



PRODUCT-DETAILS

# AF09-40-00-14LU

## AF09-40-00-14LU 250-500V50/60HZ-DC

### Contactors



| General Information   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Extended Product Type | AF09-40-00-14LU                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Product ID            | 1SBL137287R1400                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| EAN                   | 3471523020566                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Catalog Description   | AF09-40-00-14LU 250-500V50/60HZ-DC Contactor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Long Description      | The AF09-40-00-14LU is a 4-pole - 600 UL contactor with screw terminals, dedicated for UL lighting applications. Thanks to the AF technology, the contactor has a wide control voltage range (250-500 V 50/60 Hz and DC), managing large control voltage variations, reducing panel energy consumptions and ensuring distinct operations in unstable networks. Furthermore, surge protection is built-in, offering a compact solution. AF contactors have a block type design, can be easily extended with add-on auxiliary contact blocks and an additional wide range of accessories. |

| Ordering               |          |
|------------------------|----------|
| Minimum Order Quantity | 1 piece  |
| Customs Tariff Number  | 85364900 |

### Popular Downloads

|                                   |                 |
|-----------------------------------|-----------------|
| Data Sheet, Technical Information | 1SBC100214C0202 |
| Instructions and Manuals          | 1SBC101027M6801 |
| Instructions and Manuals (Part 2) | 1SAC200017M0002 |
| CAD Dimensional Drawing           | 2CDC001079B0201 |

## Dimensions

|                            |         |
|----------------------------|---------|
| Product Net Width          | 45 mm   |
| Product Net Depth / Length | 77 mm   |
| Product Net Height         | 86 mm   |
| Product Net Weight         | 0.31 kg |

## Technical

|                                                             |                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Number of Main Contacts NO                                  | 4                                                                                                                                                                                                                                                                                                                                               |
| Number of Main Contacts NC                                  | 0                                                                                                                                                                                                                                                                                                                                               |
| Number of Auxiliary Contacts NO                             | 0                                                                                                                                                                                                                                                                                                                                               |
| Number of Auxiliary Contacts NC                             | 0                                                                                                                                                                                                                                                                                                                                               |
| Number of Poles                                             | 4P                                                                                                                                                                                                                                                                                                                                              |
| Standards                                                   | IEC/EN 60947-1, IEC/EN 60947-4-1, UL 60335-2-40 LZGH2 A2L, UL 508, CSA C22.2 No. 60335-2-40 LZGH2 A2L, CSA C22.2 No. 60947-4-1                                                                                                                                                                                                                  |
| Rated Operational Voltage                                   | Main Circuit 690 V                                                                                                                                                                                                                                                                                                                              |
| Rated Frequency (f)                                         | Control Circuit 50 / 60 Hz<br>Main Circuit 50 / 60 Hz                                                                                                                                                                                                                                                                                           |
| Conventional Free-air Thermal Current ( $I_{th}$ )          | acc. to IEC 60947-4-1, Open Contactors $\Theta = 40\text{ °C}$ 35 A                                                                                                                                                                                                                                                                             |
| Rated Operational Current AC-1 ( $I_e$ )                    | (690 V) 40 °C 25 A<br>(690 V) 60 °C 25 A<br>(690 V) 70 °C 22 A                                                                                                                                                                                                                                                                                  |
| Rated Operational Current AC-3 ( $I_e$ )                    | (415 V) 60 °C 9 A<br>(440 V) 60 °C 9 A<br>(500 V) 60 °C 9.5 A<br>(690 V) 60 °C 7 A<br>(380 / 400 V) 60 °C 9 A<br>(220 / 230 / 240 V) 60 °C 9 A                                                                                                                                                                                                  |
| Rated Operational Power AC-3 ( $P_e$ )                      | (400 V) 4 kW<br>(415 V) 4 kW<br>(440 V) 4 kW<br>(500 V) 5.5 kW<br>(690 V) 5.5 kW<br>(380 / 400 V) 4 kW<br>(220 / 230 / 240 V) 2.2 kW                                                                                                                                                                                                            |
| Rated Short-time Withstand Current Low Voltage ( $I_{cw}$ ) | at 40 °C Ambient Temp, in Free Air, from a Cold State 10 s 150 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 15 min 35 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 min 60 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 1 s 300 A<br>at 40 °C Ambient Temp, in Free Air, from a Cold State 30 s 80 A |
| Maximum Breaking Capacity                                   | cos phi=0.45 (cos phi=0.35 for $I_e > 100\text{ A}$ ) at 440 V 250 A<br>cos phi=0.45 (cos phi=0.35 for $I_e > 100\text{ A}$ ) at 690 V 106 A                                                                                                                                                                                                    |
| Rated Insulation Voltage ( $U_i$ )                          | acc. to IEC 60947-4-1 690 V<br>acc. to UL/CSA 600 V                                                                                                                                                                                                                                                                                             |

|                                               |                                                                                                                                                                                                                                                                                                |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Rated Impulse Withstand Voltage ( $U_{imp}$ ) | 6 kV                                                                                                                                                                                                                                                                                           |
| Maximum Electrical Switching Frequency        | (AC-1) 600 cycles per hour                                                                                                                                                                                                                                                                     |
| Maximum Mechanical Switching Frequency        | 3600 cycles per hour                                                                                                                                                                                                                                                                           |
| Rated Control Circuit Voltage ( $U_c$ )       | 50 Hz 250 ... 500 V<br>60 Hz 250 ... 500 V<br>DC Operation 250 ... 500 V                                                                                                                                                                                                                       |
| Power Loss                                    | at Rated Operating Conditions AC-1 per Pole 0.8 W<br>at Rated Operating Conditions AC-3 per Pole 0.1 W                                                                                                                                                                                         |
| Operate Time                                  | Between Coil De-energization and NC Contact Closing 13 ... 98 ms<br>Between Coil De-energization and NO Contact Opening 11 ... 95 ms<br>Between Coil Energization and NC Contact Opening 38 ... 90 ms<br>Between Coil Energization and NO Contact Closing 40 ... 95 ms                         |
| Mounting on DIN Rail                          | TH35-15 (35 x 15 mm Mounting Rail) acc. to IEC 60715<br>TH35-7.5 (35 x 7.5 mm Mounting Rail) acc. to IEC 60715                                                                                                                                                                                 |
| Mounting by Screws (not supplied)             | 2 x M4 Screws Placed Diagonally                                                                                                                                                                                                                                                                |
| Connecting Capacity Main Circuit              | Flexible with Ferrule 1/2x 0.75 ... 6 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 4 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.75 ... 2.5 mm <sup>2</sup><br>Rigid Solid 1/2x 1 ... 4 mm <sup>2</sup><br>Rigid Stranded 1/2x 1 ... 6 mm <sup>2</sup>           |
| Connecting Capacity Auxiliary Circuit         | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1/2x 0.75 ... 1.5 mm <sup>2</sup><br>Rigid Solid 1/2x 1 ... 2.5 mm <sup>2</sup><br>Rigid Stranded 1/2x 1 ... 2.5 mm <sup>2</sup> |
| Connecting Capacity Control Circuit           | Flexible with Ferrule 1/2x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 1x 0.75 ... 2.5 mm <sup>2</sup><br>Flexible with Insulated Ferrule 2x 0.75 ... 1.5 mm <sup>2</sup><br>Rigid Solid 1/2x 1 ... 2.5 mm <sup>2</sup><br>Rigid Stranded 1/2x 1 ... 2.5 mm <sup>2</sup>   |
| Wire Stripping Length                         | Control Circuit 10 mm<br>Main Circuit 10 mm                                                                                                                                                                                                                                                    |
| Degree of Protection                          | acc. to IEC 60529, IEC 60947-1, EN 60529 Coil Terminals IP20<br>acc. to IEC 60529, IEC 60947-1, EN 60529 Main Terminals IP20                                                                                                                                                                   |
| Tightening Torque                             | Control Circuit 1.2 N·m<br>Main Circuit 1.5 N·m                                                                                                                                                                                                                                                |
| Terminal Type                                 | Screw Terminals                                                                                                                                                                                                                                                                                |
| Product Name                                  | Block Contactor                                                                                                                                                                                                                                                                                |

## Technical UL/CSA

|                                              |                                                             |
|----------------------------------------------|-------------------------------------------------------------|
| Maximum Operating Voltage UL/CSA             | Main Circuit 600 V                                          |
| General Use Rating UL/CSA                    | (600 V AC) 25 A                                             |
| Connecting Capacity Main Circuit UL/CSA      | Rigid Solid 1/2x 16-10 AWG<br>Rigid Stranded 1/2x 16-10 AWG |
| Connecting Capacity Auxiliary Circuit UL/CSA | Rigid Solid 1/2x 18-14 AWG<br>Rigid Stranded 1/2x 18-14 AWG |
| Connecting Capacity Control Circuit UL/CSA   | Rigid Solid 1/2x 18-14 AWG<br>Rigid Stranded 1/2x 18-14 AWG |
| Tightening Torque UL/CSA                     | Control Circuit 11 in·lb<br>Main Circuit 13 in·lb           |

## Environmental

|                                            |                                                                                                                                                                                  |
|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ambient Air Temperature                    | Close to Contactor for Storage -60 ... +80 °C<br>Near Contactor for Operation in Free Air -40 ... 70 °C                                                                          |
| Climatic Withstand                         | Category B according to IEC 60947-1 Annex Q                                                                                                                                      |
| Maximum Operating Altitude Permissible     | Without Derating 3000 m                                                                                                                                                          |
| Resistance to Shock acc. to IEC 60068-2-27 | Closed, Shock Direction: B1 25 g<br>Open, Shock Direction: B1 5 g<br>Shock Direction: A 30 g<br>Shock Direction: B2 15 g<br>Shock Direction: C1 25 g<br>Shock Direction: C2 25 g |
| Resistance to Vibrations                   | 4g Closed Position & 2g Open position 5 ... 300 Hz                                                                                                                               |
| Pollution Degree                           | 3                                                                                                                                                                                |

## Material Compliance

|                                             |                                                                        |
|---------------------------------------------|------------------------------------------------------------------------|
| Conflict Minerals Reporting Template (CMRT) | 9AKK108467A5658                                                        |
| REACH Declaration                           | 2CMT2021-006202                                                        |
| RoHS Declaration                            | 2CMT2021-006277                                                        |
| RoHS Information                            | Following EU Directive 2011/65/EU and Amendment 2015/863 July 22, 2019 |
| Toxic Substances Control Act - TSCA         | 2CMT2023-006525                                                        |
| WEEE B2C / B2B                              | Business To Business                                                   |
| WEEE Category                               | 5. Small Equipment (No External Dimension More Than 50 cm)             |

## ABB EcoSolutions

|                                                   |                                                                                                                                          |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| ABB EcoSolutions                                  | Yes                                                                                                                                      |
| ABB Site Meeting Group Waste To Landfill Target   | No non-hazardous waste is sent to a landfill                                                                                             |
| End Of Life Disassembling Instructions            | 1SBC101080M6801                                                                                                                          |
| Environmental Product Declaration - EPD           | 1SBD250584E3000                                                                                                                          |
| Improved Energy Efficiency for Customers          | Product Efficiency - Product considered more energy-efficient compared to similar product on market or older products from the same line |
| Recyclability Rate of the Product acc. to EN45555 | Design for Closing Resource Loops - Standard EN45555 - 92.7 %                                                                            |

## Certificates and Declarations

|                                  |                                    |
|----------------------------------|------------------------------------|
| A2L Certificate – UL             | 9AKK108469A4875<br>9AKK108469A4879 |
| CB Certificate                   | CB_SE-117714                       |
| Declaration of Conformity - CE   | 1SBD250062U1000                    |
| Declaration of Conformity - UKCA | 1SBD250063U1000                    |
| UL Certificate                   | UL_20180227_E312527_7_1            |

## Container Information

|                       |             |
|-----------------------|-------------|
| Package Level 1 Units | box 1 piece |
|-----------------------|-------------|

|                                |               |
|--------------------------------|---------------|
| Package Level 1 Width          | 87 mm         |
| Package Level 1 Depth / Length | 79 mm         |
| Package Level 1 Height         | 47 mm         |
| Package Level 1 Gross Weight   | 0.31 kg       |
| Package Level 1 EAN            | 3471523020566 |

## External Classifications and Standards

|                                    |                                          |
|------------------------------------|------------------------------------------|
| Object Classification Code         | Q                                        |
| ETIM 7                             | EC000066 - Power contactor, AC switching |
| ETIM 8                             | EC000066 - Power contactor, AC switching |
| ETIM 9                             | EC000066 - Power contactor, AC switching |
| eClass                             | V11.0 : 27371003                         |
| UNSPSC                             | 39121529                                 |
| IDEA Granular Category Code (IGCC) | 4760 >> Lighting Contactors              |

## Accessories

| Identifier      | Description                                      | Type       | Quantity | Unit Of Measure |
|-----------------|--------------------------------------------------|------------|----------|-----------------|
| 1SBN010015R1001 | CE5-01D0.1 Auxiliary Contact Block               | CE5-01D0.1 | 1        | piece           |
| 1SBN010015R1010 | CE5-10D0.1 Auxiliary Contact Block               | CE5-10D0.1 | 1        | piece           |
| 1SBN010016R1001 | CE5-01W0.1 Auxiliary Contact Block               | CE5-01W0.1 | 1        | piece           |
| 1SBN010016R1010 | CE5-10W0.1 Auxiliary Contact Block               | CE5-10W0.1 | 1        | piece           |
| 1SBN010017R1001 | CE5-01D2 Auxiliary Contact Block                 | CE5-01D2   | 1        | piece           |
| 1SBN010017R1010 | CE5-10D2 Auxiliary Contact Block                 | CE5-10D2   | 1        | piece           |
| 1SBN010018R1001 | CE5-01W2 Auxiliary Contact Block                 | CE5-01W2   | 1        | piece           |
| 1SBN010018R1010 | CE5-10W2 Auxiliary Contact Block                 | CE5-10W2   | 1        | piece           |
| 1SBN010110R1010 | CA4-10 Auxiliary Contact Block                   | CA4-10     | 1        | piece           |
| 1SBN010110T1010 | CA4-10-T Auxiliary Contact Block                 | CA4-10-T   | 1        | piece           |
| 1SBN010110R1001 | CA4-01 Auxiliary Contact Block                   | CA4-01     | 1        | piece           |
| 1SBN010110T1001 | CA4-01-T Auxiliary Contact Block                 | CA4-01-T   | 1        | piece           |
| 1SBN010111R1010 | CC4-10 Leading Auxiliary Contact Block           | CC4-10     | 1        | piece           |
| 1SBN010111R1001 | CC4-01 Lagging Auxiliary Contact Block           | CC4-01     | 1        | piece           |
| 1SBN010120R1011 | CAL4-11 Auxiliary Contact Block                  | CAL4-11    | 1        | piece           |
| 1SBN010120T1011 | CAL4-11-T Auxiliary Contact Block                | CAL4-11-T  | 1        | piece           |
| 1SBN010140R1022 | CA4-22E Auxiliary Contact Block                  | CA4-22E    | 1        | piece           |
| 1SBN010140R1031 | CA4-31E Auxiliary Contact Block                  | CA4-31E    | 1        | piece           |
| 1SBN010140R1040 | CA4-40E Auxiliary Contact Block                  | CA4-40E    | 1        | piece           |
| 1SBN010140R1004 | CA4-04E Auxiliary Contact Block                  | CA4-04E    | 1        | piece           |
| 1SBN010140R1322 | CA4-22U Auxiliary Contact Block                  | CA4-22U    | 1        | piece           |
| 1SBN010140R1122 | CA4-22M Auxiliary Contact Block                  | CA4-22M    | 1        | piece           |
| 1SBN010151R1011 | CAT4-11E Auxiliary Contact / Coil Terminal Block | CAT4-11E   | 1        | piece           |
| 1SBN010140R1331 | CA4-31U Auxiliary Contact Block                  | CA4-31U    | 1        | piece           |
| 1SBN010140R1131 | CA4-31M Auxiliary Contact Block                  | CA4-31M    | 1        | piece           |
| 1SBN010151R1111 | CAT4-11M Auxiliary Contact / Coil Terminal Block | CAT4-11M   | 1        | piece           |
| 1SBN010140R1340 | CA4-40U Auxiliary Contact Block                  | CA4-40U    | 1        | piece           |
| 1SBN010140R1113 | CA4-13M Auxiliary Contact Block                  | CA4-13M    | 1        | piece           |

|                 |                                                    |           |   |       |
|-----------------|----------------------------------------------------|-----------|---|-------|
| 1SBN010151R1311 | CAT4-11U Auxiliary Contact / Coil Terminal Block   | CAT4-11U  | 1 | piece |
| 1SBN070156T1000 | LDC4 Additional Coil Terminal Block                | LDC4      | 1 | piece |
| 1SBN010140R1104 | CA4-04M Auxiliary Contact Block                    | CA4-04M   | 1 | piece |
| 1SBN020112R1000 | TEF4-ON Frontal Electronic Timer                   | TEF4-ON   | 1 | piece |
| 1SBN020113R1000 | TEF4S-ON Frontal Electronic Timer                  | TEF4S-ON  | 1 | piece |
| 1SBN010134R1011 | CAL4-11K Auxiliary Contact Block                   | CAL4-11K  | 1 | piece |
| 1SBN020114R1000 | TEF4-OFF Frontal Electronic Timer                  | TEF4-OFF  | 1 | piece |
| 1SBN020115R1000 | TEF4S-OFF Frontal Electronic Timer                 | TEF4S-OFF | 1 | piece |
| 1SBN071303T1000 | LY16-4 Connecting Strip                            | LY16-4    | 1 | piece |
| 1SBN071305R1000 | LF16-4 Connecting Strip                            | LF16-4    | 1 | piece |
| 1SBN110108T1000 | BX4 Protective Cover                               | BX4       | 1 | piece |
| 1SBN071306R1000 | LG16-4 Connecting Strip                            | LG16-4    | 1 | piece |
| 1SBN040100R1011 | WA4-11 24-60V50/60HZ-DC Mechanical Latching Unit   | WA4-11    | 1 | piece |
| 1SBN040100R1014 | WA4-14 250-500V50/60HZ-DC Mechanical Latching Unit | WA4-14    | 1 | piece |
| 1SBN040100R1010 | WA4-10 24VDC Mechanical Latching Unit              | WA4-10    | 1 | piece |
| 1SBN040100R1012 | WA4-12 48-130V50/60HZ-DC Mechanical Latching Unit  | WA4-12    | 1 | piece |
| 1SBN060100R1000 | RA4 Interface Relay                                | RA4       | 1 | piece |
| 1SBN010146R1104 | CA4-04MK Auxiliary Contact Block                   | CA4-04MK  | 1 | piece |
| 1SBN040100R1013 | WA4-13 100-250V50/60HZ-DC Mechanical Latching Unit | WA4-13    | 1 | piece |
| 1SBN010146R1113 | CA4-13MK Auxiliary Contact Block                   | CA4-13MK  | 1 | piece |
| 1SBN070159T1000 | LDC4K Additional Coil Terminal Block               | LDC4K     | 1 | piece |
| 1SBN010160R1001 | CA4-01K Auxiliary Contact Block                    | CA4-01K   | 1 | piece |
| 1SBN010146R1022 | CA4-22EK Auxiliary Contact Block                   | CA4-22EK  | 1 | piece |
| 1SBN010160R1010 | CA4-10K Auxiliary Contact Block                    | CA4-10K   | 1 | piece |
| 1SBN010146R1122 | CA4-22MK Auxiliary Contact Block                   | CA4-22MK  | 1 | piece |
| 1SBN010160T1001 | CA4-01K-T Auxiliary Contact Block                  | CA4-01K-T | 1 | piece |
| 1SBN010160T1010 | CA4-10K-T Auxiliary Contact Block                  | CA4-10K-T | 1 | piece |
| 1SBN010146R1031 | CA4-31EK Auxiliary Contact Block                   | CA4-31EK  | 1 | piece |
| 1SBN010146R1131 | CA4-31MK Auxiliary Contact Block                   | CA4-31MK  | 1 | piece |
| 1SBN010146R1040 | CA4-40EK Auxiliary Contact Block                   | CA4-40EK  | 1 | piece |

## Categories

Low Voltage Products and Systems → Control Products → Contactors → Block Contactors → AF Contactors → AF09



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