |
| degree of protection NEMA rating design of the housing Mounting/wiring | Indoor general purpose use |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position | Indoor general purpose use Vertical |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method | Indoor general purpose use Vertical Surface mounting and installation |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side | Indoor general purpose use Vertical Surface mounting and installation Box lug |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf in 1x(14 - 2 AWG) |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder top of connectable conductor cross-sections for AWG cables for load-side outgoing feeder type of connectable conductor for load-side outgoing feeder tupper of the conductor for load-side outgoing feeder tupper of the conductor for load-side outgoing feeder tupper of the conductor for load-side outgoing feeder | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf·in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf·in] for load-side outgoing feeder tightening torque [lbf·in] for load-side outgoing feeder tightening torque [lbf·in] for load-side outgoing feeder type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded temperature of the conductor for load-side outgoing feeder type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded temperature of the conductor for load-side outgoing feeder maximum permissible | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf in 1x(14 - 2 AWG) 75 °C |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder< | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf in 1x(14 - 2 AWG) 75 °C AL or CU AL or CU |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded temperature of the conductor for load-side outgoing feeder type of connectable conductor for load-side outgoing feeder maximum permissible material of the conductor for load-side outgoing feeder temperature of the conductor for load-side outgoing feeder type of electrical connection of magnet coil | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU screw-type terminals |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded temperature of the conductor for load-side outgoing feeder type of connectable conductor for load-side outgoing feeder maximum permissible material of the conductor for load-side outgoing feeder type of electrical connection of magnet coil tightening torque [lbf-in] at magnet coil | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU screw-type terminals 5 12 lbf-in |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder type of connectable conductor for load-side outgoing feeder type of connectable conductor for load-side outgoing feeder type of connectable conductor for load-side outgoing feeder type of the conductor for load-side outgoing feeder maximum permissible material of the conductor for load-side outgoing feeder type of electrical connection of magnet coil tightening torque [lbf-in] at magnet coil tightening torque [lbf-in] at magnet coil tightening torque [lbf-in] at magnet coil type of connectable conductor cross-sections of magnet coil for | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU screw-type terminals 5 12 lbf-in 2 x (16 - 12 AWG) |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder type of connectable conductor for load-side outgoing feeder type of connectable conductor for load-side outgoing feeder type of connectable conductor for load-side outgoing feeder type of the conductor for load-side outgoing feeder temperature of the conductor for load-side outgoing feeder maximum permissible material of the conductor for load-side outgoing feeder type of electrical connection of magnet coil tightening torque [lbf-in] at magnet coil tightening torque [lbf-in] at magnet coil | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf in 1x(14 - 2 AWG) 75 °C AL or CU screw-type terminals 5 12 lbf in 2 x (16 - 12 AWG) 75 °C |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded temperature of the conductor for load-side outgoing feeder maximum permissible material of the conductor for load-side outgoing feeder type of connectable conductor cross-sections of magnet coil tightening torque [lbf-in] at magnet coil type of connectable conductor cross-sections of magnet coil for AWG cables single or multi-stranded temperature of the conductor at magnet coil maximum permissible < | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU screw-type terminals 5 12 lbf-in 2 x (16 - 12 AWG) 75 °C CU |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded temperature of the conductor for load-side outgoing feeder maximum permissible material of the conductor for load-side outgoing feeder type of electrical connection of magnet coil tightening torque [lbf-in] at magnet coil type of connectable conductor cross-sections of magnet coil for AWG cables single or multi-stranded temperature of the conductor at magnet coil maximum type of connectable conductor at magnet coil maximum permissible | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU screw-type terminals 5 12 lbf-in 2 x (16 - 12 AWG) 75 °C CU screw-type terminals |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded temperature of the conductor for load-side outgoing feeder maximum permissible material of the conductor for load-side outgoing feeder type of electrical connection of magnet coil tightening torque [lbf-in] at magnet coil tightening torque [lbf-in] at magnet coil type of connectable conductor cross-sections of magnet coil for AWG cables single or multi-stranded temperature of the conductor at magnet coil tightening torque [lbf-in] at contactor for auxiliary contacts tightening torque [lbf-in] at contactor for auxiliary contacts </td <td>Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU screw-type terminals 5 12 lbf-in 2 x (16 - 12 AWG) 75 °C CU screw-type terminals 10 15 lbf-in</td> | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU screw-type terminals 5 12 lbf-in 2 x (16 - 12 AWG) 75 °C CU screw-type terminals 10 15 lbf-in |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded temperature of the conductor for load-side outgoing feeder maximum permissible material of the conductor for load-side outgoing feeder type of electrical connection of magnet coil type of connectable conductor cross-sections of magnet coil for AWG cables single or multi-stranded temperature of the conductor at magnet coil type of electrical connection for auxiliary contacts type of electrical connection for auxiliary contacts tightening torque [lbf-in] at contactor for auxi | Indoor general purpose useVerticalSurface mounting and installationBox lug45 45 lbf·in $1x(14 - 2 AWG)$ 75 °CAL or CUBox lug45 45 lbf·in $1x(14 - 2 AWG)$ 75 °CAL or CUscrew-type terminals5 12 lbf·in2 x (16 - 12 AWG)75 °CCUScrew-type terminals10 15 lbf·in1 x (12 AWG), 2 x (16 - 14 AWG), 2 x (18 - 16 AWG) |
| degree of protection NEMA rating design of the housing Mounting/wiring mounting position fastening method type of electrical connection for supply voltage line-side tightening torque [lbf-in] for supply type of connectable conductor cross-sections at line-side for AWG cables single or multi-stranded temperature of the conductor for supply maximum permissible material of the conductor for supply type of electrical connection for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder tightening torque [lbf-in] for load-side outgoing feeder type of connectable conductor cross-sections for AWG cables for load-side outgoing feeder single or multi-stranded temperature of the conductor for load-side outgoing feeder type of electrical connection of magnet coil type of connectable conductor cross-sections of magnet coil for AWG cables single or multi-stranded temperature of the conductor at magnet coil type of connectable conductor at magnet coil maximum permissible material of the conductor at magnet coil type of electrical connection for auxiliary contacts | Indoor general purpose use Vertical Surface mounting and installation Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU Box lug 45 45 lbf-in 1x(14 - 2 AWG) 75 °C AL or CU screw-type terminals 5 12 lbf-in 2 x (16 - 12 AWG) 75 °C CU screw-type terminals 10 15 lbf-in |

| 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 | 2 x (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 | 10kA@600V (Class H or K); 100kA@600V (Class R or J) |
| circuit required | |
| | Thermal magnetic circuit breaker |
| circuit required | |
| circuit required design of the short-circuit trip | |
| circuit required design of the short-circuit trip maximum short-circuit current breaking capacity (Icu) | Thermal magnetic circuit breaker |
| circuit required design of the short-circuit trip maximum short-circuit current breaking capacity (Icu) • at 240 V | Thermal magnetic circuit breaker 14 kA |
| circuit required design of the short-circuit trip maximum short-circuit current breaking capacity (Icu) • at 240 V • at 480 V | Thermal magnetic circuit breaker 14 kA 10 kA |

Further information

Industrial Controls - Product Overview (Catalogs, Brochures,...) www.usa.siemens.com/iccatalog

Industry Mall (Online ordering system)

https://mall.industry.siemens.com/mall/en/us/Catalog/product?mlfb=US2:14FUF32BS

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

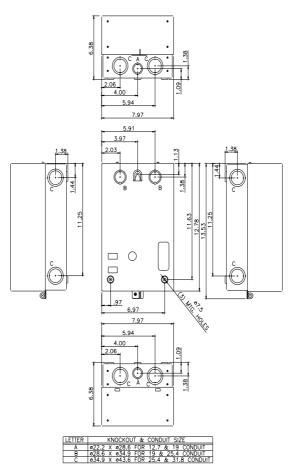
https://support.industry.siemens.com/cs/US/en/ps/US2:14FUF32E

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

http://www.automation.siemens.com/bilddb/cax_de.aspx?mlfb=US2:14FUF32BS&lang=en

Certificates/approvals

https://support.industry.siemens.com/cs/US/en/ps/US2:14FUF32BS/certificate





last modified:

11/29/2021 🖸