# Easy Series Automation and Control Essentials Catalog 2025

Everything you need for your fit-for-purpose control panels

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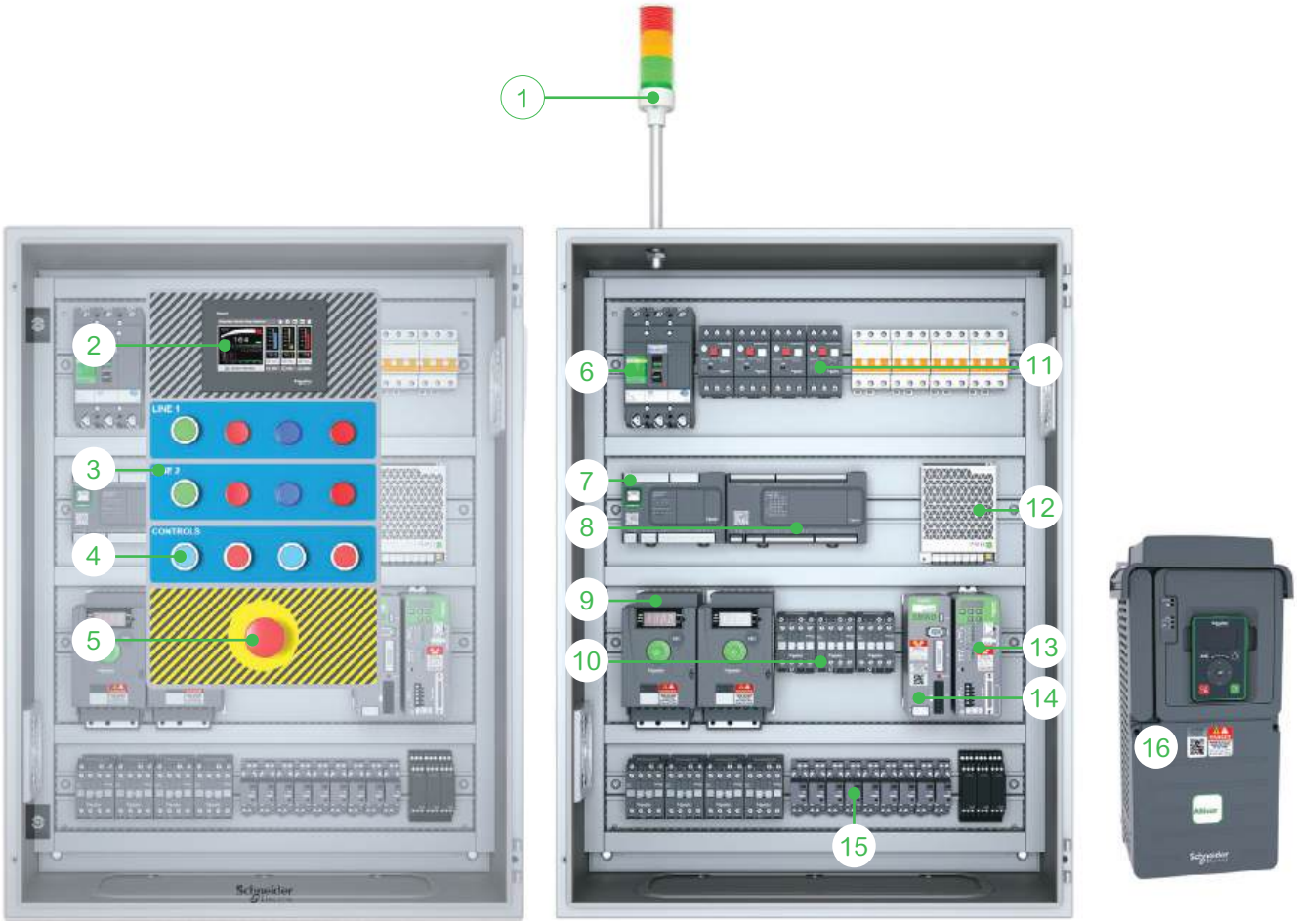
Life Is On Schneider Electric

# The Essentials for your control panels

Within this catalog you'll find all the components you need to deliver high core performance focused industrial control panels and machines.

The catalog will help you build your fit-for-purpose equipment faster and boost the efficiency of your industrial automation business.

# New 2025 product highlights




1 Easy Harmony XVG Tower Light

2 Easy Harmony ET6 Touch screen panel

3 Harmony Customizable Legend Panel

4 Easy Harmony XA2 Pushbuttons

5 Easy Harmony XA2 Emergency Switching off Pushbuttons

6 EasyPact CVS Protection of Distribution System

7 Easy Modicon M200 Logic Controller

8 Easy Modicon M100 Logic Controller

9 Easy Altivar ATV 310 Variable Speed Drives

10 Easy TeSys Contactor

11 Easy TeSys Motor Protection Circuit Breaker

12 Easy Modicon ABL2 Power Supply

13 Easy Lexium 26 Servo

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15 Easy Harmony RXM Electromechanical Relays

16 Easy Altivar ATV 610 Variable Speed Drives

## Make your everyday work smoother and easier

As a machine builder or panel builder, you need a reliable source of products to deliver high core performance focused equipment and services on time.

When working with Schneider, you've go that covered.

See for yourself!

## Count on a reliable partner for your business

With Schneider Electric, a world leader in automation and control, you get reliable, robust, and affordable products for you and your customers.

Our global network of local distributors ensures high product availability and quick delivery times. So you can easily meet your deadlines.

## When just enough is just right!

Save time on component selection with this catalog of automation and control essentials. Use our handy online selectors and configurators to easily find the best solution for your specific application and all the technical information you need.

Our tools help machine builders and panel builders improve the efficiency of their everyday work and build fit-for-purpose equipment with high core performance quicker.

## Take advantage of learning opportunities

Gain access to our diverse learning resources, providing practical knowledge and tips, and open new opportunities for your business.

Explore the manuals, tutorials, “how to” videos, and online courses to broaden your skills and make your daily work faster and simpler.

# Get all the products you need from a distributor close to you

# General contents


# 01. Easy Harmony control and signaling

# Easy Harmony XB2

## Ø 22 mm modular metal push buttons, selector switches, emergency stops, pilot lights, joysticks and buzzers.



- Robustness
- Full metal collar and bezel for shock and impact endurance
- Anti-loosening screws for secure fix and grounding contact to panel
- Screw mounted contacts
- IP65, IP66
- Durability: 3M (mechanical), 1M (electrical)

The Easy Harmony XB2 series of Ø 22mm modular metal control units are robust, reliable, flexible and simple to install. Just enough solution for most industrial control and signaling applications, with the added strength.

## Adapted to your applications, segments and operating environments

Material working | Packaging | Pumping | Consumer packaged goods | Water & waste water | Material handling

*XB2BA42C*

*XB2BL31C*

*XB2BA3351C*

*XB2BP21C*

### Spring return pushbuttons, unmarked

| Type of push | Contact NO | Contact NC | Color of push | Reference for black bezel | |
|---|---|---|---|---|---|
| Complete units - Screw clamp terminal connections | | | | | |
| Flush | 1 | – | White | **XB2BA11C** | (ZB2BZ101C + ZB2BA1C) |
| | 1 | – | Black | **XB2BA21C** | (ZB2BZ101C + ZB2BA2C) |
| | 1 | – | Green | **XB2BA31C** | (ZB2BZ101C + ZB2BA3C) |
| | 1 | – | Yellow | **XB2BA51C** | (ZB2BZ101C + ZB2BA5C) |
| | 1 | – | Blue | **XB2BA61C** | (ZB2BZ101C + ZB2BA6C) |
| | – | 1 | Red | **XB2BA42C** | (ZB2BZ102C + ZB2BA4C) |
| Projecting push | 1 | – | Green | **XB2BL31C** | (ZB2BZ101C + ZB2BL3C) |

### Spring return pushbuttons, marked

| | | | | | |
|---|---|---|---|---|---|
| Flush | 1 | – | Green | **XB2BA3311C** | (ZB2BZ101C + ZB2BA331C) |
| | 1 | – | Black | **XB2BA3351C** | (ZB2BZ101C + ZB2BA335C) |
| | 1 | – | White | **XB2BA3341C** | (ZB2BZ101C + ZB2BA334C) |
| | – | 1 | Red | **XB2BA4322C** | (ZB2BZ102C + ZB2BA432C) |

### Booted pushbuttons

| Type of push | Contact NO | Contact NC | Color of push | Reference for black bezel | |
|---|---|---|---|---|---|
| Complete units - Screw clamp terminal connections | | | | | |
| Spring return | 1 | – | Black | **XB2BP21C** | (ZB2BZ101C+ZB2BP2C) |
| | 1 | – | Green | **XB2BP31C** | (ZB2BZ101C+ZB2BP3C) |
| | – | 1 | Red | **XB2BP42C** | (ZB2BZ102C+ZB2BP4C) |

1

XB2BC51C

## Mushroom head pushbuttons

| Type of push | Contact NO | Contact NC | Color of push | Diameter Ø (mm)/in. | Reference for black bezel | |
|---|---|---|---|---|---|---|
| Complete units - Screw clamp terminal connections | | | | | | |
| Spring return | 1 | – | Black | 40/*1.575* | **XB2BC21C** | (ZB2BZ101C+ZB2BC2C) |
| | 1 | – | Green | 40/*1.575* | **XB2BC31C** | (ZB2BZ101C+ZB2BC3C) |
| | 1 | – | Yellow | 40/1.575 | **XB2BC51C** | (ZB2BZ101C+ZB2BC5C) |
| | – | 1 | Red | 40/*1.575* | **XB2BC42C** | (ZB2BZ102C+ZB2BC4C) |
| | 1 | – | Black | 60/*2.362* | **XB2BR21C** | (ZB2BZ101C+ZB2BR2C) |

XB2BT42C

## Emergency switching off pushbuttons

| Type of push | Contact NO | Contact NC | Color of push | Diameter Ø (mm)/in. | Reference for black bezel | |
|---|---|---|---|---|---|---|
| Complete units - Screw clamp terminal connections | | | | | | |
| Push-pull | – | 1 | Red | 40/*1.575* | **XB2BT42C** | (ZB2BZ102C+ZB2BT4C) |
| Turn to release | – | 1 | Red | 30/*1.181* | **XB2BS442C** | (ZB2BZ102C+ZB2BS44C) |
| | | | | *40*/1.575 | **XB2BS542C** | (ZB2BZ102C+ZB2BS54C) |
| | | | | 60/*2.362* | **XB2BS642C** | (ZB2BZ102C+ZB2BS64C) |

XB2BS8442C

## Emergency stop pushbuttons

| Type of push | Contact NO | Contact NC | Color of push | Diameter Ø (mm)/in. | Reference for black bezel | |
|---|---|---|---|---|---|---|
| Complete units - Screw clamp terminal connections | | | | | | |
| Push-pull | – | 1 | Red | 40/*1.575* | **XB2BT842C** | (ZB2BZ102C+ZB2BT84C) |
| Turn to release | – | 1 | Red | | **XB2BS8442C** | (ZB2BZ102C+ZB2BS844C) |

XB2BD21C

## Selector switches, with standard handle or with long handle

| Type of handle | Contact NO | Contact NC | Positions Number | Positions Type | Reference for black bezel | |
|---|---|---|---|---|---|---|
| Standard handle, black | 1 | – | 2 - stay put |  | **XB2BD21C** | (ZB2BZ101C + ZB2BD2C) |
| | 1 | 1 | | | **XB2BD25C** | (ZB2BZ105C + ZB2BD2C) |
| | 1 | – | 2- spring return |  | **XB2BD41C** | (ZB2BZ101C + ZB2BD4C) |
| | 1 | 1 | | | **XB2BD45C** | (ZB2BZ105C + ZB2BD4C) |
| | 2 | – | 3-stay put |  | **XB2BD33C** | (ZB2BZ103C + ZB2BD3C) |
| | 2 | – | 3- spring return from 2 sides |  | **XB2BD53C** | (ZB2BZ103C + ZB2BD5C) |
| | 2 | – | 3- spring return from 1 side |  | **XB2BD73C** | (ZB2BZ103C + ZB2BD7C) |
| Long handle | 1 | – | 2 - stay put |  | **XB2BJ21C** | (ZB2BZ101C + ZB2BJ2C) |
| | 1 | 1 | | | **XB2BJ25C** | (ZB2BZ105C + ZB2BJ2C) |
| | 2 | – | 3 - stay put |  | **XB2BJ33C** | (ZB2BZ103C + ZB2BJ3C) |
| | 2 | – | 3- spring return from 2 sides |  | **XB2BJ53C** | (ZB2BZ103C + ZB2BJ5C) |

XB2BJ21C

## Key selector switches

| Type of push | Contact | | Positions | | Reference for black bezel |
|---|---|---|---|---|---|
| | NO | NC | Number | Type | |
| Complete units - Screw clamp terminal connections | | | | | |
| Key | 1 | – | 2-stay put, 1 side pull out | | **XB2BG21C** (ZB2BZ101C + ZB2BG2C) |
| | 1 | 1 | | | **XB2BG25C** (ZB2BZ105C + ZB2BG2C) |
| | 1 | – | 2-stay put, 2 side pull out | | **XB2BG41C** (ZB2BZ101C + ZB2BG4C) |
| | 1 | 1 | | | **XB2BG45C** (ZB2BZ105C + ZB2BG4C) |
| | 1 | – | 2-spring return,1 side pull out | | **XB2BG61C** (ZB2BZ101C + ZB2BG6C) |
| | 1 | 1 | | | **XB2BG65C** (ZB2BZ105C + ZB2BG6C) |
| | 2 | – | 3- stay put, middle pull out | | **XB2BG33C** (ZB2BZ103C + ZB2BG3C) |
| | 2 | – | 3- stay put, 2 sides pull out | | **XB2BG53C** (ZB2BZ103C + ZB2BG5C) |
| | 2 | – | 3- stay put, 3 sides pull out | | **XB2BG03C** (ZB2BZ103C + ZB2BG0C) |

*XB2BG21C*

## Illuminated pushbuttons with integral LED

| Type of push | Contact | | Color of push | Supply voltage V | Reference for black bezel |
|---|---|---|---|---|---|
| | NO | NC | | | |
| Complete units - Screw clamp terminal connections | | | | | |
| Flush push | 1 | – | White | 24 ⎓ | **XB2BW31B1C** (ZB2BWB11C + ZB2BW31C) |
| | | | Green | | **XB2BW33B1C** (ZB2BWB31C + ZB2BW33C) |
| | | | Red | | **XB2BW34B1C** (ZB2BWB41C + ZB2BW34C) |
| | | | Orange | | **XB2BW35B1C** (ZB2BWB51C + ZB2BW35C) |
| | | | Blue | | **XB2BW36B1C** (ZB2BWB61C + ZB2BW36C) |
| | 1 | – | White | 220-230 ∿ | **XB2BW31M1C** (ZB2BWM11C + ZB2BW31C) |
| | | | Green | | **XB2BW33M1C** (ZB2BWM31C + ZB2BW33C) |
| | | | Red | | **XB2BW34M1C** (ZB2BWM41C + ZB2BW34C) |
| | | | Orange | | **XB2BW35M1C** (ZB2BWM51C + ZB2BW35C) |
| | | | Blue | | **XB2BW36M1C** (ZB2BWM61C + ZB2BW36C) |

*XB2BW31B1C*

## Joystick controllers

| Type of push | Contact | | Description | Reference for black bezel |
|---|---|---|---|---|
| | NO | NC | | |
| Complete units - Screw clamp terminal connections | | | | |
| Spring return | 1 | – | 2-direction | **XD2PA22CR** |
| | 1 | – | 4-direction | **XD2PA24CR** |
| Spring return witrhout | – | 1 | 2-direction | **XD2PA12CR** |
| | – | 1 | 4-direction | **XD2PA14CR** |

*XD2PA12CR*

## Annunciators

| Type of push | Supply voltage V | Color of push | Reference for black bezel |
|---|---|---|---|
| Complete units - Screw clamp terminal connections | | | |
| Non-illuminated 90dB | 24 ⎓ - 50/60 Hz | Black | **XB2BSBC** |
| | 220…230 ∿ - 50/60 Hz | | **XB2BSMC** |
| Illuminated 90dB | 24 V ⎓ - 50/60 Hz | Red | **XB2BSB4LC** |
| | 220…230 V ∿ - 50/60 Hz | | **XB2BSM4LC** |

*XB2BSB4LC*

1

ZB2BA5C

## Pushbuttons with flush push, unmarked

| Type of push | Color of push | Reference for black bezel |
|---|---|---|
| Heads only | | |
| Spring return | White | **ZB2BA1C** |
| | Black | **ZB2BA2C** |
| | Green | **ZB2BA3C** |
| | Red | **ZB2BA4C** |
| | Yellow | **ZB2BA5C** |
| | Blue | **ZB2BA6C** |

ZB2BA334C

## Pushbuttons with flush push, marked

| | | |
|---|---|---|
| Spring return | Green | **ZB2BA331C** |
| | Black | **ZB2BA335C** |
| | White | **ZB2BA334C** |
| | Red | **ZB2BA432C** |

ZB2BL3C

## Pushbuttons with projecting push, unmarked

| Type of push | Color of push | Reference for black bezel |
|---|---|---|
| Heads only | | |
| Spring return | Green | **ZB2BL3C** |
| | Red | **ZB2BL4C** |

## Mushroom pushbutton heads

| Type of push | Color of push | Diameter Ø (mm)/*in.* | Reference for black bezel |
|---|---|---|---|
| Heads only | | | |
| Spring return | Black | 40/*1.575* | **ZB2BC2C** |
| | Green | | **ZB2BC3C** |
| | Red | | **ZB2BC4C** |
| | Yellow | | **ZB2BC5C** |
| | Black | 60/*2.362* | **ZB2BR2C** |

ZB2BC5C

## Emergency switching off heads

| Type of push | Color of push | Push Ø (mm)/*in.* | Reference for black bezel |
|---|---|---|---|
| Heads only | | | |
| Push-pull | Red | 40/*1.575* | **ZB2BT4C** |
| Turn to release | Red | 30/*1.181* | **ZB2BS44C** |
| | | 40/*1.575* | **ZB2BS54C** |

ZB2BT4C

ZB2BS844C

## Emergency stop pushbuttons *(1)*

| Type of push | Color of push | Diameter Ø (mm)/*in.* | Reference for black bezel |
|---|---|---|---|
| Heads only | | | |
| Push-pull | Red | 40/*1.575* | **ZB2BT84C** |
| Turn to release | Red | | **ZB2BS844C** |

ZB2BW35C

## Illuminated pushbutton heads with spring return

| Type of push | Color of push | Reference for black bezel |
|---|---|---|
| Heads only | | |
| Flush | White | **ZB2BW31C** |
| | Green | **ZB2BW33C** |
| | Red | **ZB2BW34C** |
| | Orange | **ZB2BW35C** |
| | Blue | **ZB2BW36C** |

ZB2BG4C

## Selector switch heads

| Type of handle | Positions | | Reference for black bezel |
|---|---|---|---|
| | Number | Type | |
| Standard handle | 2 - stay put |  | **ZB2BD2C** |
| | 3 - stay put |  | **ZB2BD3C** |
| | 3 - spring return from 2 sides |  | **ZB2BD5C** |
| Long handle | 2 - stay put |  | **ZB2BJ2C** |
| | 3 - stay put |  | **ZB2BJ3C** |
| | 3 - spring return from 2 sides |  | **ZB2BJ5C** |
| Key | 2 - stay put, 1 side pull out |  | **ZB2BG2C** |
| | 2 - stay put, 2 side pull out |  | **ZB2BG4C** |
| | 3 - stay put, 3 sides pull out |  | **ZB2BG0C** |

*1) Emergency Stop push buttons should have a maximum of 4 nos. contact blocks, installed in 2 rows only.*

1

*ZB2BWM31C*

## Complete light bodies (fixing collar + light block)

| Light source | Contact NO | Contact NC | Supply voltage V | Color of light source | Reference |
|---|---|---|---|---|---|
| Direct Supply | | | | | |
| with BA9S 24 V ≂ bulb | 1 | – | 24 ≂ | white | **ZB2BWB11C** |
| | 1 | – | | green | **ZB2BWB31C** |
| | – | 1 | | green | **ZB2BWB32C** |
| | 1 | – | | red | **ZB2BWB41C** |
| | – | 1 | | red | **ZB2BWB42C** |
| | 1 | – | | orange | **ZB2BWB51C** |
| | – | 1 | | orange | **ZB2BWB52C** |
| | 1 | – | | blue | **ZB2BWB61C** |
| with BA9S 24 V ≂ bulb | 1 | – | 220-230 ∿ | white | **ZB2BWM11C** |
| | 1 | – | | green | **ZB2BWM31C** |
| | – | 1 | | green | **ZB2BWM32C** |
| | 1 | – | | red | **ZB2BWM41C** |
| | – | 1 | | red | **ZB2BWM42C** |
| | 1 | – | | orange | **ZB2BWM51C** |
| | – | 1 | | orange | **ZB2BWM52C** |
| | 1 | – | | blue | **ZB2BWM61C** |

*ZB2BZ104C*

## Contact funtions

| Description | Contact NO | Contact NC | Reference |
|---|---|---|---|
| Screw clamp terminal connections | | | |
| Single contact block | 1 | – | **ZB2BE101C** |
| | – | 1 | **ZB2BE102C** |
| Single with body/fixing collar | 1 | – | **ZB2BZ101C** |
| | – | 1 | **ZB2BZ102C** |
| | 2 | – | **ZB2BZ103C** |
| | – | 2 | **ZB2BZ104C** |
| | 1 | 1 | **ZB2BZ105C** |


*ZB2BY9330C*

*ZB2BZ1605C*

*XALB01C*

*XALB03C*

## Circular yellow legends for mushroom head pushbuttons, marked

| Mark | Color of push | Reference |
|---|---|---|
| Used for “Emergency stop” function | | |
| “EMERGENCY STOP” | Yellow | **ZB2BY9330C** |

## Yellow guard

| Description | Exclusive use with the following Ø 40mm/1.75 in. | Color of push | Reference |
|---|---|---|---|
| Heads only | | | |
| For Emergency stop and off function | Emergency switching | Yellow | **ZB2BZ1605C** |
| Clear boot for dust | Emergency switching | Clear | **ZB2BPAC** |

## Empty control stations

| Description | Characteristics | Dimension w x h x d<br>*mm/in.* | Number of cut-outs | Reference |
|---|---|---|---|---|
| Complete units - Screw clamp terminal connections | | | | |
| Light gray "RAL 7035" cover<br>Dark gray "RAL 7016" base | IP65 | 68 x 86 x 51/<br>*2.68 x 3.39 x 2* | 1 | **XALB01C** |
| | | 68 x 104 x 51/<br>*2.68 x 4.1 x 2* | 2 | **XALB02C** |
| | | 68 x 86 x 51/<br>*2.68 x 3.39 x 2* | 3 | **XALB03C** |
| Yellow "RAL 1021" cover<br>Dark gray "RAL 7016" base | IP65 | 68 x 86 x 51/<br>*2.68 x 3.39 x 2* | 1 | **XALB01YC** |

# 02. Easy Harmony Relays

# Easy Harmony RXG

## Interface Electromechanical Relays

- Conformity with IEC, UL and EAC standards, as well as CE marking
- IP40 protection rating
- Operating temperature from - 40°C to 70°C
- 10 mA at 5V DC minimum switching load
- High electrical durability of 100,000 cycles



The RXG plug-in relays are a series of industrial interface relays available with 1 CO (10A), 2 CO (5A) contacts. It features faston pin terminal for quick and secure mounting, and an optional green LED for relay "on" status indication. With a 16 mm socket option, it helps to reduce the size of enclosures, you can mount nearly everywhere!

## Adapted to your applications, segments and operating environments

Data Center | OEM Machines | PLC Interface | Automation Control Panels | Textile | Medical Equipment

*RXG18P7*

*RXG26BD*

*RGZE05E*

**Interface relays for customer assembly**

| Type | Control Circuit Voltage | Sold in lots of | Number and type of contacts - Thermal current (Ith) | | |
|---|---|---|---|---|---|
| | | | 1 CO - 10 A | 2 CO - 5 A | Weight |
| | | | Unit Reference | Unit Reference | kg/*lb* |
| Basic cover relays with LED | 24 VDC | 10 | **RXG16BD** | **RXG26BD** | 0.019/*0.042* |
| | 230 VAC | 10 | **RXG16P7** | **RXG26P7** | 0.019/*0.042* |
| Basic cover relays without LED | 24 VDC | 10 | **RXG18BD** | **RXG28BD** | 0.019/*0.042* |
| | 230 VAC | 10 | **RXG18P7** | **RXG28P7** | 0.019/*0.042* |

**Sockets for interface relays**

Sockets with mixed contact terminals arrangement, screw clamp connection, and built-in clamp

| Description | Thermal current (Ith) | Sold in lots of | Relay type | Unit Reference | Weight kg/*lb* |
|---|---|---|---|---|---|
| 1 CO socket with 1 pole | 10 A | 10 | RXG1●●● | **RGZE05E** | 0.024/*0.053* |
| 2 CO socket with 2 poles | 5 A | 10 | RXG2●●● | **RGZE08E** | 0.026/*0.057* |

# Easy Harmony RXMLB

## Miniature Electromechanical Relays

- Conformity with IEC and UL standards, as well as CE marking
- IP40 protection rating
- Operating temperature from -40°C to 55°C
- 5mA at 5VDC minimum switching load
- High electrical durability of 200,000 cycles

The RXM●LB relays are a series of industrial plug-in relays designed for both simple and complex automation systems and available with 2 CO (5A), 4 CO (3A) contacts. It features a mechanical indicator indicating the relay contact status and optional green LED for relay "on" status.

## Adapted to your applications, segments and operating environments

Packaging | HVAC | Industrial Machines | Lighting Controls | Motor Controls | Building

*RXM2LB2BD*

*RXM2LB1BD*

*RXZE1M2C*

*RXZ410*

**Easy Harmony RXM miniature plug-in relays (sold in lots of 10)**

| Type | Control Circuit Voltage | Number and type of contacts - Thermal current (Ith) | | | |
|---|---|---|---|---|---|
| | | 2 CO - 5 A | Weight | 4 CO - 3 A | Weight |
| | | Unit Reference | kg/*lb* | Unit Reference | kg/*lb* |
| With LED - Miniature relays without lockable test-button | 12 VDC | **RXM2LB2JD** | 0.033/*0.073* | **RXM4LB2JD** | 0.035/*0.077* |
| | 24 VDC | **RXM2LB2BD** | 0.032/*0.071* | **RXM4LB2BD** | 0.034/*0.075* |
| | 36 VDC | – | 0.034/*0.075* | **RXM4LB2CD** | 0.036/*0.079* |
| | 48 VDC | **RXM2LB2ED** | 0.033/*0.073* | **RXM4LB2ED** | 0.035/*0.077* |
| | 110 VDC | **RXM2LB2FD** | 0.031/*0.068* | **RXM4LB2FD** | 0.033/*0.073* |
| | 24 VAC | **RXM2LB2B7** | 0.033/*0.073* | **RXM4LB2B7** | 0.035/*0.077* |
| | 120 VAC | **RXM2LB2F7** | 0.032/*0.071* | **RXM4LB2F7** | 0.033/*0.073* |
| | 230 VAC | **RXM2LB2P7** | 0.031/*0.068* | **RXM4LB2P7** | 0.032/*0.071* |
| Without LED - Miniature relays without lockable test-button | 12 VDC | **RXM2LB1JD** | 0.032/*0.071* | **RXM4LB1JD** | 0.034/*0.075* |
| | 24 VDC | **RXM2LB1BD** | 0.032/*0.071* | **RXM4LB1BD** | 0.033/*0.073* |
| | 24 VAC | **RXM2LB1B7** | 0.033/*0.073* | **RXM4LB1B7** | 0.034/*0.075* |
| | 120 VAC | **RXM2LB1F7** | 0.031/*0.068* | – | 0.033/*0.073* |
| | 230 VAC | **RXM2LB1P7** | 0.030/*0.066* | **RXM4LB1P7** | 0.032/*0.071* |

**Sockets with Screw clamp connection**

| Contact terminal Arrangement | Thermal current (Ith) | Sold in lots of | Relay type | Unit Reference | Weight kg/*lb* |
|---|---|---|---|---|---|
| Mixed | 7 A | 10 | RXM2 | **RXZE1M2C** | 0.034/*0.075* |
| | | | RXM2 | **RXZE1M4C** | 0.053/*0.117* |
| | | | RXM4 | | |

**Accessories**

| Description | Sold in lots of | For use with | Unit reference | Weight kg/*lb* |
|---|---|---|---|---|
| Metal maintaining clamp | 20 | RXZE1M●C | **RXZ410** | 0.001/*0.002* |
| | 10 | RXZE1M2C | **RXZ420** | 0.001/*0.002* |

# Easy Harmony Electronic Relays

## Timer & Control Relays

- Conformity to cULus, CE, CCC & UKCA
- Cost-effective - essential choice with optimised features
- Easy selection - 6 refs to meet most of the application needs
- Space savings - Compact size with 17.5mm width



The Easy Harmony Electronic Relays range of timers and control relays provides the cost effective choice to meet customers requirements. Easy Harmony RE10 Timer relays that enable and simplify the hard-wired timing control of your application. Easy Harmony RM10 Control relays that provide the basic monitoring & control of 3 phase power feeding to your application.

## Adapted to your applications, segments and operating environments

Pumping | Fan | Motor | Generator | Material working | Material handling | Mining Mineral & Metals

*RM10TG00N*

*RM10TA00N*

*RM10TE00N*

*RE10RAMUN*

*RE10RCMUN*

*RE10RQM7N*

**Control Relay**

| Type | Supply Voltage | Function | Number and type of contacts | | |
|---|---|---|---|---|---|
| | | | 1 CO - 5 A | | Weight |
| | | | Unit Reference | Timing range | kg/*lb* |
| 3 phase control relay | 208…480 VAC | Phase sequence<br>Phase loss | **RM10TG00N** | – | 0.075/*0.16* |
| | | Phase sequence<br>Phase loss<br>Phase Asymmetry | **RM10TA00N** | 0…15s | 0.075/*0.16* |
| | | Phase sequence<br>Phase loss<br>Phase Asymmetry<br>Over & Under Voltage | **RM10TE00N** | 0…100s | 0.075/*0.16* |

**Timer relay**

| Type | Supply Voltage | Function | Number and type of contacts | | |
|---|---|---|---|---|---|
| | | | 1 CO - 5 A | | Weight |
| | | | Unit Reference | Timing range | kg/*lb* |
| Timer | 24VAC/DC & 240 VAC | On delay | **RE10RAMUN** | 0…30hrs | 0.075/*0.16* |
| | 24VAC/DC & 240 VAC | Off delay | **RE10RCMUN** | 0…30hrs | 0.075/*0.16* |
| | 240 VAC | Star-delta | **RE10RQM7N** | 0…120s | 0.075/*0.16* |

# 03. Easy Modicon regulated power supplies

# Easy Modicon ABL2K power supplies and Accessories

## Single phase power supplies 100 V to 240 V from 35 to 350 W

- Conformity with CE, EAC, KC and RCM standards
- Wide power range (11 models from 35 to 350 W)
- Equipped with an input voltage (100-240 V AC) smart switch offering
- Increased performance and durability
- Easy maintenance thus reducing downtime
- They can operate within a wide temperature range



The Easy Modicon ABL2 electronic switch mode power supply offer is designed to provide the DC voltage necessary for electrical equipment operating in a low voltage automation and control system (PLC, HMI, sensors, etc.).

## **OEMs** can integrate these power supplies in simple machines used in the following

Material handling | Textile machine | Packaging | Machine tools | Food & Beverage

## **Panel builders** can integrate them in control panels installed in the following

Construction | Lift | Automobile industry | Chemical industry | Municipal buildings | Infrastructure

*BL2REM24015KQ*

*ABL2REM24085K*

**ABL2 regulated switch mode 24 V DC power supplies**

| Model | Output voltage | Nominal power | Output current | Voltage switching | Cooling design | Overload hiccup protection | Reference | Weight kg/*lb* |
|---|---|---|---|---|---|---|---|---|
| Input voltage : 100...240 V AC | | | | | | | | |
| 35 W | 24 V DC | 36 W | 1.5 A | Automatic | Natural convection | 110-160% | **ABL2REM24015K** | 0.230/*0.507* |
| | | | | | | 170-190% | **ABL2REM24015KQ** | 0.230/*0.507* |
| 50 W | 24 V DC | 53 W | 2.2 A | Automatic | Natural convection | 110-160% | **ABL2REM24020K** | 0.250/*0.551* |
| | | | | | | 170-190% | **ABL2REM24020KQ** | 0.250/*0.551* |
| 100 W | 24 V DC | 108 W | 4.5 A | Automatic | Natural convection | 110-160% | **ABL2REM24045K** | 0.350/*0.772* |
| | | | | | | 170-190% | **ABL2REM24045KQ** | 0.350/*0.772* |
| Input voltage : 100...120 V AC - 200...240 V AC | | | | | | | | |
| 150 W | 24 V DC | 156 W | 6.5 A | Manual | Natural convection | 110-160% | **ABL2REM24065K** | 0.440/*0.970* |
| | | | | | | 170-190% | **ABL2REM24065KQ** | 0.440/*0.970* |
| 200 W | 24 V DC | 200 W | 8.3 A | Manual | Natural convection | 110-150% | **ABL2REM24085K** | 0.730/*1.609* |
| 250 W | 24 V DC | 252 W | 10.5 A | Manual | Forced air cooling by built-in DC fan | 110-150% | **ABL2REM24100K** | 0.750/*1.653* |
| 350 W | 24 V DC | 351 W | 14.6 A | Manual | Forced air cooling by built-in DC fan | 110-150% | **ABL2REM24150K** | 0.790/*1.742* |

*ABL2K01*

*ABL2K02*

*ABL2K03B*



## Options for ABL2 power supplies

| Type of mounting accessory | For power supplies | Sold in lots of | Unit reference | Weight kg/*lb* |
|---|---|---|---|---|
| 4-corner bracket | ABL2REM24085K<br>ABL2REM24100K<br>ABL2REM2 4150K | 40 | **ABL2K01** | 0.003/*0.007* |
| Clip-on mounting plate | All models | 5 *(1)* | **ABL2K02** | 0.028/*0.062* |
| L-type accessories | ABL2REM24015K<br>ABL2REM24015KQ<br>ABL2REM24020K<br>ABL2REM24020KQ<br>ABL2REM24045K<br>ABL2REM24045KQ<br>ABL2REM24065K<br>ABL2REM24065KQ | 1 | **ABL2K03A** | 0.110/*0.240* |
| | ABL2REM24085K<br>ABL2REM24100K<br>ABL2REM24150K | 1 | **ABL2K03B** | 0.150/*0.331* |

*(1) ABL2K02 is a pack of 5 accessories usable on 35 mm (1.37 in.) 5 rails. Please note that only 1 accessory is necessary for mounting a 35 to 150 W model but 2 accessories are needed for the other three models (200, 250, and 350 W).*

*ABLS1A12060E*

*ABLS1A24100E*

*ABLS1A48100E*

## ABLS regulated switch mode power supplies

| Output voltage | Nominal power *(2)* | Nominal current | Voltage switching Cooling design | Overload hiccup protection | Reference | Weight kg/*lb* |
|---|---|---|---|---|---|---|
| Input voltage : 100...240 V AC 50/60 Hz (compatible with 140…340 V DC) | | | | | | |
| 12 VDC | 75.6 W | 6.3 A | Constant current mode, automatic recovery after overload is removed | With | **ABLS1A12060E** | 0.396/*0.873* |
| | 120 W | 10 A | Constant current mode, automatic recovery after overload is removed | With | **ABLS1A12100E** | 0.451/*0.994* |
| 24 VDC | 76.8 W | 3.2 A | Constant current mode, automatic recovery after overload is removed | With | **ABLS1A24030E** | 0.396/*0.873* |
| | 120 W | 5 A | Constant current mode, automatic recovery after overload is removed | With | **ABLS1A24050E** | 0.451/*0.994* |
| | 240 W | 10 A | Constant current mode, automatic recovery after overload is removed | With | **ABLS1A24100E** | 0.935/*2.061* |
| | 480 W | 20 A | "Constant current mode, shutting down after time delay. Re-power on to recover" | With | **ABLS1A24200E** | 1.320/*2.910* |
| | 960 W | 40 A | Constant current mode, automatic recovery after overload is removed | With | **ABLS1A24400E** | 2.200/*4.85* |
| 48 VDC | 480 W | 10 A | "Constant current mode, shutting down after time delay. Re-power on to recover" | With | **ABLS1A48100E** | 1.320/*2.910* |
| Input voltage : 200...240 VAC | | | | | | |
| 48 VDC | 960 W | 20 A | Constant current mode, automatic recovery after overload is removed | With | **ABLS1A48200E** | 2.200/*4.85* |


# 04. Easy Harmony Human Machine Interface

# Easy Harmony ET6

## Essential touch screen panels for simple machines

- Flexible Options :
  Various sizes and connection models available.
- Enhanced Visualization :
  High resolution, large screens, and memory.
- Robust Reliability :
  Strong cybersecurity and environmental protection features.

Easy Harmony ET6 essential touch-screen panels are entry-level products perfectly tailored to meet the specific requirements of the customer. Easy Harmony ET6 is available in four screen sizes with wide format 7"W, 10"W, 12"W and 15"W. This range is designed with high resolution screen, more colors, and Ethernet capability to enable OEMs to optimize their HMI design and investment . It is powered by Vijeo Designer Basic software for intuitive user experience. It has a 800 MHz ARM Cortex-A8 CPU, 256 MB as system and application memory, 128 KB nonvolatile memory. ET6 supports Ethernet port, COM1 (RS-232C), COM2 (RS-422/485), 1x USB 2.0 Type A, and 1x USB 2.0 Micro-B port. This is intended for industries like Packaging, HVAC, Pump, Electronics, battery, machine tools and material working etc. It conforms to standards like EN (61000-6-4, 61000-6-2, 61131-2), UL 61010-2-201, CSA C22.2 No 61010-2-201 and certifications like UL, CE, KC, EAC, China RoHS, REACH. The degree of protection is IP65F.

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## Adapted to your applications, segments and operating environments

Packaging | HVAC & Pumping | Material working | Battery, 3C & SEMICON | Textile | Solar, Printing, etc

*HMIET6501*

**Easy Harmony ET6 SIO touch screen panels** *(1) (2)*

| Screen size and type | Number of ports | Memory capacity | | Unit Reference | Weight kg/*lb* |
|---|---|---|---|---|---|
| | | For application | For backup | | |
| 7" wide, 800 x 480 pixels, color TFT screen | 1x COM2 (RS-422/485), 1x COM1 (RS-232C), 1x USB micro-B | 256 MB | 128 KB | **HMIET6401** | 0.60/*1.32* |
| 10" wide, 1,024 x 600 pixels, color TFT screen | | | | **HMIET6501** | 0.98/*2.16* |

*HMIET6700*

**Easy Harmony ET6 ETH touch screen panels** *(1) (2)*

| Screen size and type | Number of ports | Memory capacity | | Unit Reference | Weight kg/*lb* |
|---|---|---|---|---|---|
| | | For application | For backup | | |
| 7" wide, 800 x 480 pixels, color TFT screen | 1x COM1 (RS-232C), 1x COM2 (RS-422/485) 1x USB micro-B, 1x USB Type A, 1x 10/100 Base-Tx | 256 MB | 128 KB | **HMIET6400** | 0.61/1.34 |
| 10" wide, 1,024 x 600 pixels, color TFT screen | | | | **HMIET6500** | 0.99/2.18 |
| 12" wide, 1,280 x 800 pixels, color TFT screen | | | | **HMIET6600** | 1.62/3.57 |
| 15.6" wide, 1,366 x 768 pixels, color TFT screen | | | | **HMIET6700** | 2.52/5.56 |

*(1) Panels supplied with fixing screws, power supply connector, and instruction sheet. Setup documentation for Easy Harmony ET6 panels is included in electronic format with the Vijeo Designer Basic configuration software.*
*(2) Comprehensive information relating to Easy Harmony ET6 panels is available on our website.*

*To download software, www.se.com/vijeo designer basic*

## Vijeo Designer Basic, programming software for Easy Harmony ET6 panels

| Description | Used for | Compatibility | Number of stations | Unit Reference |
|---|---|---|---|---|
| Vijeo Designer Basic *(1)* | Easy Harmony ET6 models | All Easy Harmony ET6 panels (required V1.2 or above) | 1 | *(2)* |

## Connection accessories

*HMIZG936*

| Designation | Description | Length - m/*ft* | Unit Reference | Weight kg/*lb* |
|---|---|---|---|---|
| USB (Type A) front cable | Extension cable that attaches USB interface to front panel | 1/*3.28* | **XBTZGUSB** | 0.507/*1.118* |
| USB transfer cable | Cable for transferring screen data from a PC (USB Type A) to HMI (USB micro-B) | 1/*3.28* | **HMIZG936** | 0.100/*0.220* |

*(1) Requires software version 1.2. Cable for transferring application from PC to Easy Harmony ET6 panels (HMIZG936) to be ordered separately (see our website www.se.com).*

*(2) To download this software, visit our website www.se.com.*

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*XBTZ9008*

## Cables for connecting Easy Harmony ET6 panels to Schneider Electric PLCs

| Type of automation product | Type of connector (automation product end) | Protocol | Type of Easy Harmony ET6 panels | Physical link (panels port) | Length m/*ft* | Reference | Weight kg/*lb* |
|---|---|---|---|---|---|---|---|
| Modicon M340<br>Modicon M218<br>Modicon M258<br>Modicon M221<br>Modicon M241<br>Modicon M251 | RJ45 | Modbus | All models | RS-485 | 2.5/*8.20* | **XBTZ9008** | – |
| TeSys U/T starters<br>Altivar drives<br>Altistart starters<br>Lexium motion control<br>Preventa XPS MC | RJ45 | Modbus | All models | RS-485 | 2.5/*8.20* | **XBTZ9008** | – |

## Connecting Easy Harmony ET6 panels via Modbus serial link

| Type of bus/ network | Tap-off units | Connector (tap-off unit end) | Type of Easy Harmony ET6 panels | Length m/*ft* | Reference | Weight kg/*lb* |
|---|---|---|---|---|---|---|
| Modbus serial link | 8-port Modbus splitter box **LU9GC3**<br>2-port tap junction **TWDXCAISO**<br>**TWDXCAT3RJ** | RJ45 | All models | 2.5/*8.20* | **XBTZ9008** | – |

# 05. Easy Modicon Logic Controllers

# Easy Modicon M100 and M200

## Logic controllers - Up to 168 I/O, 2-axis motion control

- Reduces machine costs by emphasizing core functions like Modbus, USB programming, and basic position control
- Simplifies mounting, wiring, programming, and debugging with Machine Expert Basic software
- Transistor outputs are monitored to help protect against short circuits
- DC power supply monitored to help protect against reverse polarity
- IP20 protection level

Logic controllers are designed for simple machines, making them ideal for installation in wall-mounted and floor-standing control system enclosures. These controllers have an embedded Ethernet port, providing excellent connection capacity. They also offer customization options using I/O or communication cartridges. The Modicon TM3 expansion module enhances the digital and analog I/O capacity of the Easy Modicon M100/200 logic controller on a larger scale.

## Adapted to your applications, segments and operating environments

Machine control | Textile | Machines tools | Packaging | HVAC & Pumping | Lift | Energies & chemicals



**Easy Modicon M100 logic controllers** *(1)*

| Number of digital I/O | Digital inputs | Digital outputs (relay outputs) | Serial link *(2)* | Supply voltage | Programming software *(3)* | Reference |
|---|---|---|---|---|---|---|
| 16 | ■ 9 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 3 regular inputs<br>■ 2 high speed inputs for HSC | 7 | 1 | 110...220 VAC | EcoStruxure Machine Expert - Basic | **TM100C16RN** |
| 24 | ■ 14 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 8 regular inputs<br>■ 2 high speed inputs for HSC | 10 | | | | **TM100C24RN** |
| 32 | ■ 20 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 14 regular inputs<br>■ 2 high speed inputs for HSC | 12 | | | | **TM100C32RN** |
| 40 | ■ 24 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 18 regular inputs<br>■ 2 high speed inputs for HSC | 16 | | | | **TM100C40RN** |

*TM100C16RN*

*TM100C24RN*

*TM100C32RN*

*TM100C40RN*

*EcoStruxure Machine Expert - Basic 4*

*(1) M100 controllers are supplied with:*
- *removable screw terminal blocks for connecting the I/O*
- *a removable screw terminal block for connecting the power supply*
- *a removable screw terminal block for the serial link*

*(2) Each M100 logic controller has an embedded USB mini-B programming port.*

*(3) PC should be equipped with Windows 7 or 10 (32-bit or 64-bit). To download this programming software, please visit our site www.se.com.*

## Easy Modicon M200 logic controllers *(1)*

| Supply voltage | Number of digital I/O | Digital inputs | Digital outputs | Dimension (W x H x D) | Ethernet (RJ 45) | Serial link *(2)* | Reference |
|---|---|---|---|---|---|---|---|
| 24 VDC | 40 | ■ 24 sink/source<br>■ 24 VDC input voltage | ■ 16 sink outputs<br>■ 14 regular transistor outputs<br>■ 2 fast outputs (PWM/PLS/PTO) | 175 x 70 x 90 | – | 1 | **TM200C40U** |
| | | ■ 4 fast inputs for FC<br>■ 16 regular inputs | | | 1 | | **TM200CE40U** |
| | | ■ 4 high speed inputs for HSC | ■ 16 source outputs<br>■ 14 regular transistor outputs<br>■ 2 fast outputs (PWM/PLS/PTO) | | – | | **TM200C40T** |
| | | | | | 1 | | **TM200CE40T** |

*TM200CE40U*

| Supply voltage | Number of digital I/O | Digital inputs | Digital outputs (relay outputs) | Dimension (W x H x D) | Ethernet (RJ 45) | Serial link *(2)* | Reference |
|---|---|---|---|---|---|---|---|
| 110...220 VAC | 16 | ■ 9 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 1 regular input<br>■ 4 high speed inputs for HSC | 7 | 110 x 70 x 90 | – | 1 | **TM200C16R** |
| | 24 | ■ 14 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 6 regular inputs<br>■ 4 high speed inputs for HSC | 10 | 130 x 70 x 90 | | | **TM200C24R** |
| | | | | | 1 | | **TM200CE24R** |
| | 32 | ■ 20 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 12 regular inputs<br>■ 4 high speed inputs for HSC | 12 | 175 x 70 x 90 | – | | **TM200C32R** |
| 110...220 VAC | 32 | ■ 20 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 12 regular inputs<br>■ 4 high speed inputs for HSC | 12 | 175 x 70 x 90 | 1 | 1 | **TM200CE32R** |
| | 40 | ■ 24 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 16 regular inputs<br>■ 4 high speed inputs for HSC | 16 | | – | | **TM200C40R** |
| | 60 | ■ 36 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 28 regular inputs<br>■ 4 high speed inputs for HSC | 24 | 225 x 70 x 90 | 1 | | **TM200CE40R** |
| | | | | | | | **TM200C60R** |

*TM200C16R*

*TM200CE24R*

*TM200CE32R*

*TM200C60R*

| Supply voltage | Number of digital I/O | Digital inputs | Digital outputs | Dimension (W x H x D) | Ethernet (RJ 45) | Serial link *(2)* | Reference |
|---|---|---|---|---|---|---|---|
| 24 VDC | 16 | ■ 9 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 1 regular input<br>■ 4 high speed inputs for HSC | ■ 7 sink outputs<br>■ 5 regular transistor outputs<br>■ 2 fast outputs (PWM/PLS/PTO) | 110 x 70 x 90 | – | 1 | **TM200C16U** |
| | | | ■ 7 source outputs<br>■ 5 regular transistor outputs<br>■ 2 fast outputs (PWM/PLS/PTO) | | | | **TM200C16T** |

*TM200C16U*

*(1) M200 controllers are supplied with:*
- *removable screw terminal blocks for connecting the I/O*
- *a removable screw terminal block for connecting the power supply*
- *a removable screw terminal block for the serial link*

*(2) Each M200 logic controller has an embedded USB mini-B programming port.*

*TM200CE24U*

*TM200C32U*

## Easy Modicon M200 logic controllers *(1)*

| Supply voltage | Number of digital I/O | Digital inputs | Digital outputs | Dimension (W x H x D) | Ethernet (RJ 45) | Serial link *(2)* | Reference |
|---|---|---|---|---|---|---|---|
| 24 VDC | 24 | ■ 14 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 6 regular inputs<br>■ 4 high speed inputs for HSC | ■ 10 sink outputs<br>■ 8 regular transistor outputs<br>■ 2 fast outputs (PWM/PLS/PTO) | 130 x 70 x 90 | – | 1 | **TM200C24U** |
| | | | | | 1 | | **TM200CE24U** |
| | | | ■ 10 source outputs<br>■ 8 regular transistor outputs<br>■ 2 fast outputs (PWM/PLS/PTO) | | – | | **TM200C24T** |
| | | | | | 1 | | **TM200CE24T** |
| 24 VDC | 32 | ■ 20 sink/source<br>■ 24 VDC input voltage<br>■ 4 fast inputs for FC<br>■ 12 regular inputs<br>■ 4 high speed inputs for HSC | ■ 12 sink outputs<br>■ 10 regular transistor outputs<br>■ 2 fast outputs (PWM/PLS/PTO) | 175 x 70 x 90 | – | 1 | **TM200C32U** |
| | | | ■ 12 source outputs<br>■ 10 regular transistor outputs<br>■ 2 fast outputs (PWM/PLS/PTO) | | – | | **TM200C32T** |

*TMCR2SL1S*

*TMCR2AI2*

*TMCR2AQ2V*

## Cartridges for Easy Modicon M200 logic controllers *(2)*

| Description | Details | Reference |
|---|---|---|
| Communication cartridges | ■ 1 additional RS232C or RS485 serial link on screw terminal block | **TMCR2SL1** |
| | ■ Controllers 16IO/24IO can support 1 additional isolated RS485 serial link on screw terminal block. Controllers 32IO/40IO/60IO can support 2 additional isolated RS485 serial link on screw terminal block | **TMCR2SL1S** |
| Analog I/O cartridges | ■ 2 analog inputs (12-bit resolution) configurable as:<br>- 0…10 V voltage<br>- 0…20 mA/4…20 mA current<br>■ Connection via screw terminal block | **TMCR2AI2** |
| | ■ 2 analog inputs (12-bit resolution) 0…10V/ 0…5V/ 0…20mA / 4…20mA<br>■ 1 analog output (12-bit resolution) 0…10V/ 0…5V/ 0…20mA / 4…20mA<br>■ Connection via screw terminal block | **TMCR2AM3** |
| | ■ 2 temperature inputs (12 or 14-bit resolution depending on input signal) type K, J, R, S, B, E, T, N, C, PT100, PT1000, NI100, NI1000<br>■ Connection via screw terminal block | **TMCR2TI2** |
| Analog I/O cartridges | ■ 2 analog outputs (12-bit resolution) 0…10 V voltage<br>■ Connection via screw terminal block | **TMCR2AQ2V** |
| | ■ 2 analog outputs (12-bit resolution) 4…20 mA current<br>■ Connection via screw terminal block | **TMCR2AQ2C** |

*(1) M200 controllers are supplied with:*
- *removable screw terminal blocks for connecting the I/O*
- *a removable screw terminal block for connecting the power supply*
- *a removable screw terminal block for the serial link*

*(2) One cartridge for controllers with 16 and 24 I/O. Two cartridges maximum for controllers with 32, 40 and 60 I/O, only one of which can be a communication cartridge.*

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*TMARCOVER*

*TMARBAT1*

*TMARTB3*

## Separate parts for Easy Modicon M200 logic controllers

| Description | Reference |
|---|---|
| Catridges cover | **TMARCOVER** |
| RTC battery | **TMARBAT1** |

## Replacements parts for Easy Modicon M200 logic controllers

| Description | Details | Reference |
|---|---|---|
| Set of terminal blocks for connecting the I/O on M200 controllers | 3-way terminal block for power supply connection | **TMARTB3** |
| | 4-way terminal block for serial link connection | **TMARTB4** |

## Expansion modules

| Description | Details | Reference |
|---|---|---|
| Modicon TM3 expansion modules | Easy Modicon M200 logic controllers | *(1)* |

## Product compatibility

| Expansion options | | Reference | Number and type of I/O | M200 logic controllers | | |
|---|---|---|---|---|---|---|
| | | | | TM200C16R | TM200C16U | TM200C16T |
| **Modicon TM3** | **Digital modules** | **TM3DI8** | 8 x 24 V ⎓ sink/source inputs | | | |
| | | **TM3DI16** | 16 x 24 V ⎓ sink/source inputs | | | |
| | | **TM3DI32K** | 32 x 24 V ⎓ sink/source inputs | | | |
| | | **TM3DQ8R** | 8 x 24 V ⎓ /240 V a relay outputs | | | |
| | | **TM3DQ8T** | 8 x 24 V ⎓ source transistor outputs | | | |
| | | **TM3DQ8U** | 8 x 24 V ⎓ sink transistor outputs | | | |
| | | **TM3DQ16R** | 16 x 24 V ⎓ /240 V ∿ relay outputs | | | |
| | | **TM3DQ16T** | 16 x 24 V ⎓ source transistor outputs | | | |
| | | **TM3DQ16U** | 16 x 24 V ⎓ sink transistor outputs | | | |
| | | **TM3DQ32TK** | 32 x 24 V ⎓ source transistor outputs | | | |
| | | **TM3DQ32UK** | 32 x 24 V ⎓ sink transistor outputs | | | |
| | | **TM3DM8R** | 4 x 24 V ⎓ sink/source inputs + 4 x 24 V ⎓ /240 V ∿ relay outputs | | | |
| | | **TM3DM24R** | 16 x 24 V ⎓ sink/source inputs + 8 x 24 V ⎓ /240 V ∿ relay outputs | | | |
| | | **TM3RDM16R** | 8 x 24 V ⎓ sink/source inputs + 8 x 24 V ⎓ /240 V ∿ relay outputs | | | |
| | | **TM3RDM32R** | 16 x 24 V ⎓ sink/source inputs + 16 x 24 V ⎓ /240 V ∿ relay outputs | | | |
| | **Analog modules** | **TM3AI2H** | 2 voltage/current inputs | | | |
| | | **TM3AI4** | 4 voltage/current inputs | | | |
| | | **TM3TI4** | 4 voltage/current or temperature inputs | | | |
| | | **TM3AI8** | 8 voltage/current inputs | | | |
| | | **TM3TI8T** | 8 temperature inputs | | | |
| | | **TM3AQ2** | 2 voltage/current outputs | | | |
| | | **TM3AQ4** | 4 voltage/current outputs | | | |
| | | **TM3TM3** | 2 voltage/current or temperature inputs + 1 voltage/current outputs | | | |
| | | **TM3AM6** | 4 voltage/current inputs + 2 voltage/current outputs | | | |

*Possible to combine, up to 4 modules*

*(1) See our list of product compatibility.*

## Configuration *(1)(2)*

| Configuration limits | Maximum number of transistor outputs | Maximum number of relay outputs | References | |
|---|---|---|---|---|
| Logic controllers | 130 | 71 | **TM200C16R** | |
| | 137 | 64 | **TM200C16T** | |
| | 137 | 64 | **TM200C16U** | |
| | 130 | 74 | **TM200C24R** | **TM200CE24R** |
| | 140 | 64 | **TM200C24T** | **TM200CE24T** |
| | 140 | 64 | **TM200C24U** | **TM200CE24U** |
| | 132 | 76 | **TM200C32R** | **TM200CE32R** |
| | 144 | 64 | **TM200C32T** | |
| | 144 | 64 | **TM200C32U** | |
| | 132 | 80 | **TM200C40R** | **TM200CE40R** |
| | 148 | 64 | **TM200C40T** | **TM200CE40T** |
| | 148 | 64 | **TM200C40U** | **TM200CE40U** |
| | 132 | 88 | **TM200C60R** | |

*(1) Modicon TM3 or TM2 digital I/O modules connect to Modicon M200 logic controllers with a maximum of 4 local I/O modules.*
*(2) The maximum number of Modicon TM3/TM2 expansion modules can be reduced by the number of transistor outputs or relay outputs used (see the table). For more information on TM3/TM2 expansion modules, please visit our website www.se.com.*

5

# 06. Easy Lexium Motion Control

# Servo Drives and Servo Motors

## Lexium 18P/18E servo drives and the associated BCH18 servo motors

- EMC test result is 120% higher than the IEC standard, passed 85°C high-temperature aging test
- High-standard three-proofing paint and thermal adhesive coating process
- LXM18P: 10DI/6DO, 2-way fast input; 16bit analog input; support 8MHz pulse
- LXM18E: 6DI/3DO, 2-way fast input; STO integrated
- Maximum motor speed up to 6000rpm, improve overload capability to 350%, equipped with 23bit optical electricity encoder.
- Adaptive tuning-free function, response bandwidth increased by 39%

The Easy LexiumTM 18 range includes the Lexium 18P/18E servo drives and the associated BCH18 servo motors. Their combinations are specially designed for easy integration and commissioning in your machine and provide the right level of performance for the majority of various motion control machines.

## Adapted to your applications, segments and operating environments

E&E Application | New Energy | Material Handling | Packaging

**Lexium 18P/18E servo drives**

**To order a Lexium 18 servo drive, make up the reference as follows**

| Lexium 18 AC servo drive | | LXM18 | ● | ● | ●●● | ●● | ● |
|---|---|---|---|---|---|---|---|
| **Product Line** | Pulse train input | | **P** | | | | |
| | EtherCAT | | **E** | | | | |
| **Communication interface** | I/O interface with PTI only | | | **C** | | | |
| | I/O interface with PTI, analog and Modbus RTU | | | **D** | | | |
| | EtherCAT with Digital I/O interface | | | **N** | | | |
| | EtherCAT with Digital I/O interface, and STO function | | | **S** | | | |
| **Power** | Size 1 | 0.1 kW/*0.13 hp* | | | **U01** | | |
| | | 0.2 kW/*0.27 hp* | | | **U02** | | |
| | | 0.4 kW/*0.54 hp* | | | **U04** | | |
| | Size 2 | 0.75 kW/*1.01 hp* | | | **U07** | | |
| | | 1 kW/*1.34 hp* | | | **U10** | | |
| | | 1.5 kW/*2.01 hp* | | | **U15** | | |
| | Size 3 | 2.0 kW/*2.68 hp* | | | **U20** | | |
| | | 3.0 kW/*4.02 hp* | | | **U30** | | |
| **Power Supply Voltage** | Single phase, 220Vac | | | | | **M2** | |
| | Three phases, 220Vac | | | | | **M3** | |
| **Special function** | No built-in EMC filter | | | | | | **X** |

VW3M4B01

VW3M4B21

VW3M4B11

VW3M4B12

VW3M4B31

VW3A760●R●●

VW3A773

VW3M3103

VW3A442●

## Accessories for Lexium 18P/18E servo drives

| Designation | Description | For use with | Reference | Weight kg/lb |
|---|---|---|---|---|
| **Connector set for power & motor** | Servo drive power input and output connector kit | LXM18E<br>LXM18P | **VW3M4B01** | 0. 012/*0.026* |
| **Connector kit for encoder** | 6-pin encoder connector kit | LXM18E<br>LXM18P | **VW3M4B21** | 0.008/*0.018* |
| **IO connector** | 50-pin IO connector kit | LXM18P | **VW3M4B11** | 0.035/*0.08* |
| **IO connector** | 20-pin IO connector kit | LXM18E | **VW3M4B12** | 0.017/*0.04* |
| **STO plug with insertion bridge** | STO plug with insertion bridge | LXM18E | **VW3M4B31** | 0.003/*0.01* |

## External braking resistor *(1)*

| Power rating range | Ohmic value (Ω) | Continuous power (W) | Connection | Degree of protection | Reference | Weight kg/*lb* |
|---|---|---|---|---|---|---|
| **100 W, 200 W, 400 W** | 72 | 400 | 3 m cable<br>*(9.84 ft)* | IP65 | **VW3A7607R30** | 1.620/*3.571* |
| **750 W, 1 kW, 1.5 kW** | 27 | 400 | 0.75 m cable<br>*(2.46 ft)* | IP65 | **VW3A7603R07** | 0.930/*2.050* |
| **2 kW, 3 kW** | 16 | 960 | M6 terminal | IP20<br>UL | **VW3A7733** | 4.000/*8.818* |

## Holding brake controller (HBC)

| Designation | Description | Reference | Weight kg/*lb* |
|---|---|---|---|
| **Holding brake controller** | 24 V ⎓ power supply<br>Max. power 0.05 kW/*0.07 hp*<br>IP 20<br>For mounting on 55 mm/*2.17 in* ⊔ rail | **VW3M3103** | *0.600/1.323* |

## Additional EMC input filters for Lexium 18P/18E servo drives *(2)*

| For servo drive<br>*1x EMC filter and a single Lexium 18P/18E servo drive* | Nominal power | Line current | Reference | Weight kg/*lb* |
|---|---|---|---|---|
| **Single phase 220Vac, 200Vac -15%...240Vac +10%** | | | | |
| **LXM18●●U01M2X**<br>**LXM18●●U02M2X**<br>**LXM18●●U04M2X**<br>**LXM18●●U07M2X** | 0.1 to 0.75 kW<br>*(0.13 to 1.01 hp)* | 9 A | **VW3A4420** | 0.600/*1.323* |
| **LXM18●●U10M2X**<br>**LXM18●●U15M2X** | 1 and 1.5 kW<br>*(1.34 and 2.01 hp)* | 16 A | **VW3A4421** | 0.775/*1.709* |
| **Three-phasesupplyvoltage:220Vac 200Vac-15%...240Vac+10%** | | | | |
| **LXM18●●U20M3X**<br>**LXM18●●U30M3X** | 2 and 3 kW<br>*(2.68 and 4.02 hp)* | 25 A | **VW3A4423** | 1.350/*2.976* |

*(1) The total continuous power dissipated in the external braking resistor(s) must be less than or equal to the nominal power of the Lexium 18P/18E servo drive.*

*(2) Standard IEC/EN 61800-3: EMC immunity and conducted and radiated EMC emissions: Category C3 in environment 2: industrial premises.*

*GV2P●●*

+

*LC1●●●●●*

+

*LXM18P*

or

*LXM18E*

## Motor starters

### Protection using class J fuses (UL certification)

| Servo drive | | Circuit-breaker | | Contactor |
|---|---|---|---|---|
| **Reference** | **Nominal power (kW/*hp*)** | **Reference** | **Rating (A)** | **Reference** *(1) (2)* |
| **Circuit-breakers for single drive installation according to IEC 60364-5-52** | | | | |
| **Single phase 220Vac, 200Vac -15%...240Vac +10%** | | | | |
| **LXM18●●U01M2X** | 0.1/*0.13* | GV2P10 | 6.3 | **LC1K0610●●** |
| **LXM18●●U02M2X** | 0.2/*0.27* | GV2P10 | 6.3 | **LC1K0610●●** |
| **LXM18●●U04M2X** | 0.4/*0.54* | GV2P14 | 10 | **LC1K09●●** |
| **LXM18●●U07M2X** | 0.75/*1.01* | GV2P16 | 14 | **LC1K09●●** |
| **LXM18●●U10M2X** | 1.0/*1.34* | GV2P20 | 18 | **LC1K09●●** |
| **LXM18●●U15M2X** | 1.5/*2.01* | GV2P22 | 25 | **LC1D18●●** |
| **Three-phase supply voltage: 220Vac, 200Vac -15%...240Vac +10%** | | | | |
| **LXM18●●U20M3X** | 2.0/*2.68* | GV2P22 | 25 | **LC1D18●●** |
| **LXM18●●U30M3X** | 3.0/*4.02* | GV2P32 | 32 | **LC1D32●●** |

*(1) Composition of the contactors:*
*LC1K0610●●: 3 poles + 1 N/O auxiliary contact*
*LC1K09●●: 4 poles*
*LC1D18●●: 3 poles + 1 N/O auxiliary contact + 1 N/C auxiliary contact*
*Please refer to contactors and protection relays page on our web site.*
*(2) Replace ●● with the control circuit voltage code given in the table below:*

| | | *230Vac* | *240Vac* |
|---|---|---|---|
| **LC1K0610●●**<br>**LC1K09●●** | *50/60 Hz* | **P7** | **U7** |
| | | *230Vac* | *230/240Vac* |
| **LC1D18●●**<br>**LC1D32●●** | *50 Hz* | **P5** | **U5** |
| | *60 Hz* | – | **U6** |
| | *50/60 Hz* | **P7** | **U7** |

*For other available voltages between 24 V and 660 V, or a DC control circuit, please contact our Customer Care Center.*

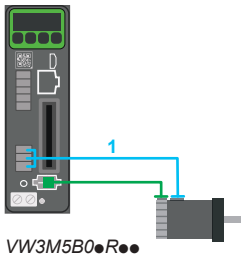
### Protection using class J fuses (UL certification)

| Servo drive | | Fuse to be placed upstream |
|---|---|---|
| **Reference** | **Nominal power** | |
| **Single phase 220Vac, 200Vac -15%...240Vac +10%** | | |
| **LXM18●●U01M2X** | 0.1 kW/*0.13 hp* | 6 A |
| **LXM18●●U02M2X** | 0.2 kW / *0.27 hp* | 6 A |
| **LXM18●●U04M2X** | 0.4 kW / *0.54 hp* | 10 A |
| **LXM18●●U07M2X** | 0.75 kW / *1.01 hp* | 15 A |
| **LXM18●●U10M2X** | 1.0 kW / *1.34 hp* | 20 A |
| **LXM18●●U15M2X** | 1.5 kW / *2.01 hp* | 25 A |
| **Three-phase supply voltage: 220Vac, 200Vac -15%...240Vac +10%** | | |
| **LXM18●●U20M3X** | 2.0 kW / *2.68 hp* | 25 A |
| **LXM18●●U30M3X** | 3.0 kW / *4.02 hp* | 35 A |

## BCH18 servo motors

**To order a BCH18 servo motor, make up the reference as follows:**

| BCH18 | | ● | ● | ●● | ● | ● | ● | ● | ● | C |
|---|---|---|---|---|---|---|---|---|---|---|
| **Inertia** | Low inertia | L | | | | | | | | |
| | Medium inertia | M | | | | | | | | |
| **Flange size** | 40 mm *(1.57 in)* – Shaft diameter 8 mm *(0.31 in)* | | B | | | | | | | |
| | 60 mm *(2.36 in)* – Shaft diameter 8 mm *(0.31 in)* or 14 mm *(0.55 in)* | | D | | | | | | | |
| | 80 mm *(3.15 in)* – Shaft diameter 14 mm *(0.55 in) or* 19 mm *(0.75 in)* | | F | | | | | | | |
| | 100 mm *(3.94 in)* – Shaft diameter 22 mm *(0.87 in)* | | H | | | | | | | |
| | 130 mm *(5.12 in)* – Shaft diameter 22 mm *(0.87 in)*, 24 mm *(0.94 in)* or 28 mm *(1.102 in)* | | M | | | | | | | |
| | 180 mm *(7.09 in)* – Shaft diameter 35 mm *(1.38 in)* | | R | | | | | | | |
| **Nominal power** | 50 W *(0.06 hp)* | | | A5 | | | | | | |
| | 100 W *(0.13 hp)* | | | 01 | | | | | | |
| | 200 W *(0.16 hp)* | | | 02 | | | | | | |
| | 400 W *(0.53 hp)* | | | 04 | | | | | | |
| | 750 W *(1.00 hp)* | | | 07 | | | | | | |
| | 850 W *(1.13 hp)* | | | 08 | | | | | | |
| | 1 kW *(1.34 hp)* | | | 10 | | | | | | |
| | 1.3 kW *(1.74 hp)* | | | 13 | | | | | | |
| | 1.5 kW (*2.01 hp)* | | | 15 | | | | | | |
| | 1.8 kW *(2.41 hp)* | | | 18 | | | | | | |
| | 2.0 kW *(2.68 hp)* | | | 20 | | | | | | |
| | 2.4 kW *(3.22 hp)* | | | 24 | | | | | | |
| | 3.0 kW *(4.02 hp)* | | | 30 | | | | | | |
| **Winding type (Power supply 220Vac)** | Optimized in terms of torque (1500 rpm) | | | | 1 | | | | | |
| | Optimized in terms of torque and speed of rotation (2000 rpm) | | | | 2 | | | | | |
| | Optimized in terms of speed of rotation (3000 rpm) | | | | 3 | | | | | |
| **Shaft end** | Parallel keyed shaft (shaft & housing IP 67) | | | | | 3 | | | | |
| **Encoder** | 23-bit optic incremental encoder | | | | | | 2 | | | |
| | 23-bit optic multi-turn absolute encoder | | | | | | C | | | |
| **Holding brake** | Without holding brake | | | | | | | A | | |
| | With holding brake | | | | | | | F | | |
| **Connections** | Micro plastic connectors | | | | | | | | 5 | |
| | Military connectors | | | | | | | | 6 | |
| **Voltage** | 220 Vac | | | | | | | | | C |

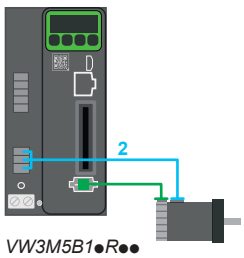



*VW3M5B0●R●●*

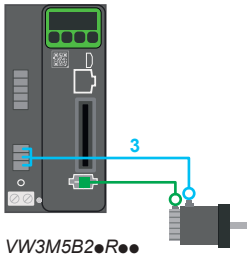
## Power cables for BCH18 servo motors

### Unshielded Power cables

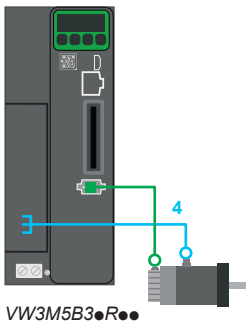
| Designation | For use | | For cable cross-section | Length | | Reference | Weight | |
|---|---|---|---|---|---|---|---|---|
| | From servo drive | To servo motor | | m | ft | | kg | *lb* |
| **Toward load, Plastic connector, size 0** - item 1 | | | | | | | | |
| Equipped with one plastic connector Size 0 (Motor end) | LXM18E●U01M2X<br>LXM18P●U01M2X | BCH18LB●●<br>BCH18MB●● | 4G*0.34mm²<br>*(22 AWG)* | 1.5 | *4.92* | **VW3M5B01RA5** | 0.060 | *0.132* |
| | | | | 3 | *9.84* | **VW3M5B01R03** | 0.117 | *0.257* |
| | | | | 5 | *16.40* | **VW3M5B01R05** | 0.193 | *0.425* |
| | | | | 10 | *32.81* | **VW3M5B01R10** | 0.383 | *0.844* |
| | | | | 15 | *49.21* | **VW3M5B01R15** | 0.573 | *1.263* |
| | | | | 20 | *65.62* | **VW3M5B01R20** | 0.763 | *1.682* |
| | | | | 25 | *82.02* | **VW3M5B01R25** | 0.953 | *2.101* |
| Equipped with one plastic connector size 0 (Motor end), with brake | LXM18E●U01M2X<br>LXM18P●U01M2X | BCH18LB●●<br>BCH18MB●● | 6G*0.34mm²<br>*(22 AWG)* | 1.5 | *4.92* | **VW3M5B02RA5** | 0.078 | *0.171* |
| | | | | 3 | *9.84* | **VW3M5B02R03** | 0.152 | *0.336* |
| | | | | 5 | *16.40* | **VW3M5B02R05** | 0.252 | *0.555* |
| | | | | 10 | *32.81* | **VW3M5B02R10** | 0.501 | *1.104* |
| | | | | 15 | *49.21* | **VW3M5B02R15** | 0.750 | *1.653* |
| | | | | 20 | *65.62* | **VW3M5B02R20** | 0.999 | *2.202* |
| | | | | 25 | *82.02* | **VW3M5B02R25** | 1.248 | *2.751* |
| **Toward back, Plastic connector, Size 0** - item 1 | | | | | | | | |
| Equipped with one plastic connector size 0 (Motor end) | LXM18E●U01M2X<br>LXM18P●U01M2X | BCH18LB●●<br>BCH18MB●● | 4G*0.34mm²<br>*(22 AWG)* | 1.5 | *4.92* | **VW3M5B03RA5** | 0.060 | *0.132* |
| | | | | 3 | *9.84* | **VW3M5B03R03** | 0.117 | *0.257* |
| | | | | 5 | *16.40* | **VW3M5B03R05** | 0.193 | *0.425* |
| | | | | 10 | *32.81* | **VW3M5B03R10** | 0.383 | *0.844* |
| | | | | 15 | *49.21* | **VW3M5B03R15** | 0.573 | *1.263* |
| | | | | 20 | *65.62* | **VW3M5B03R20** | 0.763 | *1.682* |
| | | | | 25 | *82.02* | **VW3M5B03R25** | 0.953 | *2.101* |
| Equipped with one plastic connector size 0, with brake (Motor end) | LXM18E●U01M2X<br>LXM18P●U01M2X | BCH18LB●●<br>BCH18MB●● | 6G*0.34mm²<br>*(22 AWG)* | 1.5 | *4.92* | **VW3M5B04RA5** | 0.078 | *0.171* |
| | | | | 3 | *9.84* | **VW3M5B04R03** | 0.152 | *0.336* |
| | | | | 5 | *16.40* | **VW3M5B04R05** | 0.252 | *0.555* |
| | | | | 10 | *32.81* | **VW3M5B04R10** | 0.501 | *1.104* |
| | | | | 15 | *49.21* | **VW3M5B04R15** | 0.750 | *1.653* |
| | | | | 20 | *65.62* | **VW3M5B04R20** | 0.999 | *2.202* |
| | | | | 25 | *82.02* | **VW3M5B04R25** | 1.248 | *2.751* |
| **Toward load, Plastic connector, Size 1** - item 2 | | | | | | | | |
| Equipped with one plastic connector size 1 (Motor end) | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | BCH18LD●●<br>BCH18LF●●<br>BCH18MD●●<br>BCH18MF●● | 4G*0.75mm²<br>*(18 AWG)* | 1.5 | *4.92* | **VW3M5B11RA5** | 0.097 | *0.214* |
| | | | | 3 | *9.84* | **VW3M5B11R03** | 0.190 | *0.418* |
| | | | | 5 | *16.40* | **VW3M5B11R05** | 0.313 | *0.690* |
| | | | | 10 | *32.81* | **VW3M5B11R10** | 0.622 | *1.372* |
| | | | | 15 | *49.21* | **VW3M5B11R15** | 0.931 | *2.053* |
| | | | | 20 | *65.62* | **VW3M5B11R20** | 1.240 | *2.734* |
| | | | | 25 | *82.02* | **VW3M5B11R25** | 1.549 | *3.415* |
| Equipped with one plastic connector size 1 (Motor end), with brake | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | BCH18LD●●<br>BCH18LF●●<br>BCH18MD●●<br>BCH18MF●● | 4G*0.75mm²<br>*(18 AWG)*<br>+2*0.2mm²<br>*(32 AWG)* | 1.5 | *4.92* | **VW3M5B12RA5** | 0.110 | *0.242* |
| | | | | 3 | *9.84* | **VW3M5B12R03** | 0.216 | *0.475* |
| | | | | 5 | *16.40* | **VW3M5B12R05** | 0.356 | *0.786* |
| | | | | 10 | *32.81* | **VW3M5B12R10** | 0.708 | *1.562* |
| | | | | 15 | *49.21* | **VW3M5B12R15** | 1.060 | *2.338* |
| | | | | 20 | *65.62* | **VW3M5B12R20** | 1.412 | *3.114* |
| | | | | 25 | *82.02* | **VW3M5B12R25** | 1.764 | *3.890* |
| **Toward back, Plastic connector, Size 1** - item 2 | | | | | | | | |
| Equipped with one plastic connector size 1 (Motor end) | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | BCH18LD●●<br>BCH18LF●●<br>BCH18MD●●<br>BCH18MF●● | 4G*0.75mm²<br>*(18 AWG)* | 1.5 | *4.92* | **VW3M5B13RA5** | 0.097 | *0.214* |
| | | | | 3 | *9.84* | **VW3M5B13R03** | 0.190 | *0.418* |
| | | | | 5 | *16.40* | **VW3M5B13R05** | 0.313 | *0.690* |
| | | | | 10 | *32.81* | **VW3M5B13R10** | 0.622 | *1.372* |
| | | | | 15 | *49.21* | **VW3M5B13R15** | 0.931 | *2.053* |
| | | | | 20 | *65.62* | **VW3M5B13R20** | 1.240 | *2.734* |
| | | | | 25 | *82.02* | **VW3M5B13R25** | 1.549 | *3.415* |
| Equipped with one plastic connector size 1 (Motor end), with brake | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | BCH18LD●●<br>BCH18LF●●<br>BCH18MD●●<br>BCH18MF●● | 4G*0.75mm²<br>*(18 AWG)*<br>+2*0.2mm²<br>*(32 AWG)* | 1.5 | *4.92* | **VW3M5B14RA5** | 0.110 | *0.242* |
| | | | | 3 | *9.84* | **VW3M5B14R03** | 0.216 | *0.475* |
| | | | | 5 | *16.40* | **VW3M5B14R05** | 0.356 | *0.786* |
| | | | | 10 | *32.81* | **VW3M5B14R10** | 0.708 | *1.562* |
| | | | | 15 | *49.21* | **VW3M5B14R15** | 1.060 | *2.338* |
| | | | | 20 | *65.62* | **VW3M5B14R20** | 1.412 | *3.114* |
| | | | | 25 | *82.02* | **VW3M5B14R25** | 1.764 | *3.890* |




*VW3M5B1●R●●*




*VW3M5B2●R●●*




*VW3M5B3●R●●*
*VW3M5B4●R●●*



## Power cables for BCH18 motors

### Unshielded Power cables

| Designation | For use | | For cable cross-section | Length | | Reference | Weight | |
|---|---|---|---|---|---|---|---|---|
| | From servo drive | To servo motor | | m | ft | | kg | *lb* |
| **Military connector, Size 1** - item 3 | | | | | | | | |
| Equipped with one military connector size 1 (Motor end), and free wires (servo drive side) | LXM18●●U10M2X<br>LXM18●●U15M2X | BCH18LH103●●<br>BCH18LH153●●<br>BCH18MM081●●<br>BCH18MM102●●<br>BCH18MM131●●<br>BCH18MM152●● | 4G*1.5mm²<br>*(16 AWG)* | 1.5 | *4.92* | **VW3M5B21RA5** | 0.291 | *0.643* |
| | | | | 3 | *9.84* | **VW3M5B21R03** | 0.482 | *1.062* |
| | | | | 5 | *16.40* | **VW3M5B21R05** | 0.735 | *1.621* |
| | | | | 10 | *32.81* | **VW3M5B21R10** | 1.369 | *3.019* |
| | | | | 15 | *49.21* | **VW3M5B21R15** | 2.003 | *4.416* |
| | | | | 20 | *65.62* | **VW3M5B21R20** | 2.637 | *5.814* |
| | | | | 25 | *82.02* | **VW3M5B21R25** | 3.271 | *7.212* |
| Equipped with one military connector size 1, with brake (Motor end) and free wires (servo drive side) | LXM18●●U10M2X<br>LXM18●●U15M2X | BCH18LH103●●<br>BCH18LH153●●<br>BCH18MM081●●<br>BCH18MM102●●<br>BCH18MM131●●<br>BCH18MM152●● | 4G*1.5mm²<br>*(16 AWG)*<br>+2*0.5mm²<br>*(20 AWG)* | 1.5 | *4.92* | **VW3M5B22RA5** | 0.329 | *0.725* |
| | | | | 3 | *9.84* | **VW3M5B22R03** | 0.556 | *1.226* |
| | | | | 5 | *16.40* | **VW3M5B22R05** | 0.859 | *1.895* |
| | | | | 10 | *32.81* | **VW3M5B22R10** | 1.617 | *3.566* |
| | | | | 15 | *49.21* | **VW3M5B22R15** | 2.375 | *5.237* |
| | | | | 20 | *65.62* | **VW3M5B22R20** | 3.133 | *6.908* |
| | | | | 25 | *82.02* | **VW3M5B22R25** | 3.891 | *8.579* |
| **Military connector, Size 1** - item 4 | | | | | | | | |
| Equipped with one military connector size 2 (Motor end) and free wires (servo drive side) | LXM18●●U20M3X<br>LXM18●●U30M3X | BCH18LH203●●<br>BCH18LM303●●<br>BCH18MM181●●<br>BCH18MM202●● | 4G*2.5mm²<br>*(14 AWG)* | 1.5 | *4.92* | **VW3M5B31RA5** | 0.395 | *0.871* |
| | | | | 3 | *9.84* | **VW3M5B31R03** | 0.687 | *1.514* |
| | | | | 5 | *16.40* | **VW3M5B31R05** | 1.076 | *2.372* |
| | | | | 10 | *32.81* | **VW3M5B31R10** | 2.049 | *4.518* |
| | | | | 15 | *49.21* | **VW3M5B31R15** | 3.022 | *6.663* |
| | | | | 20 | *65.62* | **VW3M5B31R20** | 3.995 | *8.808* |
| | | | | 25 | *82.02* | **VW3M5B31R25** | 4.968 | *10.953* |
| Equipped with one military connector size 2, with brake (Motor end) and free wires (servo drive side) | LXM18●●U20M3X<br>LXM18●●U30M3X | BCH18LH203●●<br>BCH18LM303●●<br>BCH18MM181●●<br>BCH18MM202●● | 4G*2.5mm²<br>*(14 AWG)*<br>+ 2*0.5mm²<br>*(20 AWG)* | 1.5 | *4.92* | **VW3M5B32RA5** | 0.433 | *0.955* |
| | | | | 3 | *9.84* | **VW3M5B32R03** | 0.763 | *1.681* |
| | | | | 5 | *16.40* | **VW3M5B32R05** | 1.202 | *2.651* |
| | | | | 10 | *32.81* | **VW3M5B32R10** | 2.301 | *5.073* |
| | | | | 15 | *49.21* | **VW3M5B32R15** | 3.400 | *7.496* |
| | | | | 20 | *65.62* | **VW3M5B32R20** | 4.499 | *9.919* |
| | | | | 25 | *82.02* | **VW3M5B32R25** | 5.598 | *12.342* |
| **Military connector, Size 2**- item 4 | | | | | | | | |
| Equipped with one military connector size 3 (Motor end) and free wires (servo drive side) | LXM18●●U30M3X | BCH18MR241●●<br>BCH18MR301●● | 4G*2.5mm²<br>*(14 AWG)* | 1.5 | *4.92* | **VW3M5B41RA5** | 0.443 | *0.977* |
| | | | | 3 | *9.84* | **VW3M5B41R03** | 0.735 | *1.620* |
| | | | | 5 | *16.40* | **VW3M5B41R05** | 1.124 | *2.478* |
| | | | | 10 | *32.81* | **VW3M5B41R10** | 2.097 | *4.623* |
| | | | | 15 | *49.21* | **VW3M5B41R15** | 3.070 | *6.768* |
| | | | | 20 | *65.62* | **VW3M5B41R20** | 4.043 | *8.913* |
| | | | | 25 | *82.02* | **VW3M5B41R25** | 5.016 | *11.058* |
| Equipped with one military connector size 3, with brake (Motor end) and free wires (servo drive side) | LXM18●●U30M3X | BCH18MR241●●<br>BCH18MR301●● | 4G*2.5mm²<br>*(14 AWG)*<br>+ 2*0.5mm²<br>*(20 AWG)* | 1.5 | *4.92* | **VW3M5B42RA5** | 0.481 | *1.060* |
| | | | | 3 | *9.84* | **VW3M5B42R03** | 0.811 | *1.787* |
| | | | | 5 | *16.40* | **VW3M5B42R05** | 1.250 | *2.756* |
| | | | | 10 | *32.81* | **VW3M5B42R10** | 2.349 | *5.179* |
| | | | | 15 | *49.21* | **VW3M5B42R15** | 3.448 | *7.602* |
| | | | | 20 | *65.62* | **VW3M5B42R20** | 4.547 | *10.025* |
| | | | | 25 | *82.02* | **VW3M5B42R25** | 5.646 | *12.448* |

*VW3M5B10*

*VW3M5B11*

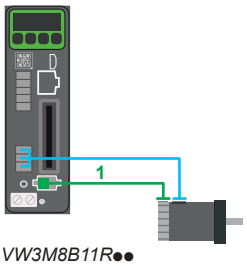
*VW3M5B12*

*VW3M5B21*

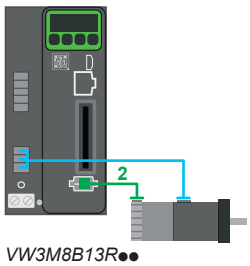
*VW3M5B22*

## Accessories

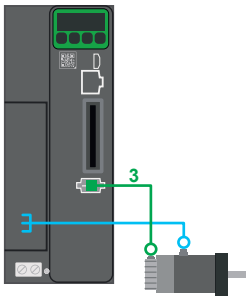
| Designation | Description | Reference | Weight | |
|---|---|---|---|---|
| | | | kg | *lb* |
| **Motor power connector kits** | Motor power connector kit, plastic size 0 | **VW3M5B10** | 0.005 | *0.011* |
| | Motor power connector kit, toward load, plastic size 1 | **VW3M5B11** | 0.007 | *0.015* |
| | Motor power connector kit, toward back, plastic size 1 | **VW3M5B12** | 0.007 | *0.015* |
| | Motor power connector kit, military size 1 | **VW3M5B21** | 0.100 | *0.220* |
| | Motor power connector kit, military size 2 | **VW3M5B22** | 0.155 | *0.342* |



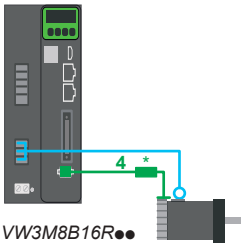

VW3M8B11R●●



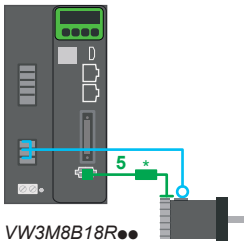

VW3M8B13R●●



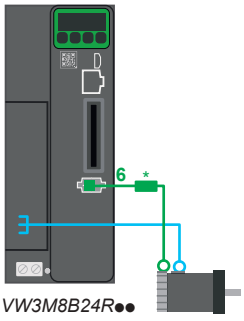

VW3M8B21R●●




VW3M8B16R●●




VW3M8B18R●●




VW3M8B24R●●

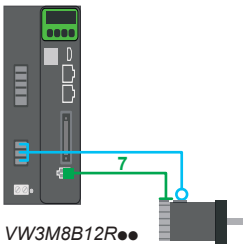
## Encoder cables for BCH18 servo motors

### Shielded Encoder cables for incremental and singleturn absolute encoders

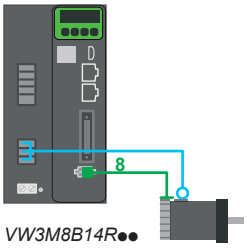
| Designation | For use | | For cable cross-section | Length | | Reference | Weight | |
|---|---|---|---|---|---|---|---|---|
| | From servo drive | To servo motor | | m | ft | | kg | lb |
| **Toward load, Plastic connector** - item 1 | | | | | | | | |
| Equipped with one plastic connector (Motor end) and Sunchu 6-pin connector (servo drive side) | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | 40/60/80 mm flange *(1.57/ 2.36/ 3.15 in flange)* | 2*0.5mm² *(20 AWG)* + 2*0.25 mm² *(24 AWG)* | 1.5 | *4.92* | **VW3M8B11RA5** | 0.105 | *0.232* |
| | | | | 3 | *9.84* | **VW3M8B11R03** | 0.200 | *0.440* |
| | | | | 5 | *16.40* | **VW3M8B11R05** | 0.325 | *0.717* |
| | | | | 10 | *32.81* | **VW3M8B11R10** | 0.639 | *1.409* |
| | | | | 15 | *49.21* | **VW3M8B11R15** | 0.953 | *2.101* |
| | | | | 20 | *65.62* | **VW3M8B11R20** | 1.267 | *2.794* |
| | | | | 25 | *82.02* | **VW3M8B11R25** | 1.581 | *3.486* |
| **Toward back, Plastic connector** - item 2 | | | | | | | | |
| Equipped with one plastic connector (Motor end) and Sunchu 6-pin connector (servo drive side) | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | 40/60/80 mm flange *(1.57/ 2.36/ 3.15 in flange)* | 2*0.5mm² *(20 AWG)* + 2*0.25 mm² *(24 AWG)* | 1.5 | *4.92* | **VW3M8B13RA5** | 0.105 | *0.232* |
| | | | | 3 | *9.84* | **VW3M8B13R03** | 0.200 | *0.440* |
| | | | | 5 | *16.40* | **VW3M8B13R05** | 0.325 | *0.717* |
| | | | | 10 | *32.81* | **VW3M8B13R10** | 0.639 | *1.409* |
| | | | | 15 | *49.21* | **VW3M8B13R15** | 0.953 | *2.101* |
| | | | | 20 | *65.62* | **VW3M8B13R20** | 1.267 | *2.794* |
| | | | | 25 | *82.02* | **VW3M8B13R25** | 1.581 | *3.486* |
| **Military connector** - item 3 | | | | | | | | |
| Equipped with one military connector (Motor end) and Sunchu 6-pin connector (servo drive side) | LXM18●●U10M2X<br>LXM18●●U15M2X<br>LXM18●●U20M3X<br>LXM18●●U30M3X | 100/130/180 mm flange *(3.94/ 5.12/ 7.09 in flange)* | 2*0.5mm² *(20 AWG)* + 2*0.25 mm² *(24 AWG)* | 1.5 | *4.92* | **VW3M8B21RA5** | 0.139 | *0.306* |
| | | | | 3 | *9.84* | **VW3M8B21R03** | 0.233 | *0.514* |
| | | | | 5 | *16.40* | **VW3M8B21R05** | 0.359 | *0.790* |
| | | | | 10 | *32.81* | **VW3M8B21R10** | 0.673 | *1.483* |
| | | | | 15 | *49.21* | **VW3M8B21R15** | 0.987 | *2.175* |
| | | | | 20 | *65.62* | **VW3M8B21R20** | 1.301 | *2.867* |
| | | | | 25 | *82.02* | **VW3M8B21R25** | 1.615 | *3.559* |

### Shielded encoder cables for multi-turn absolute encoder, with battery

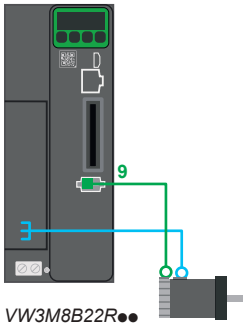
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Toward load, MICRO plastic connector, with Battery*** - item 4 | | | | | | | | |
| Equipped with one MICRO plastic connector (Motor end), and a battery (servo drive side) | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | 40/60/80 mm flange *(1.57/2.36/3.15 in flange)* | 2*0.5mm² (20 AWG) +2*(2*0.25) mm² (24 AWG) | 1.5 | *4.92* | **VW3M8B16RA5** | 0.148 | *0.326* |
| | | | | 3 | *9.84* | **VW3M8B16R03** | 0.249 | *0.549* |
| | | | | 5 | *16.40* | **VW3M8B16R05** | 0.384 | *0.847* |
| | | | | 10 | *32.81* | **VW3M8B16R10** | 0.721 | *1.590* |
| | | | | 15 | *49.21* | **VW3M8B16R15** | 1.058 | *2.332* |
| | | | | 20 | *65.62* | **VW3M8B16R20** | 1.395 | *3.075* |
| | | | | 25 | *82.02* | **VW3M8B16R25** | 1.732 | *3.818* |
| **Toward back, MICRO plastic connector, with Battery*** - item 5 | | | | | | | | |
| Equipped with one MICRO plastic connector (Motor end) and a battery (servo drive side) | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | 40/60/80 mm flange *(1.57/2.36/3.15 in flange)* | 2*0.5mm² (20 AWG) +2*(2*0.25) mm² (24 AWG) | 1.5 | *4.92* | **VW3M8B18RA5** | 0.148 | *0.326* |
| | | | | 3 | *9.84* | **VW3M8B18R03** | 0.249 | *0.549* |
| | | | | 5 | *16.40* | **VW3M8B18R05** | 0.384 | *0.847* |
| | | | | 10 | *32.81* | **VW3M8B18R10** | 0.721 | *1.590* |
| | | | | 15 | *49.21* | **VW3M8B18R15** | 1.058 | *2.332* |
| | | | | 20 | *65.62* | **VW3M8B18R20** | 1.395 | *3.075* |
| | | | | 25 | *82.02* | **VW3M8B18R25** | 1.732 | *3.818* |
| **Military connector with battery*** - item 6 | | | | | | | | |
| Equipped with one Military connector (Motor end) and a battery (servo drive side) | LXM18●●U10M2X<br>LXM18●●U15M2X<br>LXM18●●U20M3X<br>LXM18●●U30M3X | 100/130/180 mm flange *(3.94/5.12/7.09 in flange)* | 2*0.5mm² (20 AWG) +2*(2*0.25) mm² (24 AWG) | 1.5 | *4.92* | **VW3M8B24RA5** | 0.183 | *0.403* |
| | | | | 3 | *9.84* | **VW3M8B24R03** | 0.284 | *0.626* |
| | | | | 5 | *16.40* | **VW3M8B24R05** | 0.419 | *0.924* |
| | | | | 10 | *32.81* | **VW3M8B24R10** | 0.756 | *1.667* |
| | | | | 15 | *49.21* | **VW3M8B24R15** | 1.093 | *2.410* |
| | | | | 20 | *65.62* | **VW3M8B24R20** | 1.430 | *3.153* |
| | | | | 25 | *82.02* | **VW3M8B24R25** | 1.767 | *3.896* |




VW3M8B12R●●




VW3M8B14R●●




VW3M8B22R●●

VW3M8B11

VW3M8B21

VW3M8BAT1

## Encoder cables for BCH18 servo motors *(Continued)*

### Shielded encoder cables for multi-turn absolute encoder, without battery

| Designation | For use | | For cable cross-section | Length | | Reference | Weight | |
|---|---|---|---|---|---|---|---|---|
| | with servo drive | To servo motor | | m | ft | | kg | *lb* |
| **Toward load, MICRO plastic connector without battery-** item 7 | | | | | | | | |
| Equipped with one MICRO plastic connector (Motor end) | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | 40/60/80 mm flange *(1.57/2.36/3.15 in flange)* | 2*0.5mm² (20 AWG) +2*(2*0.25) mm² (24 AWG) | 1.5 | *4.92* | **VW3M8B12RA5** | 0.112 | *0.247* |
| | | | | 3 | *9.84* | **VW3M8B12R03** | 0.213 | *0.470* |
| | | | | 5 | *16.40* | **VW3M8B12R05** | 0.348 | *0.767* |
| | | | | 10 | *32.81* | **VW3M8B12R10** | 0.685 | *1.510* |
| | | | | 15 | *49.21* | **VW3M8B12R15** | 1.022 | *2.253* |
| | | | | 20 | *65.62* | **VW3M8B12R20** | 1.359 | *2.996* |
| | | | | 25 | *82.02* | **VW3M8B12R25** | 1.696 | *3.739* |
| **Toward back, MICRO plastic connector without battery-** item 8 | | | | | | | | |
| Equipped with one MICRO plastic connector (Motor end) | LXM18●●U01M2X<br>LXM18●●U02M2X<br>LXM18●●U04M2X<br>LXM18●●U07M2X<br>LXM18●●U10M2X | 40/60/80 mm flange *(1.57/2.36/3.15 in flange)* | 2*0.5mm² (20 AWG) +2*(2*0.25) mm² (24 AWG) | 1.5 | *4.92* | **VW3M8B14RA5** | 0.112 | *0.247* |
| | | | | 3 | *9.84* | **VW3M8B14R03** | 0.213 | *0.470* |
| | | | | 5 | *16.40* | **VW3M8B14R05** | 0.348 | *0.767* |
| | | | | 10 | *32.81* | **VW3M8B14R10** | 0.685 | *1.510* |
| | | | | 15 | *49.21* | **VW3M8B14R15** | 1.022 | *2.253* |
| | | | | 20 | *65.62* | **VW3M8B14R20** | 1.359 | *2.996* |
| | | | | 25 | *82.02* | **VW3M8B14R25** | 1.696 | *3.739* |
| **Military connector without battery-** item 9 | | | | | | | | |
| Equipped with one Military connector (Motor end) | LXM18●●U10M2X<br>LXM18●●U15M2X<br>LXM18●●U20M3X<br>LXM18●●U30M3X | 100/130/180 mm flange *(3.94/5.12/7.09 in flange)* | 2*0.5mm² (20 AWG) +2*(2*0.25) mm² (24 AWG) | 1.5 | *4.92* | **VW3M8B22RA5** | 0.147 | *0.324* |
| | | | | 3 | *9.84* | **VW3M8B22R03** | 0.248 | *0.547* |
| | | | | 5 | *16.40* | **VW3M8B22R05** | 0.383 | *0.844* |
| | | | | 10 | *32.81* | **VW3M8B22R10** | 0.720 | *1.587* |
| | | | | 15 | *49.21* | **VW3M8B22R15** | 1.057 | *2.330* |
| | | | | 20 | *65.62* | **VW3M8B22R20** | 1.394 | *3.073* |
| | | | | 25 | *82.02* | **VW3M8B22R25** | 1.731 | *3.816* |

## Accesssories

| Designation | Description | Reference | Weight | |
|---|---|---|---|---|
| | | | kg | lb |
| **Motor encoder connector kits** | Plastic | **VW3M8B11** | 0.005 | *0.011* |
| | Military | **VW3M8B21** | 0.035 | *0.077* |
| **Battery** | Battery case including battery, 3.6V, 2700 mAh<br>To use with LXM18P/18E servo drives | **VW3M8BAT1** | 0.055 | *0.121* |

6

# Notes

# 07. Easy Altivar variable speed drives

# Altivar 310

## Variable speed drives for application from 0.37 to 22 kW / 0.5 to 30 HP.

- Integrate as standard the Modbus communication protocol
- Minimize installation and debugging time due to the plug & play concept
- Easy to commission with short menu by integrated keypad
- With stand a 55 °C/131 °F ambiant air temperature without derating
- Innovated air flow design and thicker coating which avoids polluting PCB

The compact size of the **Easy Altivar 310**, its robust design, its ease of installation, based on the principle of Plug & Play, its integrated functions and macro configuration make it particularly suitable for applications involving industrial machines and certain consumer machines. The Easy Altivar 310 has been developed with no compromise on quality and strong robustness in any situation even in harsh environment. Reduces thermal stresses on the electrical distribution network.

## Adapted to your applications, segments and operating environments

Material handling | Packaging and printing machine | Wood making machine | Machine tools | Texitile machine | Ceramic machine | Pump and fan

*ATV310H037N4E*

*ATV310HU15N4E*

*ATV310HU30N4E*

**Drives for asynchronous motor** - Three-phase supply voltage: 380…460 V 50/60 Hz

| Motor | | | Line support | | | Easy Altivar 310 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Power indicated on rating plate *(1)* ND: Normal duty *(4)* HD: Heavy duty *(5)* | | | Max. input current *(2)* | | Apparent power | Maximum continuous output current *(In)* *(1)* | Maximum transient current for 60s | Dissipated power at maximum output current *(In)* *(1)* | Reference *(6)* | Weight *(3)* kg/*lb* |
| | | | 380 V | 460 V | 460 V | 380 V | | | | |
| | kW | HP | A | A | kVA | A | A | W | | |
| HD | 0.37 | 0.5 | 2.1 | 1.8 | 1.4 | 1.5 | 2.3 | 22.7 | **ATV310H037N4E** | 0.800/*1.760* |
| HD | 0.75 | 1 | 3.5 | 3.1 | 2.5 | 2.3 | 3.5 | 34.1 | **ATV310H075N4E** | 0.800/*1.760* |
| HD | 1.5 | 2 | 6.5 | 5.4 | 4.3 | 4.1 | 6.2 | 60.4 | **ATV310HU15N4E** | 1.100/*2.430* |
| HD | 2.2 | 3 | 8.8 | 7.2 | 5.7 | 5.5 | 8.3 | 75.5 | **ATV310HU22N4E** | 1.100/*2.430* |
| HD | 3 | 4 | 11.1 | 9.2 | 7.3 | 7.1 | 10.7 | 90.8 | **ATV310HU30N4E** | 1.800/*3.970* |
| ND | 4 | 5 | 14.2 | 11.6 | 9.3 | 8.9 | 9.8 | 120.4 | | |
| HD | 4 | 5 | 13.7 | 11.4 | 9.1 | 9.5 | 14.3 | 115.1 | **ATV310HU40N4E** | 1.800/*3.970* |
| ND | 5.5 | 7.5 | 18.0 | 14.9 | 15.1 | 12.1 | 13.3 | 158.3 | | |
| HD | 5.5 | 7.5 | 21.3 | 14.3 | 11.4 | 12.6 | 18.9 | 162.4 | **ATV310HU55N4E** | 1.800/*3.970* |
| ND | 7.5 | 10 | 23.0 | 19.0 | 15.1 | 16.0 | 17.6 | 201.9 | | |

*(1) These values are given for a nominal switching frequency of 4 kHz, for use in continuous operation.*
*If operation above 4 kHz needs to be continuous, the nominal drive current should be derated by 10% for 8 kHz and 20% for 12 kHz.*
*The switching frequency can be set between 2 and 12 kHz for all ratings.*
*Above 4 kHz, the drive will reduce the switching frequency automatically in the event of an excessive temperature rise.*
*See the derating curves in the User Manual, available on our local website.*
*(2) Typical value for the indicated motor power and for the maximum prospective line Isc.*
*• ≤ 4kW, network short circuit current Isc ≤ 5kA*
*• > 4kW, network short circuit current Isc : ≤ 22kA for Heavy duty, ≤ 5kA for Normal duty*
*(3) Weight of product without packaging.*
*(4) Values given for applications requiring significant overload (up to 150% for 60 s).*
*(5) Values given for applications requiring slight overload (up to 110% for 60 s).*

ATV310HU75N4E

ATV310HD15N4E

ATV310HD22N4E

## Drives for asynchronous motor - Three-phase supply voltage: 380…460 V 50/60 Hz

| Motor | | | Line support | | | Easy Altivar 310 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Power indicated on rating plate *(1)* | | | Max. input current *(2)* | | Apparent power | Maximum continuous output current *(In)* *(1)* | Maximum transient current for 60s | Dissipated power at maximum output current *(In)* *(1)* | Reference *(6)* | Weight *(3)* kg/*lb* |
| ND: Normal duty *(4)* | | | | | | | | | | |
| HD: Heavy duty *(5)* | | | 380 V | 460 V | 460 V | 380 V | | | | |
| | kW | HP | A | A | kVA | A | A | W | | |
| HD | 7.5 | 10 | 26.6 | 22.4 | 17.8 | 17.0 | 25.5 | 241.2 | **ATV310HU75N4E** | 3.700/*8.16* |
| ND | 11 | 15 | 29.5 | 24.8 | 19.4 | 22.8 | 25.1 | 317.8 | | |
| HD | 11 | 15 | 36.1 | 30.4 | 24.2 | 24 | 36.0 | 337.1 | **ATV310HD11N4E** | 3.700/*8.16* |
| ND | 15 | 20 | 38.6 | 32.5 | 25.4 | 30 | 33.0 | 407.0 | | |
| HD | 15 | 20 | 46.5 | 38.5 | 30.7 | 33 | 49.5 | 416.0 | **ATV310HD15N4E** | 6.300/*13.9* |
| ND | 18.5 | 25 | 46.6 | 38.8 | 31.2 | 36 | 39.6 | 451.7 | | |
| HD | 18.5 | 25 | 55.3 | 45.8 | 36.5 | 39 | 58.5 | 515.9 | **ATV310HD18N4E** | 6.300/*13.9* |
| ND | 22 | 30 | 54.1 | 45.1 | 35.7 | 43 | 47.3 | 539.4 | | |
| HD | 22 | 30 | 64.2 | 53.2 | 46.2 | 46 | 69.0 | 568.8 | **ATV310HD22N4E** | 8.500/*18.7* |
| ND | 30 | 40 | 71.2 | 59.2 | 47.0 | 60 | 66.0 | 735.6 | | |
| HD | 15 | 20 | 46.5 | 38.5 | 30.7 | 33 | 49.5 | 424.4 | **ATV310HD15N4EF** | 6.700/*14.8* |
| ND | 18.5 | 25 | 46.6 | 38.8 | 31.2 | 36 | 39.6 | 460.2 | | |
| HD | 18.5 | 25 | 55.3 | 45.8 | 36.5 | 39 | 58.5 | 527.8 | **ATV310HD18N4EF** | 6.700/*14.8* |
| ND | 22 | 30 | 54.1 | 45.1 | 35.7 | 43 | 47.3 | 550.9 | | |
| HD | 22 | 30 | 64.2 | 53.2 | 46.2 | 46 | 69.0 | 593.5 | **ATV310HD22N4EF** | 9.700/*21.4* |
| ND | 30 | 40 | 71.2 | 59.2 | 47.0 | 60 | 66.0 | 765.9 | | |

## Dimensions (overall)

| Drives with heatsinks | W x H x D | |
|---|---|---|
| | mm | *in.* |
| **ATV310H037N4S** | 72 x 143 x 130 | *2.83 x 5.63 x 5.12* |
| **ATV310H075N4S** | 72 x 143 x 140 | *2.83 x 5.63 x 5.51* |
| **ATV310HU15N4S**<br>**ATV310HU22N4S** | 105 x 143 x 151 | *4.13 x 5.63 x 5.94* |
| **ATV310HU30N4S**<br>**ATV310HU40N4S**<br>**ATV310HU55N4S** | 140 x 184 x 151 | *5.51 x 7.24 x 5.94* |
| **ATV310HU75N4S**<br>**ATV310HD11N4S** | 150 x 232 x 171 | *5.91 x 9.13 x 6.73* |

*(1) These values are given for a nominal switching frequency of 4 kHz, for use in continuous operation.*
*If operation above 4 kHz needs to be continuous, the nominal drive current should be derated by 10% for 8 kHz and 20% for 12 kHz.*
*The switching frequency can be set between 2 and 12 kHz for all ratings.*
*Above 4 kHz, the drive will reduce the switching frequency automatically in the event of an excessive temperature rise.*
*See the derating curves in the User Manual, available on our local website.*
*(2) Typical value for the indicated motor power and for the maximum prospective line Isc.*
*• ≤ 4kW, network short circuit current Isc ≤ 5kA*
*• > 4kW, network short circuit current Isc : ≤ 22kA for Heavy duty, ≤ 5kA for Normal duty*
*(3) Weight of product without packaging.*
*(4) Values given for applications requiring significant overload (up to 150% for 60 s).*
*(5) Values given for applications requiring slight overload (up to 110% for 60 s).*

ATV310H037N4S

ATV310HU15N4S

ATV310HU30N4S

ATV310HU75N4S

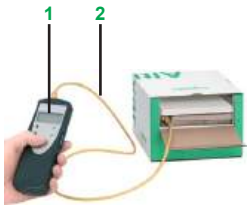
## Drives for asynchronous motor - Three-phase supply voltage: 380…460 V 50/60 Hz

| Motor | | | Line support | | | Easy Altivar 310 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Power indicated on rating plate *(1)* | | | Max. input current *(2)* | | Apparent power | Maximum continuous output current *(In)* *(1)* | Maximum transient current for 60s | Dissipated power at maximum output current *(In)* *(1)* | Reference *(6)* | Weight *(3)* kg/*lb* |
| ND: Normal duty *(4)* | | | | | | | | | | |
| HD: Heavy duty *(5)* | | | 380 V | 460 V | 460 V | 380 V | | | | |
| | kW | HP | A | A | kVA | A | A | W | | |
| HD | 0.75 | 1 | 3.5 | 3.1 | 2.5 | 2.3 | 3.5 | 34.1 | **ATV310H075N4S** | 0.800/*1.760* |
| HD | 1.5 | 2 | 6.5 | 5.4 | 4.3 | 4.1 | 6.2 | 60.4 | **ATV310HU15N4S** | 1.100/*2.430* |
| HD | 2.2 | 3 | 8.8 | 7.2 | 5.7 | 5.5 | 8.3 | 75.5 | **ATV310HU22N4S** | 1.100/*2.430* |
| HD | 3 | 4 | 11.1 | 9.2 | 7.3 | 7.1 | 10.7 | 90.8 | **ATV310HU30N4S** | 1.800/*3.970* |
| ND | 4 | 5 | 14.2 | 11.6 | 9.3 | 8.9 | 9.8 | 120.4 | | |
| HD | 4 | 5 | 13.7 | 11.4 | 9.1 | 9.5 | 14.3 | 115.1 | **ATV310HU40N4S** | 1.800/*3.970* |
| ND | 5.5 | 7.5 | 18.0 | 14.9 | 15.1 | 12.1 | 13.3 | 158.3 | | |
| HD | 5.5 | 7.5 | 21.3 | 14.3 | 11.4 | 12.6 | 18.9 | 162.4 | **ATV310HU55N4S** | 1.800/*3.970* |
| ND | 7.5 | 10 | 23.0 | 19.0 | 15.1 | 16.0 | 17.6 | 201.9 | | |
| HD | 7.5 | 10 | 26.6 | 22.4 | 17.8 | 17 | 25.5 | 241.2 | **ATV310HU75N4S** | 3.700/*8.160* |
| ND | 11 | 15 | 29.5 | 24.8 | 19.4 | 22.8 | 25.1 | 317.8 | | |
| HD | 11 | 15 | 36.1 | 30.4 | 24.2 | 24 | 36 | 337.1 | **ATV310HD11N4S** | 3.700/*8.160* |
| ND | 15 | 20 | 38.6 | 32.5 | 25.4 | 30 | 33 | 407.0 | | |

## Dimensions (overall)

| Drives with heatsinks | W x H x D | |
|---|---|---|
| | mm | *in.* |
| **ATV310H037N4S** | 72 x 143 x 130 | *2.83 x 5.63 x 5.12* |
| **ATV310H075N4S** | 72 x 143 x 140 | *2.83 x 5.63 x 5.51* |
| **ATV310HU15N4S**<br>**ATV310HU22N4S** | 105 x 143 x 151 | *4.13 x 5.63 x 5.94* |
| **ATV310HU30N4S**<br>**ATV310HU40N4S**<br>**ATV310HU55N4S** | 140 x 184 x 151 | *5.51 x 7.24 x 5.94* |
| **ATV310HU75N4S**<br>**ATV310HD11N4S** | 150 x 232 x 171 | *5.91 x 9.13 x 6.73* |

*(1) These values are given for a nominal switching frequency of 4 kHz, for use in continuous operation.*
*If operation above 4 kHz needs to be continuous, the nominal drive current should be derated by 10% for 8 kHz and 20% for 12 kHz.*
*The switching frequency can be set between 2 and 12 kHz for all ratings.*
*Above 4 kHz, the drive will reduce the switching frequency automatically in the event of an excessive temperature rise.*
*See the derating curves in the User Manual, available on our local website.*
*(2) Typical value for the indicated motor power and for the maximum prospective line Isc.*
*• ≤ 4kW, network short circuit current Isc ≤ 5kA*
*• > 4kW, network short circuit current Isc : ≤ 22kA for Heavy duty, ≤ 5kA for Normal duty*
*(3) Weight of product without packaging.*
*(4) Values given for applications requiring significant overload (up to 150% for 60 s).*
*(5) Values given for applications requiring slight overload (up to 110% for 60 s).*




*Configuring the drive in its packaging with the Multi-Loader tool VW3A8121+ cordset VW3A8126*

## Configuration tools

| Description | For drives | Reference | Weight kg/*lb* |
|---|---|---|---|
| **Simple Loader, Multi-Loader configuration tools and associated cable** | | | |
| **Simple Loader tool**<br>For duplicating one drive configuration on another drive.<br>The drives must be powered-up.<br>The tool is supplied with a cordset equipped with 2 RJ45 connectors. | ATV310H●●●N4● | **VW3A8120** | – |
| **Multi-Loader tool** 1<br>For copying a configuration on a PC or drive and duplicating it on another drive.<br>The drives do not need to be powered-up.<br>Supplied with the tool:<br>■ 1 cordset equipped with 2 RJ45 connectors<br>■ 1 cordset equipped with a USB type A connector and a USB Mini-B type connector<br>■ 1 x 2 GB SD memory card<br>■ 1 female/female RJ45 adaptor<br>■ 4 AA/LR6 1.5 V batteries | ATV310H●●●N4● | **VW3A8121** | – |
| **Cordset for Multi-Loader tool** 2<br>For connecting the Multi-Loader tool to the Easy Altivar 310 drive in its packaging. Equipped with a non-locking RJ45 connector with special mechanical catch on the drive end and an RJ45 connector on the Multi-Loader end. | ATV310H●●●N4● in its packaging | **VW3A8126** | – |

*VW3A1006 with cover open: RUN, FWD/REV and STOP buttons accessible*

*VW3A1104R10*

## Remote display terminals and associated cordsets

| Description | Degree of protection | For drives | Reference | Weight kg/*lb* |
|---|---|---|---|---|
| **Remote display terminals**<br>For fixing the Human-Machine interface on an enclosure door with IP 54 or IP 65 degree of protection.<br>A remote-fixing cordset VW3A1104R●● is also required. | IP 54 | ATV310H●●●N4● | **VW3A1006** | 0.250/*0.550* |
| | IP 65 | ATV310H●●●N4● | **VW3A1007** | 0.275/*0.610* |
| **Remote-fixing cordsets**<br>equipped with 2 RJ45 connectors.<br>For connecting the VW3 A1 006 or VW3A1007 remote display terminal to the Easy Altivar 310 drive. | Length:<br>1 m/*3.28 ft* | ATV310H●●●N4● | **VW3A1104R10** | 0.050/*0.110* |
| | Length:<br>3 m/*9.84 ft* | ATV310H●●●N4● | **VW3A1104R30** | 0.150/*0.330* |

**Dimensions** (overall)

| Remote display terminal | W x H x D | |
|---|---|---|
| | mm | *in.* |
| VW3A1006 | 50 x 70 x 22.7 | *1.97 x 2.76 x 0.89* |
| VW3A1007 | 66 x 106 x 26.7 | *2.6 x 4.17 x 1.05* |

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*VW3A455●*

## Line chokes

| For drives | | | | | | Choke | |
|---|---|---|---|---|---|---|---|
| **Drive Reference** | **Duty** | **Line current without choke** | | **Line current with choke** | | **Reference** | **Weight kg/*lb*** |
| | | **380 V** | **460 V** | **380 V** | **460 V** | | |
| | | **A** | **A** | **A** | **A** | | |
| ATV310H037N4● | HD | 2.1 | 1.8 | 1.1 | 1 | **VW3A4551** | 1.500/*3.310* |
| ATV310H075N4● | HD | 3.5 | 3.1 | 1.9 | 1.7 | | |
| ATV310HU15N4● | HD | 6.5 | 5.4 | 3.5 | 2.9 | **VW3A4552** | 3.700/*8.160* |
| ATV310HU22N4● | HD | 8.8 | 7.2 | 5.1 | 4.4 | | |
| ATV310HU30N4● | HD | 11.1 | 9.2 | 6.6 | 5.6 | | |
| | ND | 14.2 | 11.6 | 8.5 | 7.1 | | |
| ATV310HU40N4● | HD | 13.7 | 11.4 | 8.5 | 7.7 | **VW3A4553** | 4.100/*9.040* |
| | ND | 18 | 14.9 | 11.6 | 9.9 | | |
| ATV310HU55N4● | HD | 21.3 | 14.3 | 11.6 | 9.9 | | |
| | ND | 23 | 19 | 15.3 | 12.8 | | |
| ATV310HU75N4● | HD | 26.6 | 22.4 | 16.1 | 14.2 | **VW3A4554** | 6.150/*13.230* |
| | ND | 29.5 | 24.8 | 22.2 | 18.8 | | |
| ATV310HD11N4● | HD | 36.1 | 30.4 | 22 | 18.3 | | |
| | ND | 38.6 | 32.5 | 29.9 | 25 | | |
| ATV310HD15N4● | HD | 46.5 | 38.5 | 28.9 | 24.4 | | |
| | ND | 46.6 | 38.8 | 29 | 29 | | |
| ATV310HD18N4● | HD | 55.3 | 45.8 | 36.4 | 31.6 | **VW3A4555** | 11.000/*24.251* |
| | ND | 54.1 | 45.1 | 41.8 | 35.3 | | |
| ATV310HD22N4● | HD | 64.2 | 53.2 | 42.4 | 36.3 | | |
| | ND | 71.2 | 59.2 | 57.2 | 48.3 | **VW3A4556** | *16.000/ 35.270* |
| ATV310HD15N4EF | HD | 46.5 | 38.5 | 28.9 | 24.4 | **VW3A4554** | *6.000/ 13.228* |
| | ND | 46.6 | 38.8 | 29 | 29 | | |
| ATV310HD18N4EF | HD | 55.3 | 45.8 | 36.4 | 31.6 | **VW3A4555** | 11.000/*24.251* |
| | ND | 54.1 | 45.1 | 41.8 | 35.3 | | |
| ATV310HD22N4EF | HD | 64.2 | 53.2 | 42.4 | 36.3 | | |
| | ND | 71.2 | 59.2 | 57.2 | 48.3 | **VW3A4556** | 16.000/*35.270* |

*VW3A455●*

## Motor chokes *(1) (2)*

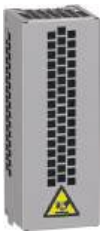
| Drive Reference | Operation mode<br>Duty | Rated current<br>A | Power loss<br>W | Choke Reference |
|---|---|---|---|---|
| ATV310H037N4● | HD | 4 | *45* | **VW3A4551** |
| ATV310H075N4● | HD | | | |
| ATV310HU15N4● | HD | 10 | *65* | **VW3A4552** |
| ATV310HU22N4● | HD | | | |
| ATV310HU30N4● | HD | | | |
| | ND | | | |
| ATV310HU40N4● | HD | | | |
| | ND | 17 | *75* | **VW3A4553** |
| ATV310HU55N4● | HD | | | |
| | ND | | | |
| ATV310HU75N4● | HD | 31 | *90* | **VW3A4554** |
| | ND | | | |
| ATV310HD11N4● | HD | | | |
| | ND | | | |
| ATV310HD15N4● | HD | 60 | *94* | **VW3A4555** |
| | ND | | | |
| ATV310HD18N4● | HD | | | |
| | ND | | | |
| ATV310HD22N4● | HD | | | |
| | ND | 107 | *260* | **VW3A4556** |
| ATV310HD15N4EF | HD | 60 | *94* | **VW3A4555** |
| | ND | | | |
| ATV310HD18N4EF | HD | | | |
| | ND | | | |
| ATV310HD22N4EF | HD | | | |
| | | 107 | *260* | **VW3A4556** |

## Dimensions (overall)

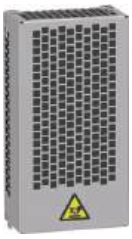
| Line chokes or motor chokes | W x H x D | |
|---|---|---|
| | mm | *in.* |
| VW3A4551 | 100 x 135 x 60 | *3.94 x 5.31 x 2.36* |
| VW3A4552, VW3A4553 | 130 x 155 x 90 | *5.12 x 6.1 x 3.54* |
| VW3A4554 | 155 x 170 x 135 | *6.1 x 6.69 x 5.31* |
| VW3A4555 | 180 x 210 x 160 | *7.1 x 8.27 x 6.30* |
| VW3A4556 | 270 x 210 x 180 | *10.63 x 8.27 x 7.09* |

*(1) Motor cable length given for a switching frequency of 4 kHz.*
*(2) With motor chokes, all the ranges drive can be used for maximum 100 m/328.08 ft with shielded motor cables and 200 m/656.17 ft with unshielded motor cables.*

*VW3A7723*



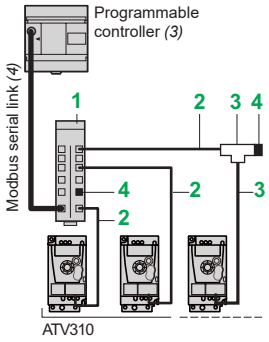
*VW3A7730*



*VW3A7732*

*LU9GC3*

*VW3A8306R03*




*Example of Modbus diagram with connection via splitter box and RJ45 connectors*

## Braking resistors

| For drives | Minimum Ohmic value | Ohmic value at 20° C/*68 °F* | Power available at 50° C/*122 °F* (1) | Reference | Weight kg/*lb* |
|---|---|---|---|---|---|
| | Ω | Ω | W | | |
| **Not protected resistor (IP00)** *(2)* | | | | | |
| ATV310HU15N4● | 80 | 100 | 28 | **VW3A7723** | 0.600/*1.320* |
| ATV310HU22N4● | 60 | | | | |
| ATV310HU30N4● | 36 | 100 | 35 | **VW3A7725** | 0.850/*1.870* |
| ATV310HU40N4● | 36 | | | | |
| **Protected resistor (IP20 or 23)** | | | | | |
| ATV310HU15N4● | 80 | 100 | 100 | **VW3A7730** | 1.500/*3.306* |
| ATV310HU22N4● | 60 | | | | |
| ATV310HU30N4● | 36 | | | | |
| ATV310HU40N4● | 36 | | | | |
| ATV310HU55N4● | 28 | 60 | 160 | **VW3A7731** | 2.000/*4.409* |
| ATV310HU75N4● | 28 | | | | |
| ATV310HD11N4● | 28 | 28 | 300 | **VW3A7732** | 3.000/*6.613* |
| ATV310HD15N4● | 16 | 16 | 960 | **VW3A7733** | 4.000/*8.818* |
| ATV310HD18N4● | 10 | 16 | 960 | | |
| ATV310HD22N4● | 10 | 16 | 960 | | |
| ATV310HD15N4EF | 16 | 16 | 960 | | |
| ATV310HD18N4EF | 10 | 16 | 960 | | |
| ATV310HD22N4EF | 10 | 16 | 960 | | |

## Modbus serial link

| Description | | Item no. | Length m/*ft* | Unit reference | Weight kg/*lb* |
|---|---|---|---|---|---|
| **Connection via splitter box and RJ45 connectors** | | | | | |
| **Modbus splitter box**<br>10 RJ45 connectors and 1 screw terminal | | 1 | – | **LU9GC3** | 0.500/*1.100* |
| **Cordsets for Modbus serial link**<br>equipped with 2 RJ45 connectors | | 2 | 0.3/*0.98* | **VW3A8306R03** | 0.025/*0.060* |
| | | | 1/*3.28* | **VW3A8306R10** | 0.060/*0.060* |
| | | | 3/*9.84* | **VW3A8306R30** | 0.130/*0.290* |
| **Modbus T-junction boxes**<br>(with integrated cable) | | 3 | 0.3/*0.98* | **VW3A8306TF03** | 0.190/*0.420* |
| | | | 1/*3.28* | **VW3A8306TF10** | 0.210/*0.460* |
| **Line terminators** *(5) (6)*<br>For RJ45 connector | R = 120 Ω<br>C = 1 nf | 4 | – | **VW3A8306RC** | 0.010/*0.020* |
| | R = 150 Ω | 4 | – | **VW3A8306R** | 0.010/*0.020* |

*(1) Load factor for resistors: the value of the average power that can be dissipated at 50 °C from the resistor into the casing is determined for a load factor during braking that corresponds to the majority of normal applications.*
*(2) For not protected resistors, add a thermal overload device.*
*(3) Please refer to the programmable controller catalogue on our local website.*
*(4) Cable depends on the type of controller or PLC.*
*(5) Order in multiples of 2.*
*(6) Depends on the bus architecture.*

# Altivar 610

## Altivar 610 - IP 20 drives, Accessories, Configuration and runtime tools

- Easy setup motor control of asynchronous motors and PM motors
- Power range coverage from 0.75kw to 315kw
- Multiple languages embedded enable to use easily for local customers
- European design low harmonic solution (THDi <10%) is available
- Reinforced hardware design for harsh environment

The **Easy Altivar 610** drive is an IP20 frequency inverter for three-phase asynchronous motors (up to 250 kW/400 HP) and synchronous motors (up to 160 kW/250 HP) between 380 and 460 V. Easy Altivar 610 drives can help improve equipment performance and reduce operating costs by optimizing energy consumption and user comfort.

## Adapted to your applications, segments and operating environments

Water & wastewater | Oil & Gas | Energy Plant



*ATV610U07N4*

*ATV610D18N4*

**IP20 three-phase 380...460 V drives with integrated category C3 EMC filter**

| Motor | | | Power supply to the power section | | | | Easy Altivar 610 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Nominal power indicated on rating plate *(1)* | | | Max. input current *(2)* | | Apparent power | Max. prospective line Isc | Maximum continuous current *(1)* | | Maximum transient current for 60 s | Reference | Weight kg/*lb* |
| *ND: Normal duty (3)* | | | 380 V | 460 V | 460 V | | | | | | |
| *HD: Heavy duty (4)* | | | | | | | | | | | |
| | kW | *HP* | A | A | kVA | kA | A | | A | | |
| ND | 0.75 | *1* | 3.1 | 2.6 | 2.1 | 5 | 2.2 | | 2.4 | **ATV610U07N4** | 3.135/*6.9* |
| HD | 0.37 | *0.5* | 1.7 | 1.4 | 1.1 | 5 | 1.5 | | 2.3 | | |
| ND | 1.5 | *2* | 5.7 | 4.8 | 3.8 | 5 | 4 | | 4.4 | **ATV610U15N4** | 3.135/*6.9* |
| HD | 0.75 | *1* | 3.1 | 2.6 | 2.1 | 5 | 2.2 | | 3.3 | | |
| ND | 2.2 | *3* | 7.8 | 6.5 | 5.2 | 5 | 5.6 | | 6.2 | **ATV610U22N4** | 3.135/*6.9* |
| HD | 1.5 | *2* | 5.6 | 4.6 | 3.7 | 5 | 4 | | 6 | | |
| ND | 3 | – | 10.1 | 8.4 | 6.7 | 5 | 7.2 | | 7.9 | **ATV610U30N4** | 3.135/*6.9* |
| HD | 2.2 | *3* | 7.6 | 6.4 | 5.1 | 5 | 5.6 | | 8.4 | | |
| ND | 4 | *5* | 8.8 | 7.9 | 6.3 | 5 | 9.3 | | 10.2 | **ATV610U40N4** | 4.045/*8.9* |
| HD | 3 | – | 7.2 | 6.2 | 4.9 | 5 | 7.2 | | 10.8 | | |
| ND | 5.5 | *7.5* | 11.6 | 10.5 | 8.4 | 22 | 12.7 | | 14 | **ATV610U55N4** | 4.575/*10* |
| HD | 4 | *5* | 8.9 | 7.9 | 6.3 | 22 | 9.3 | | 14 | | |
| ND | 7.5 | *10* | 14.7 | 12.8 | 10.2 | 22 | 15.8 | | 17.4 | **ATV610U75N4** | 4.575/*10* |
| HD | 5.5 | *7.5* | 11.3 | 10.2 | 8.1 | 22 | 12.7 | | 19.1 | | |
| ND | 11 | *15* | 22 | 19.6 | 15.6 | 22 | 23.5 | | 25.9 | **ATV610D11N4** | 7.73/*17* |
| HD | 7.5 | *10* | 16.4 | 14.6 | 11.6 | 22 | 16.5 | | 24.8 | | |
| ND | 15 | *20* | 29.4 | 26 | 20.7 | 22 | 31.7 | | 34.9 | **ATV610D15N4** | 7.73/*17* |
| HD | 11 | *15* | 23 | 20.8 | 16.6 | 22 | 23.5 | | 35.3 | | |
| ND | 18.5 | *25* | 37.2 | 33.5 | 26.7 | 22 | 39.2 | | 43.1 | **ATV610D18N4** | 13.5/*29.8* |
| HD | 15 | *20* | 31.6 | 28.3 | 22.6 | 22 | 31.7 | | 47.6 | | |

ATV610C11N4

ATV610C22N4

## IP20 three-phase 380...460 V drives with integrated category C3 EMC filter

| Motor | | | Power supply to the power section | | | | Easy Altivar 610 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Nominal power indicated on rating plate *(1)* | | | Max. input current *(2)* | | Apparent power | Max. prospective line ISC | Maximum continuous current *(1)* | Maximum transient current for 60 s | Reference | Weight kg/*lb* |
| *ND: Normal duty (3)* | | | 380 V | 460 V | 460 V | | | | | |
| *HD: Heavy duty (4)* | | | | | | | | | | |
| | kW | *HP* | A | A | kVA | kA | A | A | | |
| ND | 22 | *30* | 41.9 | 36.2 | 28.8 | 22 | 46.3 | 50.9 | **ATV610D22N4** | 13.5/*29.8* |
| HD | 18.5 | *25* | 36 | 31.6 | 25.2 | 22 | 39.2 | 58.8 | | |
| ND | 30 | *40* | 62.5 | 55.8 | 44.5 | 22 | 61.5 | 67.7 | **ATV610D30N4** | 25.5/*56.2* |
| HD | 22 | *30* | 49.7 | 42.5 | 33.8 | 22 | 46.3 | 69.5 | | |
| ND | 37 | *50* | 76.6 | 68.3 | 54.4 | 22 | 74.5 | 82 | **ATV610D37N4** | 25.5/*56.2* |
| HD | 30 | *40* | 65.8 | 56.8 | 45.2 | 22 | 59.6 | 89.4 | | |
| ND | 45 | *60* | 92.9 | 82.7 | 65.9 | 22 | 88 | 97 | **ATV610D45N4** | 25.5/*56.2* |
| HD | 37 | *50* | 80.5 | 69.6 | 55.4 | 22 | 74.5 | 112 | | |
| ND | 55 | *75* | 111.5 | 99.7 | 79.5 | 22 | 120 | 132 | **ATV610D55N4** | 53/*117* |
| HD | 45 | *60* | 95.9 | 84 | 66.9 | 22 | 88 | 132 | | |
| ND | 75 | *100* | 147.9 | 130.2 | 103.7 | 22 | 145 | 160 | **ATV610D75N4** | 53/*117* |
| HD | 55 | *75* | 115.8 | 101.7 | 81 | 22 | 106 | 159 | | |
| ND | 90 | *125* | 177.8 | 159.9 | 127.4 | 50 | 173 | 190 | **ATV610D90N4** | 53/*117* |
| HD | 75 | *100* | 155.8 | 138.1 | 110 | 50 | 145 | 218 | | |
| ND | 110 | *150* | 201 | 175.7 | 140 | 50 | 211 | 232 | **ATV610C11N4** *(5)* | 85.5/*188.5* |
| HD | 90 | *125* | 170 | 149.1 | 118.8 | 50 | 173 | 260 | | |
| ND | 132 | *200* | 237 | 203.8 | 162.4 | 50 | 250 | 275 | **ATV610C13N4** *(5)* | 85.5/*188.5* |
| HD | 110 | *150* | 201 | 174.2 | 138.7 | 50 | 211 | 317 | | |
| ND | 160 | *250* | 284 | 249.5 | 198.8 | 50 | 302 | 332 | **ATV610C16N4** *(5)* | 85.5/*188.5* |
| HD | 132 | *200* | 237 | 205.9 | 164 | 50 | 250 | 375 | | |
| ND | 220 | *350* | 397 | 341 | 272 | 50 | 427 | 470 | **ATV610C22N4** *(5)* | 173/*381* |
| HD | 160 | *250* | 296 | 258 | 206 | 50 | 302 | 453 | | |
| ND | 250 | *400* | 451 | 383 | 305 | 50 | 481 | 529 | **ATV610C25N4** *(5)* | 173/*381* |
| HD | 200 | *300* | 365 | 313 | 249 | 50 | 370 | 555 | | |
| ND | 315 | *500* | 571 | 480 | 369 | 50 | 616 | 678 | **ATV610C31N4** *(5)* | 180/*397* |
| HD | 250 | *400* | 460 | 391 | 301 | 50 | 481 | 722 | | |

*(1) These values are given for a nominal switching frequency of 4 kHz up to **ATV610D45N4**, or 2.5 kHz for **ATV610D55N4...C31N4** for use in continuous operation.*
*The switching frequency is adjustable from 2…12 kHz up to **ATV610D45N4**, or from 1…8 kHz for **ATV610D55N4...C31N4**. Above 2.5 or 4 kHz (depending on the rating), the drive will automatically reduce the switching frequency in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current (see the derating curves in the Installation Manual).*

*(2) Typical value for the indicated motor power and for the maximum prospective line Isc.*

*(3) Values given for applications requiring a slight overload (up to 110% for 60 s or 120% for 20 s).*

*(4) Values given for applications requiring a slight overload (up to 150% for 60 s).*

*(5) This drive is IP00, you can order an IP21 conformity kit as option.*

ATV610U07N4Z

ATV610D11N4Z

ATV610D18N4Z

## IP20 three-phase 380...460 V drives with integrated category C3 EMC filter

| Motor | | | Power supply to the power section | | | | Easy Altivar 610 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Nominal power indicated on rating plate *(1)* | | | Max. input current *(2)* | | Apparent power | Max. prospective line ISC | Maximum continuous current *(1)* | Maximum transient current for 60 s | Reference | Weight kg/*lb* |
| *ND: Normal duty (3)* | | | 380 V | 460 V | 460 V | | | | | |
| *HD: Heavy duty (4)* | | | | | | | | | | |
| | kW | *HP* | A | A | kVA | kA | A | A | | |
| ND | 0.75 | *1* | 3.1 | 2.6 | 2.1 | 5 | 2.2 | 2.4 | **ATV610U07N4Z●** | 2.985/*6.58* |
| HD | 0.37 | *0.5* | 1.7 | 1.4 | 1.1 | 5 | 1.5 | 2.3 | | |
| ND | 1.5 | *2* | 5.7 | 4.8 | 3.8 | 5 | 4 | 4.4 | **ATV610U15N4Z●** | 2.985/*6.58* |
| HD | 0.75 | *1* | 3.1 | 2.6 | 2.1 | 5 | 2.2 | 3.3 | | |
| ND | 2.2 | *3* | 7.8 | 6.5 | 5.2 | 5 | 5.6 | 6.2 | **ATV610U22N4Z●** | 2.985/*6.58* |
| HD | 1.5 | *2* | 5.6 | 4.6 | 3.7 | 5 | 4 | 6 | | |
| ND | 3 | – | 10.1 | 8.4 | 6.7 | 5 | 7.2 | 7.9 | **ATV610U30N4Z●** | 2.985/*6.58* |
| HD | 2.2 | *3* | 7.6 | 6.4 | 5.1 | 5 | 5.6 | 8.4 | | |
| ND | 4 | *5* | 8.8 | 7.9 | 6.3 | 5 | 9.3 | 10.2 | **ATV610U40N4Z●** | 3.885/*8.565* |
| HD | 3 | – | 7.2 | 6.2 | 4.9 | 5 | 7.2 | 10.8 | | |
| ND | 5.5 | *7.5* | 11.6 | 10.5 | 8.4 | 22 | 12.7 | 14 | **ATV610U55N4Z●** | 4.415/*9.73* |
| HD | 4 | *5* | 8.9 | 7.9 | 6.3 | 22 | 9.3 | 14 | | |
| ND | 7.5 | *10* | 14.7 | 12.8 | 10.2 | 22 | 15.8 | 17.4 | **ATV610U75N4Z●** | 4.415/*9.73* |
| HD | 5.5 | *7.5* | 11.3 | 10.2 | 8.1 | 22 | 12.7 | 19.1 | | |
| ND | 11 | *15* | 22 | 19.6 | 15.6 | 22 | 23.5 | 25.9 | **ATV610D11N4Z●** | 7.540/*16.62* |
| HD | 7.5 | *10* | 16.4 | 14.6 | 11.6 | 22 | 16.5 | 24.8 | | |
| ND | 15 | *20* | 29.4 | 26 | 20.7 | 22 | 31.7 | 34.9 | **ATV610D15N4Z●** | 7.540/*16.62* |
| HD | 11 | *15* | 23 | 20.8 | 16.6 | 22 | 23.5 | 35.3 | | |
| ND | 18.5 | *25* | 37.2 | 33.5 | 26.7 | 22 | 39.2 | 43.1 | **ATV610D18N4Z●** | 13.300/*29.32* |
| HD | 15 | *20* | 31.6 | 28.3 | 22.6 | 22 | 31.7 | 47.6 | | |
| ND | 22 | *30* | 41.9 | 36.2 | 28.8 | 22 | 46.3 | 50.9 | **ATV610D22N4Z●** | 13.300/*29.32* |
| HD | 18.5 | *25* | 36 | 31.6 | 25.2 | 22 | 39.2 | 58.8 | | |
| ND | 30 | *40* | 62.5 | 55.8 | 44.5 | 22 | 61.5 | 67.7 | **ATV610D30N4Z●** | 25.295/*55.77* |
| HD | 22 | *30* | 49.7 | 42.5 | 33.8 | 22 | 46.3 | 69.5 | | |
| ND | 37 | *50* | 76.6 | 68.3 | 54.4 | 22 | 74.5 | 82 | **ATV610D37N4Z●** | 25.295/*55.77* |
| HD | 30 | *40* | 65.8 | 56.8 | 45.2 | 22 | 59.6 | 89.4 | | |
| ND | 45 | *60* | 92.9 | 82.7 | 65.9 | 22 | 88 | 97 | **ATV610D45N4Z●** | 25.295/*55.77* |
| HD | 37 | *50* | 80.5 | 69.6 | 55.4 | 22 | 74.5 | 112 | | |
| ND | 55 | *75* | 111.5 | 99.7 | 79.5 | 22 | 120 | 132 | **ATV610D55N4Z●** | 52.045/*114.7* |
| HD | 45 | *60* | 95.9 | 84 | 66.9 | 22 | 88 | 132 | | |
| ND | 75 | *100* | 147.9 | 130.2 | 103.7 | 22 | 145 | 160 | **ATV610D75N4Z●** | 52.045/*114.7* |
| HD | 55 | *75* | 115.8 | 101.7 | 81 | 22 | 106 | 159 | | |
| ND | 90 | *125* | 177.8 | 159.9 | 127.4 | 50 | 173 | 190 | **ATV610D90N4Z●** | 52.045/*114.7* |
| HD | 75 | *100* | 155.8 | 138.1 | 110 | 50 | 145 | 218 | | |
| ND | 110 | *150* | 201 | 175.7 | 140 | 50 | 211 | 232 | **ATV610C11N4Z●** *(5)* | 85.445/*188.4* |
| HD | 90 | *125* | 170 | 149.1 | 118.8 | 50 | 173 | 260 | | |
| ND | 132 | *200* | 237 | 203.8 | 162.4 | 50 | 250 | 275 | **ATV610C13N4Z●** *(5)* | 85.445/*188.4* |
| HD | 110 | *150* | 201 | 174.2 | 138.7 | 50 | 211 | 317 | | |
| ND | 160 | *250* | 284 | 249.5 | 198.8 | 50 | 302 | 332 | **ATV610C16N4Z●** *(5)* | 85.445/*188.4* |
| HD | 132 | *200* | 237 | 205.9 | 164 | 50 | 250 | 375 | | |

*(1) These values are given for a nominal switching frequency of 4 kHz up to **ATV610D45N4Z●**, or 2.5 kHz for **ATV610D55N4Z●...C16N4Z●** for use in continuous operation.*
*The switching frequency is adjustable from 2…12 kHz up to **ATV610D45N4Z●**, or from 1…8 kHz for **ATV610D55N4Z●...C16N4Z●**. Above 2.5 or 4 kHz (depending on the rating), the drive will automatically reduce the switching frequency in the event of an excessive temperature rise. For continuous operation above the nominal switching frequency, derate the nominal drive current (see the derating curves Installation Manual).*

*(2) Typical value for the indicated motor power and for the maximum prospective line Isc.*

*(3) Values given for applications requiring a slight overload (up to 110% for 60 s or 120% for 20 s).*

*(4) Values given for applications requiring a slight overload (up to 150% for 60 s).*

*(5) This drive is IP00, you can order an IP21 conformity kit as option.*

VW3A9708

VW3A9708

VW3A1114

ZB5AZ905

VW3A1104R10

VW3A3203

VW3A3204

VW3A3607

## Accessories for mounting of variable speed drives

### IP conformity kit

| For use with variable speed drives | IP rating | Power | | Reference |
|---|---|---|---|---|
| | | kW | *HP* | |
| ATV610C11N4●...C16N4● | IP21 | 110...160 | *149...216* | **VW3A9704** |
| ATV610C22N4...C25N4 | IP21 | 220...250 | *350...400* | **VW3A9707** |
| ATV610C31N4 | IP21 | 315 | *500* | **VW3A9708** |

## Communication buses and networks

### References

| Description | Reference | Weight kg/*lb* |
|---|---|---|
| **Plain text display terminal** | **VW3A1113** | 0.200/*0.441* |

## Remote mounting kit

### References

| Description | Length m/*ft* | IP degree of protection | Reference | Weight kg/*lb* |
|---|---|---|---|---|
| **Basic keypad door mounting kit**<br>Order with remote-mounting cordset VW3A1104R●●● | – | 43 | **VW3A1114** | – |
| **Tightening tool**<br>for remote mounting kit | – | – | **ZB5AZ905** | 0.016/*0.035* |
| **Remote-mounting cordset**<br>equipped with 2 RJ45 connectors | 1/*3.28* | – | **VW3A1104R10** | 0.050/*0.110* |
| | 3/*9.84* | – | **VW3A1104R30** | 0.150/*0.331* |
| | 5/*16.40* | – | **VW3A1104R50** | 0.250/*0.551* |
| | 10/*32.81* | – | **VW3A1104R100** | 0.500/*1.102* |

## I/O modules (option)

### References

| Description | I/O type | | | | Reference | Weight kg/*lb* |
|---|---|---|---|---|---|---|
| | Discrete inputs | Discrete outputs | Analog inputs | Relay outputs | | |
| **Extended I/O module** | 6 | 2 | 2 *(1)* | – | **VW3A3203** | – |
| **Extended relay module** | – | – | – | 3 *(2)* | **VW3A3204** | |

## PROFIBUS DP V1 optional communication module

### References

| Description | Reference | Weight kg/*lb* |
|---|---|---|
| **PROFIBUS DP communication module**<br>Port: 1x 9-way female SUB-D connector<br>Conforming to PROFIBUS DP V1<br>Profiles supported:<br>■ CiA 402 drive<br>■ Profidrive<br>Offers several message handling modes based on DP V1 | **VW3A3607** | 0.140/*0.309* |
| **IP20 straight connectors** *(1)*<br>for Profibus module (SUB-D connection) | **LU9AD7** | – |

# 08. EasyPact protection of distribution system

# EasyPact CVS

## Molded-case circuit breakers from 16 to 630 A, with adjustable settings.

- Reduces thermal stress on electrical networks, extending cable and installation life.
- Rated current: 16 to 630 A; breaking capacity: 25 to 50 kA at 400/415 V.
- Available in 3 and 4 pole versions, 3 frame sizes, with thermal-magnetic or electronic protection.
- Adjustable thermal protection: 0.7 to 1 (TMD) or 0.5 to 1 (electronic) times the trip unit rating.
- Suitable for isolation and earth-leakage protection with Vigi Module.
- Meets IEC 60947-2, CCC, EAC, and other certifications.

**EasyPact** CVS is designed to meet the requirements of most common protection applications in small—to medium-sized buildings. It delivers a high level of performance and cost-saving functionality.
Its double-break mechanism ensures high fault current limitation

- Reduces thermal stresses on the electrical distribution network
- Increases the life of cables and installation.

## Adapted to your applications, segments and operating environments

Buildings | Industry | Power

*LV525303*

*LV510310*

*Find more details and other references in the EasyPact CVS catalog*

| EasyPact CVS100/160/250B, 25 kA 380/415 V - With TM-D thermal-magnetic trip unit | | | |
|---|---|---|---|
| | Rating | Poles | |
| | | 3P 3d | 4P 3d |
| EasyPact CVS100B | TM16D | LV510300 | LV510310 |
| | TM25D | LV510301 | LV510311 |
| | TM32D | LV510302 | LV510312 |
| | TM40D | LV510303 | LV510313 |
| | TM50D | LV510304 | LV510314 |
| | TM63D | LV510305 | LV510315 |
| EasyPact CVS160B | TM100D | LV516301 | LV516311 |
| | TM125D | LV516302 | LV516312 |
| | TM160D | LV516303 | LV516313 |
| EasyPact CVS250B | TM200D | LV525302 | LV525312 |
| | TM250D | LV525303 | LV525313 |
| **EasyPact CVS 100/160/250F, 36kA at 380/415 V** - With MA magnetic trip unit | | | |
| | Rating | Poles | |
| | | 3P 3d | |
| EasyPact CVS 100F | MA2.5 | LV510440 | |
| | MA6.3 | LV510441 | |
| | MA12.5 | LV510442 | |
| | MA25 | LV510443 | |
| | MA50 | LV510444 | |
| | MA100 | LV510445 | |
| EasyPact CVS 160F | MA100 | LV516439 | |
| | MA150 | LV516440 | |
| EasyPact CVS 250F | MA150 | – | |
| | MA220 | LV525439 | |









## Connection accessories (Cu or Al)

| Description | | | Reference |
|---|---|---|---|
| Bare cable connectors, steel | 1 x (1.5 to 95 mm²) ; y 160 A | Set of 3 | **LV429242** |
| | | Set of 4 | **LV429243** |
| Aluminium connectors | 1 x (25 to 95 mm²) ; y 250 A | Set of 3 | **LV429227** |
| | | Set of 4 | **LV429228** |
| | 1 x (120 to 185 mm²) ; y 250 A | Set of 3 | **LV429259** |
| | | Set of 4 | **LV429260** |
| Aluminium connectors for 2 cables *(1)* | 2 x (50 to 120 mm²) ; y 250 A | Set of 3 | **LV429218** |
| | | Set of 4 | **LV429219** |
| Spreaders from 35 to 45 mm pitch *(1)* | – | Set of 3 | **LV431563** |
| | | Set of 4 | **LV431564** |
| Insulation accessories | 1 short terminal shield for breaker | 3 P | **LV429515** |
| | | 4 P | **LV429516** |
| | 1 long terminal shield for breaker | 3 P | **LV429517** |
| | | 4 P | **LV429518** |
| | Interphase barriers for breaker | Set of 6 | **LV429329** |
| | 2 insulating screens for breaker (45 mm pitch) | 3 P | **LV429330** |
| | | 4 P | **LV429331** |

## Rotary handles

| Description | Reference |
|---|---|
| Direct rotary handle - With black handle | **LV429337** |
| Extended rotary handle - With black handle | **LV429338** |

*(1) Supplied with 2 or 3 interphase barriers.*


LV540305


LV540308


LV540506








## EasyPact CVS400/630F - With TM-D thermal-magnetic trip unit

| Type | Rating | Poles | |
|---|---|---|---|
| | | 3P 3d | 4P 3d |
| EasyPact CVS400F (36 kA at 380/415 V) | TM320D | LV540305 | LV540308 |
| | TM400D | LV540306 | LV540309 |
| CVS630F (36 kA at 380/415 V) | TM500D | LV563305 | LV563308 |
| | TM630D | LV563307 | LV563310 |

## EasyPact CVS400/630F/N - With MA magnetic trip unit

| Type | Rating | Poles |
|---|---|---|
| | | 3P 3d |
| EasyPact CVS400F (36 kA at 380/415 V) | MA320 | LV540550 |
| EasyPact CVS400N (50 kA at 380/415 V) | MA320 | LV540552 |
| EasyPact CVS630F (36 kA at 380/415 V) | MA500 | LV563550 |
| EasyPact CVS630N (50 kA at 380/415 V) | MA500 | LV563552 |

## EasyPact CVS400/630F - ETS 2.3 electronic trip unit ($LS_0I$ protection)

| Type | Poles | |
|---|---|---|
| | 3P 3d | 4P 3d, 4d, 3d + N/2 |
| EasyPact CVS400F (36 kA at 380/415 V) - 400 A | LV540505 | LV540506 |
| EasyPact CVS630F (36 kA at 380/415 V) - 630 A | LV563505 | LV563506 |

## Connection accessories (Cu or Al)

| Description | | | Reference |
|---|---|---|---|
| Aluminium connector | 1x (35 to 300 mm²) | Set of 3 | LV432479 |
| | | Set of 4 | LV432480 |
| | 2x (35 to 240 mm²) | Set of 3 | LV432481 |
| | | Set of 4 | LV432482 |
| Voltage plug for aluminium connector 1 or 2 cables | | Set of 10 | LV429348 |
| Spreaders | 52.5 mm | 3P | LV432490 |
| | | 4P | LV432491 |
| | 70 mm | 3P | LV432492 |
| | | 4P | LV432493 |
| Insulation accessories | Short terminal shield, 45 mm (1 piece) | 3P | LV432591 |
| | | 4P | LV432592 |
| | Long terminal shield, 45 mm (1 piece) | 3P | LV432593 |
| | | 4P | LV432594 |
| | Interphase barriers | Set of 6 | LV432570 |
| | Long terminal shiled for spreaders, 52, 5mm (1 piece) (supplied with insulating plate) | 3P | LV432595 |
| | | 4P | LV432596 |
| | 2 insulating screens (70 mm pitch) | 3P | LV432578 |
| | | 4P | LV432579 |

## Rotary handles

| Description | Reference |
|---|---|
| Direct rotary handle - With standard black handle | LV432597 |
| Standard extended rotary handle | LV432598 |

# 09. Easy TeSys motor control and protection

# Easy TeSys 3-pole contactors from 6 to 630 A

## Easy TeSys Control - 3-pole contactors

| Size | | 1 | | | | | 2 | | 3 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rated operational current AC-3 (A)** *(1)* | | 6 | 9 | 12 | 18 | 25 | 32 | 38 | 40 | 50 | 65 |
| **Rated operational current AC-3e** | | 6 | 9 | 12 | 18 | 25 | 32 | 38 | 40 | 50 | 65 |
| **Rated operational current AC-1 (A)** *(2)* | | 20 | 25 | | 32 | 36 | 50 | | 60 | 70 | 80 |
| **Rated operational power in AC-3 (kW)** | 220/230 V | 1.1 | 2.2 | 3 | 4 | 5.5 | 7.5 | 9 | 11 | 15 | 18.5 |
| | 380/400 V | 2.2 | 4 | 5.5 | 7.5 | 11 | 15 | 18.5 | 18.5 | 22 | 30 |
| | 415/440 V | 2.2 | 4 | 5.5 | 9 | 11 | 15 | 18.5 | 22 | 25/30 | 37 |
| | 500 V | 3 | 5.5 | 7.5 | 10 | 15 | 18.5 | 18.5 | 22 | 30 | 37 |
| | 660/690 V | 3 | 5.5 | 7.5 | 10 | 15 | 18.5 | 18.5 | 30 | 33 | 37 |
| **Width (mm)** | | 45 | | | | 45.5 | 56 | | 75 | | |
| **Coil rated operating voltage** | | 24...440 V AC; 24 V DC | | | | | | | | | |
| **Auxiliary built in contact** | | 1 NO or 1 NC | | | | | | | 1 NO + 1 NC | | |
| **Reference** | | **LC1E06** | **LC1E09** | **LC1E12** | **LC1E18** | **LC1E25** | **LC1E32** | **LC1E38** | **LC1E40** | **LC1E50** | **LC1E65** |

| Size | | 4 | | 5 | | 6 | | 7 | | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Rated operational current AC-3 (A)** *(1)* | | 80 | 95 | 120 | 160 | 200 | 250 | 300 | 400 | 500 | 630 |
| **Rated operational current AC-3e** | | 80 | 95 | 96 | 100 | 175 | 190 | 265 | 330 | 400 | 500 |
| **Rated operational current AC-1 (A)** *(2)* | | 110 | 120 | 150 | 200 | 250 | 300 | 320 | 500 | 700 | 1000 |
| **Rated operational power in AC-3 (kW)** | 220/230 V | 22 | 25 | 37 | 45 | 55 | 75 | 90 | 110 | 147 | 185 |
| | 380/400 V | 37 | 45 | 55 | 75 | 90 | 132 | 160 | 200 | 250 | 335 |
| | 415/440 V | 45 | 45 | 59 | 80 | 100 | 140 | 160/185 | 220/250 | 280/295 | 375/400 |
| | 500 V | 45 | 55 | 75 | 90 | 110 | 160 | 200 | 257 | 355 | 400 |
| | 660/690 V | 45 | 45 | 80 | 100 | 110 | 160 | 220 | 280 | 335 | 450 |
| **Width (mm)** | | 85 | | 120 | | 168.5 | | 213 | | 233 | 309 |
| **Coil rated operating voltage** | | 24...440 V AC;24 V DC | | | | | | | 24...440 V AC | | |
| **Auxiliary built in contact** | | 1 NO + 1 NC | | | | – | | | | | |
| **Reference** | | **LC1E80** | **LC1E95** | **LC1E120** | **LC1E160** | **LC1E200** | **LC1E250** | **LC1E300** | **LC1E400** | **LC1E500** | **LC1E360** | **LC1E630** |

*(1) Class AC-3: squirrel-cage motors with breaking taking place with the motor running.*
*(2) Class AC-1: AC loads with cos φ at least equal to 0.95 (resistive load, heating, distribution, etc.).*


*Find more details and other references in the*
*EasyTesys catalog*

# Commercial reference numbering system

## EasyTeSys 3-pole contactors - Commercial reference numbering system

**LC1E ●●● ●●● ● ●**

| Frequency | Code |
|---|---|
| 50 Hz | 5 |
| 60 Hz | 6 |
| 50/60 Hz | 7 |
| DC | D |

| Coil voltage *(1)* | Code |
|---|---|
| 24 V | B |
| 48 V | E |
| 110 V | F |
| 220 V | M |
| 230 V | P |
| 240 V | U |
| 380 V | Q |
| 400 V | V |
| 415 V | N |
| 440 V | R |

| Rated operation current (AC-3/AC-3e) | Auxiliary contact configuration | Code |
|---|---|---|
| EasyTeSys 3-pole | | |
| 06...38 | 1NO (or 1 NC) | 10 (or 01) |
| 40...160 | 1NO+1NC | none |
| 200...630 | No auxiliary contact | none |

| Rated operation current (AC-3/AC-3e) | Code |
|---|---|
| EasyTeSys 3-pole | |
| 06...630 | 06...630 |

| Type | Designation |
|---|---|
| Contactor | Easy TeSys |

**Contactor: how to determine the full commercial reference ?**
Example 1: you need a 32 A contactor, 1 NC auxiliary contact, 24 V - 50 Hz, coil ⇨ **LC1E3201B5**
Example 2: you need a 120 A contactor, 1 NC + NO auxiliary contact, 220 V - 50 Hz, coil ⇨ **LC1E120M5**

**Available coil voltage code for 3-pole contactors**

| | | 24 | 48 | 110 | 220 | 230 | 240 | 380 | 415 | 440 |
|---|---|---|---|---|---|---|---|---|---|---|
| **LC1E06-300** | 50 Hz | B5 | E5 | F5 | M5 | – | U5 | Q5 | N5 | R5 |
| | 60 Hz | B6 | – | F6 | M6 | – | – | Q6 | – | R6 |
| **LC1E06-95** | 50/60 Hz | B7 | E7 | F7 | M7 | P7 | – | Q7 | – | – |
| | DC | BD | – | – | – | – | – | – | – | – |
| **LC1E120-300** | 50/60 Hz | – | – | F7 | M7 | – | U7 | Q7 | – | – |
| **LC1E400-630** | 50/60 Hz | – | E7 | F7 | M7 | – | U7 | Q7 | N7 | R7 |

**Contactor: how to determine the full commercial reference ?**

**Example:** **LC1E 12 10 U 5**

| | |
|---|---|
| 5 | 50 Hz |
| Coil voltage code | 240 V |
| Auxiliary contact configuration *(2)* | 01 1NC 10 1NO |
| Rated operation current AC-3/AC-3e | 12 A |
| Contactor | Easy TeSys |

**ref. LC1E1210U5**

*(1) For 3-pole contactors, please refer the previous page.*
*(2) Example up to LC1E38 For details, please see above table.*

# Easy TeSys Control Contactors - 3 pole from 6 A to 630 A
# Power Characteristics

## Pole Characteristics

| Contactor type | | | | LC1E06 | LC1E09 | LC1E12 | LC1E18 | LC1E25 | LC1E32 | LC1E38 | LC1E40 | LC1E50 | LC1E65 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of poles | | | | 3 | | | | | | | | | |
| Rated operational current (Ie) (Ue ≤ 440 V) | In AC-3 (θ ≤ 55°C) | | A | 6 | 9 | 12 | 18 | 25 | 32 | 38 | 40 | 50 | 65 |
| | In Ac-3e(θ ≤ 55°C) | | | 6 | 9 | 12 | 18 | 25 | 32 | 38 | 40 | 50 | 65 |
| | In AC-1 (θ ≤ 55°C) | | | 20 | 25 | | 32 | 32 | 50 | | 60 | 70 | 80 |
| | In AC-1 (θ ≤ 40°C) | | | – | | | | | | | | | |
| Rated operational voltage (Ue) | Up to | | V | 690 | | | | | | | | | |
| Frequency limits of the operational current | | | Hz | 50/60 | | | | | | | | | |
| Conventional thermal current (Ith) | θ ≤ 55°C | | A | 20 | 25 | | 32 | 32 | 50 | | 60 | 70 | 80 |
| | θ ≤ 40°C | | | – | | | | | | | | | |
| Rated breaking capacity at 440 V | Conforming to IEC 60947 | | A | 51 | 76.5 | 102 | 153 | 212.5 | 272 | 323 | 340 | 425 | 552.5 |
| Rated making capacity at 440 V | Conforming to IEC 60947-4-1 | | A | 78 | 117 | 156 | 234 | 325 | 416 | 494 | 520 | 650 | 845 |
| Permissible short time rating No current flowing for preceding 15 minutes with θ ≤ 40°C | 10 s | | A | 80 | 105 | | 145 | 240 | 260 | 310 | 320 | 400 | 520 |
| | 1 min | | | 45 | 61 | | 84 | 120 | 138 | 150 | 165 | 208 | 260 |
| | 10 min | | | 20 | 30 | | 40 | 50 | 60 | | 72 | 84 | 110 |
| Maximum permissive current No current flowing for previous 60 minutes, at θ ≤ 40°C | For 10 s | | A | – | | | | | | | | | |
| Protection by fuses against short-circuits (U ≤ 690 V) | Without thermal overload relay gG fuse | Type 1 | A | 12 | 20 | 25 | 35 | 40 | 63 | | 80 | 100 | 125 |
| | With thermal overload relay | | | For corresponding aM or gG fuse ratings corresponding to the associated LRE● thermal overload relay | | | | | | | | | |
| Average impedance per pole | At Ith and 50 Hz | | mΩ | 2.5 | | | | 2.5 | | | 1.5 | | 1 |
| Power dissipation per pole for the above operational currents | AC-3 | | W | 0.09 | 0.20 | 0.36 | 0.81 | 1.6 | 2.0 | 2.9 | 2.4 | 3.8 | 4.2 |
| | AC-1 | | | 1.0 | 1.6 | | 2.6 | 3.2 | 5.0 | | 5.4 | 7.4 | 6.4 |
| Electrical durability | AC-3 (Ue ≤ 440 V) | | Million cycles | 1.4 | | | 1.2 | | 1 | 0.9 | | | |
| | AC-1 (Ue ≤ 440 V) | | | 0.15 | | 0.3 | | 0.35 | | | | | |
| Mechanical durability | | | | 10 | | | | | 8 | | 5 | | |

## Power Circuit Connections

| Contactor type | | | | LC1E06 | LC1E09 | LC1E12 | LC1E18 | LC1E25 | LC1E32 | LC1E38 | LC1E40 | LC1E50 | LC1E65 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connection maximum c.s.a. | | | | | | | | | | | | | |
| Flexible cable with cable end | 1 conductor | | $mm^2$ | 1...4 | | | | 1...6 | | | 2.5...25 | | |
| | 2 conductors | | | 1...2.5 | | | | 1...4 | | | 2.5...10 | | |
| Flexible cable without cable end | 1 conductor | | $mm^2$ | 1...4 | | | 1.5...6 | | 1.5...10 | | 2.5...25 | | |
| | 2 conductors | | | 1...4 | | | 1.5...6 | | 1.5...6 | | 2.5...16 | | |
| Solid cable without cable end | 1 conductor | | $mm^2$ | 1...4 | | | 1.5...6 | | 1.5...10 | | 2.5...25 | | |
| | 2 conductors | | | 1...4 | | | 1.5...6 | | 1.5...6 | | 2.5...16 | | |
| Cable with lug | | | mm | – | | | | | | | | | |
| Bar | Number of bars | | | – | | | | | | | | | |
| | Bar | mm x mm | | – | | | | | | | | | |
| Bolt diameter | 1 conductor | | mm | – | | | | | | | | | |
| Tightening torque with AC Coil | Power circuit connection | | N.m | 1.2 ~ 1.4 | | | | 1.7 ~ 2.0 | 1.85 ~ 2.15 | | 5 ~ 5.8 | | |
| Tightening torque with DC Coil | Power circuit connection | | N.m | 1.6 ~ 1.8 | | | | 1.6 ~ 1.8 | 2.4 ~ 2.7 | | 5 ~ 5.8 | | |
| Tool | | | | Philips N°2 or Pozidriv N°2 or Ø6mm flat | | | | | | | Ø8mm flat | | |

# Easy TeSys Control Contactors - 3 pole from 6 A to 630 A
# Power Characteristics

## Pole Characteristics

| Contactor type | | | | LC1E80 | LC1E95 | LC1E120 | LC1E160 | LC1E200 | LC1E250 | LC1E300 | LC1E400 | LC1E500 | LC1E630 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Number of poles | | | | 3 | | | | | | | | | |
| Rated operational current (Ie) (Ue ≤ 440 V) | In AC-3 (θ ≤ 55°C) | | A | 80 | 95 | 120 | 160 | 200 | 250 | 300 | 400 | 500 | 630 |
| | In Ac-3e(θ ≤ 55°C) | | | 80 | 95 | 96 | 100 | 175 | 190 | 265 | 330 | 400 | 500 |
| | In AC-1 (θ ≤ 55°C) | | | 110 | 120 | – | | | | | | | |
| | In AC-1 (θ ≤ 40°C) | | | | | 150 | 200 | 250 | 300 | 320 | 500 | 700 | 1000 |
| Rated operational voltage (Ue) | Up to | | V | 690 | | | | | | | | | |
| Frequency limits of the operational current | | | Hz | 50/60 | | | | | | | | | |
| Conventional thermal current (Ith) | θ ≤ 55°C | | A | 110 | 120 | – | | | | | | | |
| | θ ≤ 40°C | | | | | 150 | 200 | 250 | 300 | 320 | 500 | 700 | 1000 |
| Rated breaking capacity at 440 V | Conforming to IEC 60947 | | A | 680 | 807.5 | 960 | 1280 | 1600 | 2000 | 2400 | 3200 | 4000 | 5040 |
| Rated making capacity at 440 V | Conforming to IEC 60947-4-1 | | A | 960 | 1140 | 1200 | 1600 | 2000 | 2500 | 3000 | 4000 | 5000 | 6300 |
| Permissible short time rating No current flowing for preceding 15 minutes with θ ≤ 40°C | 10 s | | A | 640 | 800 | 950 | 1200 | 1500 | 1800 | 2650 | 3600 | 4200 | 5050 |
| | 1 min | | | 320 | 400 | 550 | 580 | 740 | 850 | 1300 | 1700 | 2400 | 3400 |
| | 10 min | | | 135 | | 250 | 250 | 400 | 440 | 750 | 1000 | 1200 | 1600 |
| Maximum permissive current No current flowing for previous 60 minutes, at θ ≤ 40°C | For 10 s | | A | – | | 1100 | 1400 | 1500 | 1800 | 2650 | 3600 | 4200 | 5050 |
| Protection by fuses against short-circuits (U ≤ 690 V) | Without thermal overload relay gG fuse | Type 1 | A | 160 | | 250 | 315 | | | 500 | 630 | 800 | 800 |
| | With thermal overload relay | | | For corresponding aM or gG fuse ratings corresponding to the associated LRE● thermal overload relay | | | | | | | | | |
| Average impedance per pole | At Ith and 50 Hz | | mΩ | 0.8 | | 0.6 | | 0.33 | 0.32 | 0.3 | 0.26 | 0.18 | 0.12 |
| Power dissipation per pole for the above operational currents | AC-3 | | W | 5.1 | 7.2 | 8.6 | 15 | 13 | 20 | 27 | 42 | 45 | 48 |
| | AC-1 | | | 9.7 | 12 | 14 | 24 | 21 | 29 | 31 | 65 | 88 | 120 |
| Electrical durability | AC-3 (Ue ≤ 440 V) | | Million cycles | | | 0.8 | | 0.5 | 0.7 | 0.5 | 0.6 | 0.6 | 0.6 |
| | AC-1 (Ue ≤ 440 V) | | | | | 0.25 | | 0.2 | | 0.4 | 0.25 | 0.25 | 0.2 |
| Mechanical durability | | | | 3 | | 4 | | 5 | | | 4 | 4 | 4 |

## Power Circuit Connections

| Contactor type | | | | LC1E80 | LC1E95 | LC1E120 | LC1E160 | LC1E200 | LC1E250 | LC1E300 | LC1E400 | LC1E500 | LC1E630 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Connection maximum c.s.a. | | | | | | | | | | | | | |
| Flexible cable with cable end | 1 conductor | | $mm^2$ | 4...50 | | 10...120 | | – | | | | | |
| | 2 conductors | | | 4...16 | | 10...120 + 10...50 | | – | | | | | |
| Flexible cable without cable end | 1 conductor | | $mm^2$ | 4...50 | | 10...120 | | – | | | | | |
| | 2 conductors | | | 4...25 | | 10...120 + 10...50 | | – | | | | | |
| Solid cable without cable end | 1 conductor | | $mm^2$ | 4...50 | | 10...120 | | – | | | | | |
| | 2 conductors | | | 4...25 | | 10...120 + 10...50 | | – | | | | | |
| Cable with lug | | | mm | | | | | 150 | 185 | 240 | 2 x 150 | 2 x 240 | – |
| Bar | Number of bars | | | | | | | 2 | | | | | |
| | Bar | mm x mm | | | | | | 3 x 25 | 4 x 32 | 5 x 30 | 30 x 5 | 40 x 5 | 60 x 5 |
| Bolt diameter | 1 conductor | | mm | | | | | M8 | M10 | | | | M12 |
| Tightening torque with AC Coil | Power circuit connection | | N.m | 12 ~ 13.5 | | 12 ~ 13.5 | | 18 ~ 21 | 35 ~ 37 | | | | 58 ~ 60 |
| Tightening torque with DC Coil | Power circuit connection | | N.m | 12 ~ 13.5 | | / | | / | / | | | | / |
| Tool | | | | Allen key n°4 | | Allen key n°4 | | Wrench | | | | | |



## Accessories for Motor Reverse Assembly - 3-pole Accessories for LC1E Contactor with AC supply

**Contactors with screw clamp terminals**

| Using 2 identical contactors | Set of power connections 1 | | Mechanical interlock 2 | |
|---|---|---|---|---|
| | Reference | Weight kg | Reference | Weight kg |
| **Mechanical interlock** | | | | |
| LC1E06...E12 | **LAEP1** | 0.020 | **LAEM1** | 0.030 |
| LC1E18/E25 | **LAEP12** | 0.026 | **LAEM1** | 0.030 |
| LC1E32/E38 | **LAEP2** | 0.040 | **LAEM1** | 0.030 |
| LC1E40...E65 | **LAEP3** | 0.230 | **LAEM1** | 0.030 |
| LC1E80/E95 | **LAEP4** | 0.465 | **LAEM4** | 0.095 |
| LC1E120/E160 | – (DIY) (1) | | **LAEM5** | 0.300 |
| LC1E200/E250 | – (DIY) (1) | | **LAEM6** | 0.110 |
| LC1E300 | – (DIY) (1) | | **LAEM7** | 0.250 |
| LC1E400 | – (DIY) (1) | | **LAEM7** | 0.250 |
| LC1E500 | – (DIY) (1) | | **LAEM7** | 0.250 |
| LC1E630 | – (DIY) (1) | | **LAEM8** | 0.270 |

***(1)*** *DIY : Do It Yourself.*


## RC circuits (Resistor-Capacitor) 3

| Mounting | For use with contactor | | Reference | Weight |
|---|---|---|---|---|
| | Rating | Type | | |
| | | V~ | | kg |
| Screw mounting(1) | LC1E06...E95 | 24...48 | **LAERCE** | 0.025 |
| | | 50...127 | **LAERCG** | 0.025 |
| | | 110...240 | **LAERCU** | 0.025 |
| | | 380...415 | **LAERCN** | 0.025 |

- Effective protection for circuits highly sensitive to high frequency interference and transcient generated when the contactor coil is switched off. For use only in cases where the voltage is virtually sinusoidal, i.e. less than 5 % total harmonic distortion.
- Voltage limited to 3 Uc max. and oscillating frequency limited to 400 Hz max.
- Slight increase in drop-out time (1.2 to 2 times the normal time).

# Easy TeSys contactors - Accessories for LC1E contactor



| Instantaneous auxiliary contact blocks for connection by screw lamps terminals (For use in normal operating environment) | | | | |
|---|---|---|---|---|
| **Clip-on mounting** | Front | | | |
| **Number of contacts per block** | 1 NO / 1 NC | 2 NO | 2 NC | 2 NO / 2 NC |
| **Reference** 1 | **LAEN11** | **LAEN20** | **LAEN02** | **LAEN22** |

| Time delay auxiliary contact blocks for connection by screw clamp terminals 8 A - 690 V | |
|---|---|
| **Clip-on mounting** | Front |
| **Number of contacts per block** | 1 NO / 1 NC |
| **Time delay type** | On-delay |
| **Setting range** | 1...30 s |
| **Reference** 2 | **LAETSD** *(For use only LC1E25 to LC1E630)* |

| Instantaneous and time delay contact characteristics | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Contact block type** | | **LAEN11, 20, 02, 22** | | | **LAETSD** | | |
| **Number of contacts** | | 2 or 4 | | | 2 | | |
| **Rated operational voltage (Ue)** | Up to **(V)** | 690 | | | 690 | | |
| **Rated insulation voltage (Ui)** | Conforming to IEC 60947-5-1 **(V)** | 690 | | | 690 | | |
| **Conventional thermal current (Ith)** | For ambient temperature θ ≤ 60 °C **(A)** | 10 | | | 10 | | |
| **Minimum switching capacity** | U min **(V)** | 17 | | | 17 | | |
| | I min **(mA)** | 5 | | | 5 | | |
| **Short-circuit protection** | Conforming to IEC 60947-5-1 **(A)** | 10 | | | 10 | | |
| **Rated making capacity** | Conforming to IEC 60947-5-1 **(Irms)** | ∿ 140 | | | ∿ 140 | | |
| **Short-time rating** | Permissible for 1 s **(A)** | 100 | | | 100 | | |
| | Permissible for 500 ms **(A)** | 120 | | | 120 | | |
| | Permissible for 100 ms **(A)** | 140 | | | 140 | | |
| **Insulation resistance** | mΩ | > 10 | | | > 10 | | |
| **Non-overlap time** | Guaranteed between NC and NO contacts **(ms)** | 1.5 (on energisation and on de-energisation) | | | | | |
| **Overlap time** | Guaranteed between LAE N22 NC and NO contacts **(ms)** | – | | | – | | |
| **Time delay** | Ambient air temperature for operation **(°C)** | – | | | -20...+70 | | |
| | Repeat accuracy **(°C)** | – | | | ±2 % | | |
| | Drift up to 0.5 million operating cycles **(°C)** | – | | | +15 % | | |
| | Drift depending on ambient air temperature **(°C)** | – | | | 0.25 % per °C | | |
| **Mechanical durability** | In millions of operating cycles | 10 | | | 4 | | |
| **Rated operational power of contacts (Conforming to IEC 60947-5-1)** | a.c. supply categories AC14/15 **(V)** | 24 | 48 | 115 | 230 | 400 | 440 |
| | 1 million operating cycles **(VA)** | 60 | 120 | 280 | 560 | 960 | 1050 |
| | 3 million operating cycles **(VA)** | 16 | 32 | 80 | 160 | 280 | 300 |
| | 10 million operating cycles **(VA)** | 4 | 8 | 20 | 4 | 70 | 80 |

| Environment | | |
|---|---|---|
| **Conforming to standard** | | IEC 60947-5-1 |
| **Product certifications** | | EAC |
| **Protective treatment** | Conforming to IEC 60068 | "TH" |
| **Degree of protection** | Conforming to IEC 60529 | IP2X |
| **Ambiant air temperature** | Storage **(°C)** | -60...+80 |
| | Operation **(°C)** | -5...+55 |
| | Permissible for operation at Uc **(°C)** | -20...+70 |
| **Maximum operating altitude** | Without derating **(m)** | 3000 |
| **Connection by cable** | Philips N° 2 and Ø 6 mm. Flexible or solid cable with or without cable end **(mm²)** | Min: 1 x 1<br>Max: 2 x 2.5 |
| **Tightening torque** | **(N.m)** | 1.2 |

# Easy TeSys Protect Thermal overload relays

## Easy TeSys Protect Thermal overload relays - Compatible with Contactor (size 1 & 2)

| Reference | Possible Imax Calibration | Compatible with Contactor (size 1 & 2) Com. Ref. | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | LC1E06 | LC1E09 | LC1E12 | LC1E18 | LC1E25 | LC1E32 | LC1E38 |
| **LRE01** | 0.10…0.16 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE02** | 0.16…0.25 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE03** | 0.25…0.40 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE04** | 0.40…0.63 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE05** | 0.63…1 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE06** | 1…1.6 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE07** | 1.6…2.5 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE08** | 2.5…4 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE10** | 4…6 A | ■ | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE12** | 5.5…8 A | | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE14** | 7…10 A | | ■ | ■ | ■ | ■ | ■ | ■ |
| **LRE16** | 9 …13 A | | | ■ | ■ | ■ | ■ | ■ |
| **LRE21** | 12…18 A | | | | ■ | ■ | ■ | ■ |
| **LRE22** | 16…24 A | | | | | ■ | ■ | ■ |
| **LRE32** | 23…32 A | | | | | ■ | ■ | ■ |
| **LRE35** | 30…38 A | | | | | | | ■ |

## Easy TeSys Protect Thermal overload relays - Compatible with Contactor (size 3 & 4)

| Reference | Possible Imax Calibration | Compatible with Contactor (size 3 & 4) Com. Ref. | | | | |
|---|---|---|---|---|---|---|
| | | LC1E40 | LC1E50 | LC1E65 | LC1E80 | LC1E95 |
| **LRE322** | 17…25 A | ■ | ■ | ■ | ■ | ■ |
| **LRE353** | 23…32 A | ■ | ■ | ■ | ■ | ■ |
| **LRE355** | 30…40 A | ■ | ■ | ■ | ■ | ■ |
| **LRE357** | 37…50 A | | ■ | ■ | ■ | ■ |
| **LRE359** | 48…65 A | | | ■ | ■ | ■ |
| **LRE361** | 55…70 A | | | | ■ | ■ |
| **LRE363** | 63…80 A | | | | ■ | ■ |
| **LRE365** | 80…104 A | | | | | ■ |

## Easy TeSys Protect Thermal overload relays - Compatible with Contactor (size 5, 6, 7, 8 and 9)

| Reference | Possible Imax Calibration | Compatible with Contactor (size 5, 6, 7, 8, and 9 ) Com. Ref. | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | LC1E120 | LC1E160 | LC1E200 | LC1E250 | LC1E300 | LC1E400 | LC1E500 | LC1E630 |
| **LRE480** | 51…81A | ■ | ■ | □ | □ | □ | □ | □ | □ |
| **LRE481** | 62…99A | ■ | ■ | □ | □ | □ | □ | □ | □ |
| **LRE482** | 84…135A | ■ | ■ | □ | □ | □ | □ | □ | □ |
| **LRE483** | 124…198A | | □ | ■ | □ | □ | □ | □ | □ |
| **LRE484** | 146…234A | | | □ | ■ | ■ | ■ | □ | □ |
| **LRE485** | 174…279A | | | □ | ■ | ■ | ■ | □ | □ |
| **LRE486** | 208…333A | | | | ■ | ■ | ■ | □ | □ |
| **LRE487** | 259…414A | | | | | ■ | ■ | □ | □ |
| **LRE488** | 321…513A | | | | | | □ | ■ | □ |
| **LRE489** | 394…630A | | | | | | | □ | ■ |

***Note:***
■ *Means the relay can match with contactor both in electrical and mechanical.*
□ *Means the relay can match with contactor only in electrical (can not directly mounting).*

**Common characteristics**
**> Class: 10 A.**
**> Operating voltage: max. 690 V AC.**

## Easy TeSys 3-pole contactors

### Power circuit characteristics

| Relay type | Reference | | LRE 01...21 | LRE 22...35 | LRE 322...365 | LRE 480…482 | LRE 483 | LRE 484 | LRE 485…487 | LRE 488 | LRE 489 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Size | | 1 | | 2 | 3 | | | | 4 | |
| **Tripping class** | Conforming to IEC 60947-4-1 | | 10 A | | | | | | | | |
| **Rated insulation voltage** | Conforming to IEC 60947-4-1 | V | 690 | | | | | | | | |
| **Rated impulse withstand voltage (Uimp)** | | kV | 6 | | | | | | | | |
| **Frequency limits** | Of the operating current | Hz | 50...60 | | | | | | | | |
| **Setting range** | Depending on model | A | 0.1...18 | 16...38 | 17...104 | 51...630 | | | | | |
| **Power Circuit Connections** | | | | | | | | | | | |
| **Connection by screw clamp terminals** | | | Minimum/maximum c.s.a. | | | | | | | | |
| | Flexible cable without cable end 1 conductor | mm² | 1.5...6 | 2.5...10 | 4...35 | – | | | | | |
| | Flexible cable with cable end 1 conductor | | 1...4 | 1.5...6 | 4...35 | – | | | | | |
| | Solid cable without cable end 1 conductor | | 1...6 | 2.5...10 | 4...35 | – | | | | | |
| | Tightening torque | N.m | 1.7 | 2.5 | 9 | – | | | | | |
| **Connection by bars or lugs** | | | | | | | | | | | |
| Pitch | Without spreaders | mm | – | | | 34.8 | 40 | 48 | 48 | 55 | 80 |
| Bars or cables with lugs | Cross section | | – | | | 3X18 | 3X20 | 3X25 | 4X25 | 5x30 | 6X40 |
| Screws | Type | | – | | | M8 | M8 | M10 | M10 | M10 | M12 |
| | Tightening torque | N.m | – | | | 27.5 | 27.5 | 35 | 35 | 35 | 58 |
| **Auxiliary Contact Characteristics** | | | | | | | | | | | |
| **Conventional thermal current** | | A | 5 | | | | | | | | |
| **Max. sealed consumption of the operating coils of controlled contactors (Occasional operating cycles of contact 95-96)** | **a.c. supply** | V | 110 | 120 | 220 | 240 | 380 | 480 | 500 | 600 | |
| | | A | 3.27 | 3 | 1.63 | 1.5 | 0.95 | 0.75 | 0.72 | 0.12 | |
| **Protection against short-circuits** | **By gG, maximum rating or by GB2** | A | 5 | | | | | | | | |
| **Connection by screw clamp terminals** | | | Minimum/maximum c.s.a. | | | | | | | | |
| | Flexible cable without cable end 1 conductor | mm² | 2 x 1...2.5 | | | | | | | | |
| | Flexible cable with cable end 1 conductor | | 2 x 1...2.5 | | | | | | | | |
| | Solid cable without cable end 1 conductor | | 2 x 1...2.5 | | | | | | | | |
| | Tightening torque | N.m | 1.7 | | | | | | | | |
| **Environment** | | | | | | | | | | | |
| **Conforming to standard** | | | IEC 60947-4-1, IEC 60947-5-1 | | | | | | | | |
| **Product certifications** | | | EAC | | | | | | | | |
| **Degree of protection** | Conforming to IEC 60529 | | IP2X | | | IP00 | | | | | |
| **Protective treatment** | Conforming to IEC 60068 | | "TH" | | | | | | | | |
| **Ambiant air temperature** | Storage | °C | -60...+80 | | | | | | | | |
| | Normal operation without derating (IEC 60947-4-1) | | -20...+60 | | | | | | | | |
| | Minimum/maximum operating temperature (with derating) *(1)* | | -20...+70 | | | | | | | | |
| **Operating positions without derating** | In relation to normal vertical mounting plane | | Any position | | | | | | | | |
| **Flame resistance** | Conforming to IEC 60068-2-1 | °C | 850 | | | | | | | | |
| **Shock resistance** | Permissive acceleration conforming to IEC 60068-2-7 | | 6 gn - 11 ms | | | | | | | | |
| **Vibration resistance** | Permissive acceleration conforming to IEC 60068-2-6 | | 3 gn | | | | | | | | |
| **Dielectric strenght at 50 Hz** | Conforming to IEC 60255-5 | kV | 6 | | | | | | | | |
| **Surge withstand** | Conforming to IEC 60801-5 | | 6 | | | | | | | | |
| **Operating Characteristics** | | | | | | | | | | | |
| **Temperature compensation** | | °C | -20...+60 | | | | | | | | |
| **Tripping threshold** | Conforming to IEC 60947-4-1 | A | 1.14 ± 0.06 Ir | | | | | | | | |
| **Sensitivity to phase failure** | Conforming to IEC 60947-4-1 | | Tripping current 130 % of Ir on two phase, the last one at 0 | | | | | | | | |

*(1) Contact your regional sales.*

# Easy TeSys Protect Thermal overload relays



## Easy TeSys thermal overload relays - 3-pole thermal overload relays

### Differential Thermal Overload Relays for Use with Fuses or Magnetic Circuit-breakers GV2 L and GV3 L

- Compensated relays with manual or automatic reset,
- with relay trip indicator,
- for a.c.

| Relay setting range (A) | Fuses to be used with selected relay | | For use with contactor LC1 | Reference | Weight kg |
|---|---|---|---|---|---|
| | aM (A) | gG (A) | | | |
| Class 10 A *(1)* for connection by screw clamp terminals | | | | | |
| 0.10…0.16 | 0.25 | 2 | E06…E38 | **LRE01** | 0.130 |
| 0.16…0.25 | 0.5 | 2 | E06…E38 | **LRE02** | 0.130 |
| 0.25…0.40 | 1 | 2 | E06…E38 | **LRE03** | 0.130 |
| 0.40…0.63 | 1 | 2 | E06…E38 | **LRE04** | 0.130 |
| 0.63…1 | 2 | 4 | E06…E38 | **LRE05** | 0.130 |
| 1…1.6 | 2 | 4 | E06…E38 | **LRE06** | 0.130 |
| 1.6…2.5 | 4 | 6 | E06…E38 | **LRE07** | 0.130 |
| 2.5…4 | 6 | 10 | E06…E38 | **LRE08** | 0.130 |
| 4…6 | 8 | 16 | E06…E38 | **LRE10** | 0.130 |
| 5.5…8 | 12 | 20 | E09…E38 | **LRE12** | 0.130 |
| 7…10 | 12 | 20 | E09…E38 | **LRE14** | 0.130 |
| 9…13 | 16 | 25 | E12…E38 | **LRE16** | 0.130 |
| 12…18 | 20 | 35 | E18…E38 | **LRE21** | 0.130 |
| 16…24 | 25 | 50 | E25…E38 | **LRE22** | 0.130 |
| 23…32 | 40 | 63 | E25…E38 | **LRE32** | 0.130 |
| 30…38 | 40 | 80 | E38 | **LRE35** | 0.130 |
| 17...25 | 25 | 50 | E40…E95 | **LRE322** | 0.470 |
| 23...32 | 40 | 63 | E40…E95 | **LRE353** | 0.470 |
| 30...40 | 40 | 100 | E40…E95 | **LRE355** | 0.470 |
| 37...50 | 63 | 100 | E50…E95 | **LRE357** | 0.460 |
| 48...65 | 63 | 100 | E65…E95 | **LRE359** | 0.460 |
| 55...70 | 80 | 125 | E80…E95 | **LRE361** | 0.480 |
| 63...80 | 80 | 125 | E80…E95 | **LRE363** | 0.480 |
| 80...104 | 80 | 160 | E95 | **LRE365** | 0.520 |
| Class 10 A *(1)* directly connected by connector | | | | | |
| 51...81 | 100 | 125 | E120...E160 | **LRE480** | 2.2 |
| 62...99 | 125 | 160 | E120...E160 | **LRE481** | 2.2 |
| 84...135 | 160 | 200 | E120...E160 | **LRE482** | 2.2 |
| 124...198 | 200 | 250 | E200 | **LRE483** | 2.1 |
| 146...234 | 250 | 315 | E250...E400 | **LRE484** | 2.2 |
| 174...279 | 315 | 315 | E250...E400 | **LRE485** | 2.2 |
| 208...333 | 400 | 400 | E250...E400 | **LRE486** | 2.2 |
| 259…414 | 400 | 500 | E300...E400 | **LRE487** | 2.4 |
| 321…513 | 500 | 800 | E500 | **LRE488** | 3.2 |
| 394…630 | 630 | 1000 | E630 | **LRE489** | 3.9 |

*(1) Standard IEC 60947-4-1 specifies a tripping time for 7.2 times the setting current $I_R$ : class 10 A: between 2 and 10 seconds.*

# Easy TeSys Power - Motor circuit-breaker

## Environment

| | | | | |
|---|---|---|---|---|
| **Circuit-breaker type** | | | **GZ1** | |
| **Conforming to standards** | | | IEC 60947-2, IEC 60947-4 | |
| **Protective treatment** | Conforming to IEC 60068-2-30 | | IEC60068-2-30 Test Db, Variant 2 | |
| **Degree of protection** | | | In **GV2 MC01** enclosure: IP 41<br>In **GV2 MC02** enclosure: IP 55 | |
| **Ambient air temperature** | Storage | **°C** | - 40…+ 80 | |
| | Operation | **°C** | - 20…+ 60 | |
| **Flame resistance** | Conforming to IEC 60695-2-1 | **°C** | 960 | |
| **Maximum operating altitude** | | **m** | 2000 | |
| **Cabling** Number of conductors and c.s.a. | | | **Min.** | **Max.** |
| | Solid cable | **mm²** | 2 x 1 | 2 x 6 |
| | Flexible cable without cable end | **mm²** | 2 x 1.5 | 2 x 6 |
| | Flexible cable with cable end | **mm²** | 2 x 1 | 2 x 4 |
| **Suitable for isolation** | Conforming to IEC 60947-1 § 7-1-6 | | Yes | |
| **Tightening torque** | | **N.m** | 1.7 | |
| **Rated operational voltage** (Ue) | Conforming to IEC 60947-2 | **V** | 690 | |
| **Rated insulation voltage** (Ui) | Conforming to IEC 60947-2 | **V** | 690 | |
| **Rated operational frequency** | Conforming to IEC 60947-2 | **Hz** | 50/60 | |
| **Rated impulse withstand voltage** (U imp) | Conforming to IEC 60947-2 | **kV** | 6 | |
| **Total power dissipated per pole** | | **W** | 2.5 | |
| **Mechanical durability** (C.O.: closing, opening) | | **C.O.** | 100 000 | |
| **Electrical durability** | For AC-3 duty | **C.O.** | 100 000 | |
| **Duty class** (maximum operating rate) | | **C.O./h** | 25 | |

## Breaking Capacity

| **Circuit-breaker type** | | | | **GZ1** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | **01 to 06** | **07** | **08** | **10** | **14** | **16** | **20** | **21** | **22 to 32** |
| Rating | | | **A** | **0.1 to 1.6** | **2,5** | **4** | **6.3** | **10** | **14** | **18** | **23** | **25 to 32** |
| **Breaking capacity** conforming to IEC 60947-2 | 230/240 V | Icu | **kA** | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 30 | 30 |
| | | Ics % *(1)* | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | 100 | 100 |
| | 400/415 V | Icu | **kA** | ■ | ■ | ■ | ■ | ■ | 10 | 10 | 10 | 10 |
| | | Ics % *(1)* | | ■ | ■ | ■ | ■ | ■ | 50 | 50 | 40 | 40 |
| | 440 V | Icu | **kA** | ■ | ■ | ■ | 30 | 10 | 6 | 6 | 5 | 5 |
| | | Ics % *(1)* | | ■ | ■ | ■ | 100 | 100 | 50 | 50 | 50 | 50 |
| | 500 V | Icu | **kA** | ■ | ■ | ■ | 30 | 8 | 5 | 5 | 3 | 3 |
| | | Ics % *(1)* | | ■ | ■ | ■ | 100 | 100 | 75 | 75 | 75 | 75 |
| | 690 V | Icu | **kA** | ■ | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | | Ics % *(1)* | | ■ | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |

■ > 100 kA. *(1)* As % of Icu.

## Motor Circuit-breakers - Magnetic only

**Pushbutton control**

| Standard power ratings of 3-phase motors 50/60 Hz in category AC-3/AC-3e | | | | | Magnetic protection rating | Magnetic tripping current Id ± 20 % | Use in association with thermal overload relays | Reference | Weight |
|---|---|---|---|---|---|---|---|---|---|
| **230V** | **400V** | **440V** | **500V** | **690V** | | | | | |
| **kW** | **kW** | **kW** | **kW** | **kW** | **A** | **A** | **(Class 10A)** | | **kg** |
| – | – | – | – | – | 0.40 | 5.8 | LRE03 | **GZ1LE03** | 0.250 |
| – | – | – | – | 0.37 | 0.63 | 9.3 | LRE04 | **GZ1LE04** | 0.250 |
| – | – | – | 0.37 | 0.55 | 1 | 15.1 | LRE05 | **GZ1LE05** | 0.250 |
| – | 0.37 | 0.55 | 0.75 | 1.1 | 1.6 | 26.2 | LRE06 | **GZ1LE06** | 0.250 |
| 0.37 | 0.75 | 1.1 | 1.1 | 1.5 | 2.5 | 39 | LRE07 | **GZ1LE07** | 0.250 |
| 0.75 | 1.5 | 1.5 | 2.2 | 3 | 4 | 74 | LRE08 | **GZ1LE08** | 0.250 |
| 1.1 | 2.2 | 3 | 3.7 | 4 | 6.3 | 91 | LRE10 | **GZ1LE10** | 0.250 |
| 2.2 | 4 | 4 | 5.5 | 7.5 | 10 | 149 | LRE14 | **GZ1LE14** | 0.250 |
| – | 5.5 | 5.5 | 9 | 11 | 14 | 253.4 | LRE16 | **GZ1LE16** | 0.250 |
| 4 | 7.5 | 9 | 10 | 15 | 18 | 341 | LRE21 | **GZ1LE20** | 0.250 |
| 5.5 | 11 | 11 | 15 | 22 | 25 | 388.3 | LRE22 | **GZ1LE22** | 0.250 |
| 7.5 | 15 | 15 | 18.5 | 22 | 32 | 538 | LRE32 | **GZ1LE32** | 0.250 |

## Motor Circuit-breakers - Thermal-magnetic

**Pushbutton control**

| Standard power ratings of 3-phase motors 50/60 Hz in category AC-3/AC-3e | | | | | Setting range of thermal trips | Magnetic tripping current Id ± 20 % | Reference | Weight |
|---|---|---|---|---|---|---|---|---|
| **230V** | **400V** | **440V** | **500V** | **690V** | | | | |
| **kW** | **kW** | **kW** | **kW** | **kW** | **A** | **A** | | **kg** |
| – | – | – | – | – | 0.1…0.16 | 1.9 | **GZ1E01** | 0.260 |
| – | – | – | – | – | 0.16…0.25 | 3.1 | **GZ1E02** | 0.260 |
| – | – | – | – | – | 0.25…0.40 | 5.8 | **GZ1E03** | 0.260 |
| – | – | – | – | 0.37 | 0.40…0.63 | 9.3 | **GZ1E04** | 0.260 |
| – | – | – | 0.37 | 0.55 | 0.63…1 | 15.1 | **GZ1E05** | 0.260 |
| – | 0.37 | 0.55 | 0.75 | 1.1 | 1…1.6 | 26.2 | **GZ1E06** | 0.260 |
| 0.37 | 0.75 | 1.1 | 1.1 | 1.5 | 1.6…2.5 | 39 | **GZ1E07** | 0.260 |
| 0.75 | 1.5 | 1.5 | 2.2 | 3 | 2.5…4 | 74 | **GZ1E08** | 0.260 |
| 1.1 | 2.2 | 3 | 3.7 | 4 | 4…6.3 | 91 | **GZ1E10** | 0.260 |
| 2.2 | 4 | 4 | 5.5 | 7.5 | 6…10 | 149 | **GZ1E14** | 0.260 |
| – | 5.5 | 5.5 | 9 | 11 | 9…14 | 253.4 | **GZ1E16** | 0.260 |
| 4 | 7.5 | 9 | 10 | 15 | 13…18 | 341 | **GZ1E20** | 0.260 |
| 5.5 | 9 | 11 | 11 | 18.5 | 17…23 | 341 | **GZ1E21** | 0.260 |
| 5.5 | 11 | 11 | 15 | 22 | 20…25 | 388.3 | **GZ1E22** | 0.260 |
| 7.5 | 15 | 15 | 18.5 | 22 | 24…32 | 538 | **GZ1E32** | 0.260 |

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January 2025 - V6.0

DIA1ED2190901EN