

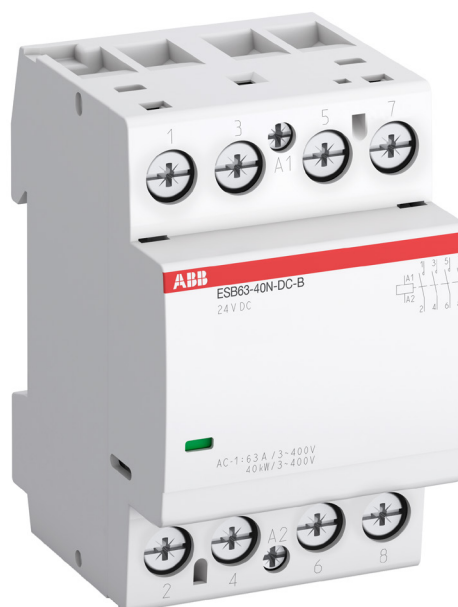
Installation contactors

ESB63-40N-DC-B

The ESB63-40-DC-B is an installation contactor specially designed for EV charging applications. The contactor can be operated with 24 V DC and controls up to 4 phases.

Installation contactors ESB are specially designed to fit to DIN rails and offer due to their hum-free operation a noise-free environment.

- Rated operational voltage 400 V AC at 50/60 Hz
- Max. rated operational current I_e AC-1: 63 A
- Control voltage: 24 V DC
- 4-pole contactor with normally open contacts
- Hum-free coil



2CDC221002V0020

Application

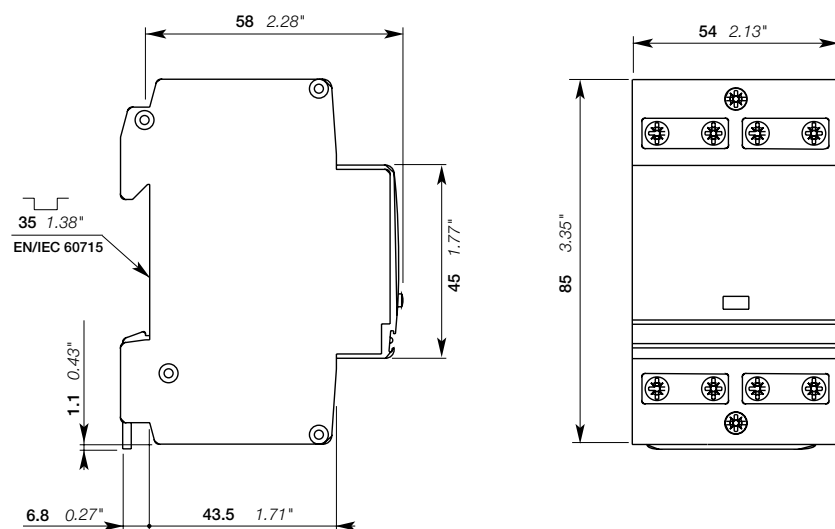
ESB63 installation contactors are intended for controlling 1- and 3-phase loads for EV charging applications.

Ordering

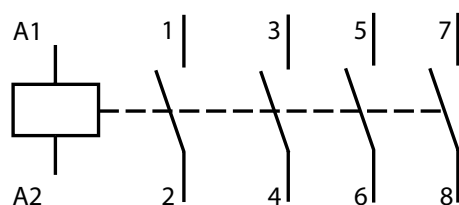
Extended Product Type	ESB63-40N-DC-B
Product ID	1SAE351221R0140
EAN	4013614551215
Package Level 1 EAN	
Minimum Order Quantity	1 piece
Customs Tariff Number	85365080

Dimensions

Product net width	54 mm
Product net height	85 mm
Product net depth/length	65 mm
Product net weight	0.405 kg



Operation mode



Main pole – utilization characteristics according to IEC/EN

Standards	IEC/EN 60947-4-1
Rated operational voltage	400 V AC
Rated frequency	50/60 Hz
Rated operational current AC-1	for air temperature near the contactor = 55 °C 63 A
	for air temperature near the contactor = 85 °C ¹⁾ 40 A
	for air temperature near the contactor = 85 °C, 2 poles in parallel ¹⁾ 80 A
Coordination with short-circuit protective devices	400 V
Type 1	gG type fuses coordinated up to 10kA 80 A

¹⁾ Value determined including a reduction of the holding voltage to 12 V during temperature rise test with 25 mm² wire size.

Main pole – utilization characteristics according to UL/CSA

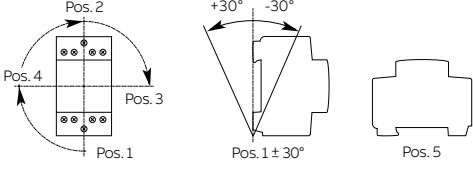
Standards	UL/CSA 60947-4-1
Maximum operational voltage	480 V AC
Rated frequency	50/60 Hz
General use rating	240/480 V AC 63 A
Short-circuit protection for contactors without thermal O/L relay	Fuse rating 75 A
	Fuse type 480 V/5 kA K5

Electrical ratings – poles in parallel¹⁾

No. Poles in parallel	Multiples of current
2 poles	1.6
3 poles	2.2
4 poles	2.5

¹⁾ Application note: recommend using 25 mm² wire with upstream paralleling connection at a distance of between 35-50 mm.

General technical data

Rated insulation voltage acc. to IEC/EN 60947-4-1	500 V
Rated impulse withstand voltage	6 kV
Ambient air temperature ¹⁾	close to contactor for holding with 0.5 U _c after pull-in with 1.0 ... 1.1 U _c -40 ... +85 °C
	close to contactor for operation at 0.75 ... 1.1 U _c -40 ... +40 °C
	close to contactor for operation at 0.85 ... 1.1 U _c -40 ... +55 °C
	storage -40 ... +80 °C
Environmental conditions climatic withstand	IEC/EN 60068-2-30
Current reduction factors at high altitude acc. to IEC/EN 60947-1, 60664-1, 60071-2 T _A ≤ 60°C, AC-1, AC-3, pollution degree 3	2000 m No reduction
	3000 m 0.93
	4000 m 0.88
	5000 m 0.82
Resistance to shock acc. to IEC/EN 60068-2-27 ²⁾ 11 ms pulse	15 g/axes xyz
Mounting position	
Mounting on DIN rail	TH35-7.5 (35 x 7.5 mm mounting rail) acc. to IEC/EN 60715 TH35-15 (35 x 15 mm mounting rail) acc. to IEC/EN 60715
Power loss ³⁾ at rated operating conditions per pole	6 W
Maximum electrical switching frequency AC-1	300 cycles per hour
Mechanical durability	1.000.000 cycles

¹⁾ For ambient temperatures greater than 40° C, add spacer ESB-DIS for each additional contactor mounted side-by-side. For temperatures above 55 °C up to 85 °C, holding with 0.5 x U_c after pull-in with 1.0 ... 1.1 x U_c is required. Voltage must be reduced to 0.5 x U_c within 1 min. following completion of the pull-in sequence at 1.0 ... 1.1 x U_c.

²⁾ Applicable for standard product only, when powered with 1.0 x U_c. Not validated for holding with 0.5 x U_c.

³⁾ New condition, 63 A, four poles in series at 20 °C ambient.

Magnet system characteristics

Rated control circuit voltage		24 V DC
Coil operating limits acc. to IEC/EN 60947-4-1		0.85 ... 1.1 x U _c (at θ ≤ 55 °C) ¹⁾
Drop-out voltage in % of U _c		approx. 10 ... 35 % (at θ ≤ 85 °C)
Rated frequency control circuit		DC
Coil consumption	average pull-in value DC	41 W
	average holding value DC	4 W
	average holding value DC (0.5 U _c)	1 W
Operating time	between coil energization and NO contact closing	20 ms
	between coil de-energization and NO contact opening	7 ms
Insulation resistance		class F (155 °C)

¹⁾ Coil operation down to 0.75 x U_c is acceptable for ambient temperatures not exceeding 40 °C. For temperatures above 55 °C up to 85 °C, holding with 0.5 x U_c after pull-in with 1.0 ... 1.1 x U_c is required. Voltage must be reduced to 0.5 x U_c within 1 min. following completion of the pull-in sequence at 1.0 ... 1.1 x U_c . Use of the EH-04 auxiliary contact block not acceptable below 0.85 x U_c or for temperatures above 55 °C.

Main circuit - Connecting characteristics

Rigid	1x 1.5 ... 25 mm ² 2x 1.5 ... 10 mm ²
Flexible with ferrule	1x 1.5 ... 16 mm ² 2x 1.5 ... 10 mm ²
Flexible with insulated ferrule	1x 1.5 ... 16 mm ² 2x 1.5 ... 10 mm ²
Flexible	1x 1.5 ... 16 mm ² 2x 1.5 ... 10 mm ²
Stranded acc. To UL/CSA	16-4 AWG
Degree of protection	IP20
Wire stripping length	13 mm
Tightening torque	2.5 N·m/20 lb·in
Recommended screw driver	Pozidriv 2

Control circuit - Connecting characteristics

Rigid	1x 1 ... 4 mm ² 2x 1 ... 2.5 mm ²
Flexible with ferrule	1x 0.75 ... 2.5 mm ² 2x 0.75 ... 1 mm ²
Flexible with insulated ferrule	1x 0.75 ... 2.5 mm ² 2x 0.75 ... 1 mm ²
Flexible	1x 1 ... 4 mm ² 2x 1 ... 2.5 mm ²
Stranded acc. To UL/CSA	16-10 AWG
Degree of protection	IP20
Wire stripping length	7 mm
Tightening torque	0.9 N·m/8 lb·in
Recommended screw driver	Pozidriv 1