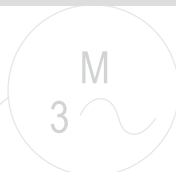
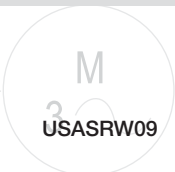
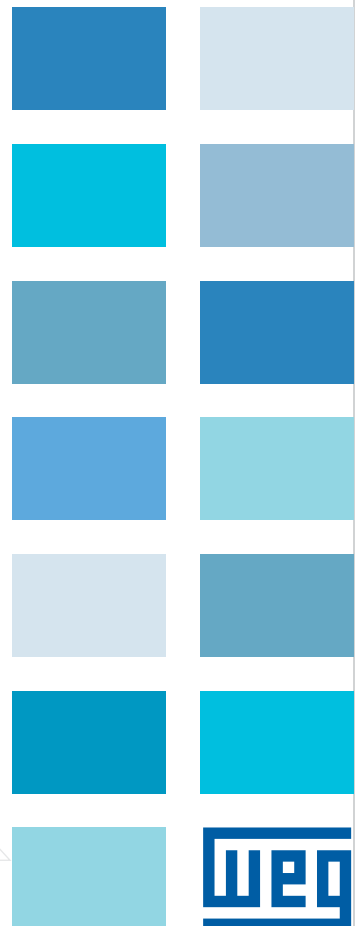


# SRW01

## Smart Relay

- Modular concept
- Network communication
- Built in motor protection
- State of the art tech



## Smart Relays - SRW01 Series

The SRW01 is a low-voltage electric motor management system with state-of-the-art technology and network communication capabilities. Additionally, its modular concept allows to be used in various applications.



### Versatility

The SRW01 supports the following communication networks protocols: DeviceNet, Modbus-RTU, and Profibus-DP. The communication modules can be easily exchanged due to plug-and-play capabilities. A HMI also can be used for quick system monitoring and relay parameterization. Additionally, the SRW01 provides a USB port for relay monitoring and programming through PC when using WLP software. The SRW01 includes a thermal memory circuit in order to maintain a motor thermal image, even if power supply is removed.

### Flexibility

The SRW01 modular concept allows easy functionality expansions. The control unit can also be mechanically assembled with the control measurement unit or separately (up to 2 meters), allowing system integration versatility.

The relay offers pre-programmed operating modes that perform various types of standard starting or monitoring conditions. Its friendly parameterization mode allows users to program the relay according to their needs.

## Modular Design

The SRW01 incorporates a main control unit (SRW01-UC) and a current measurement unit (SRW01-UMC) to provide flexible assembly options.

The SRW01-UC and SRW01-UMC are electrically connected using the SRW01-CB flat cable.



The interface with the relay may be performed in three ways:

- Via Fieldbus (ModBus, DeviceNet, Profibus)
- Via Keypad (SRW01-IHM)
- Via software – WLP (USB)

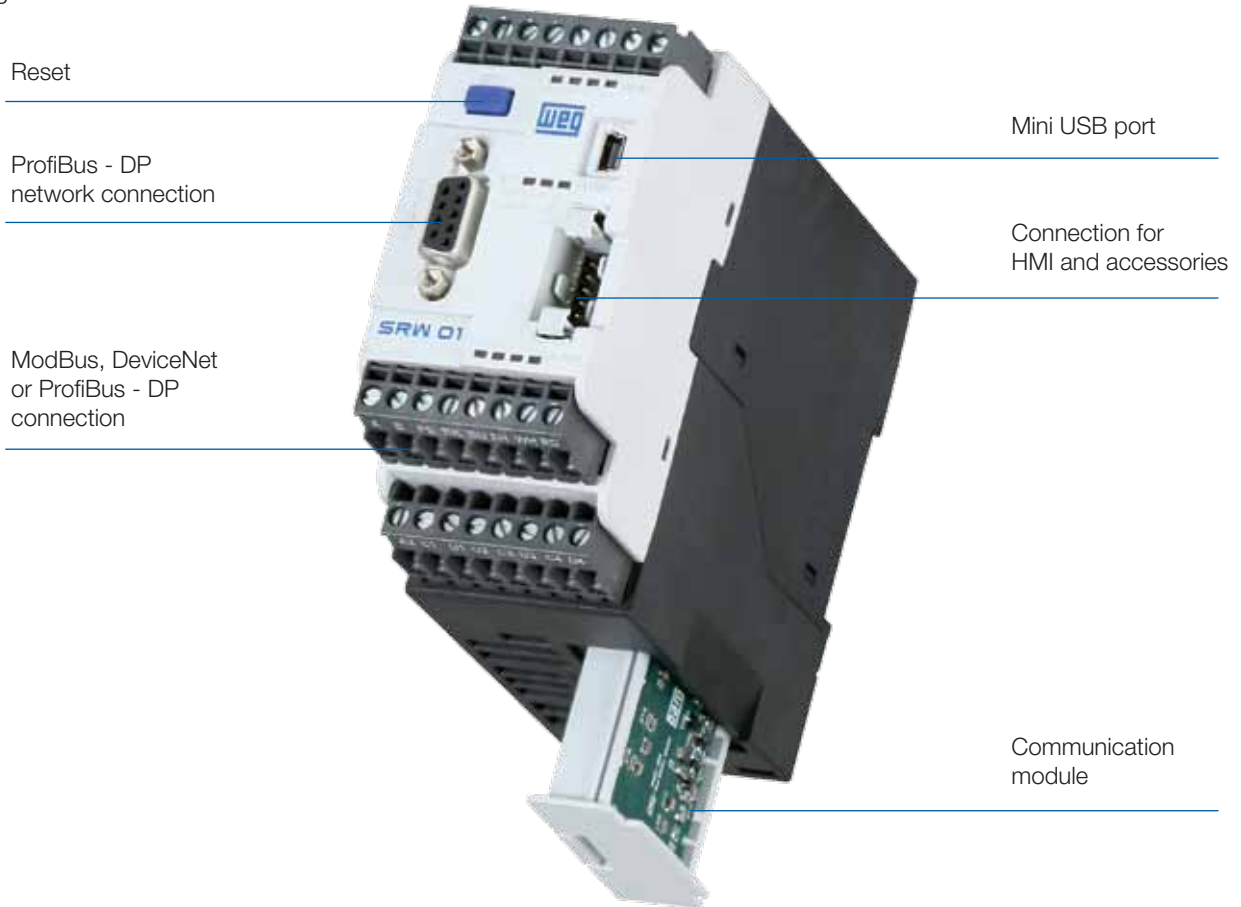
Through Fieldbus, the user can operate, monitor, and configure the SRW01 remotely, via PLC or supervisory system.



# Characteristics

The SRW01 relay has a 110...240Vac / Vdc supply voltage range, with I0 either 24 Vdc or 110 Vac making system integration flexible.

The reduced size of SRW01-UC, with a width of 45mm and height of 100mm, make it a compact product



The SRW01-UC control unit provides LED indicators for input and output activations, status, operation mode, power supply status, failure and alarm status. The mounting of the control unit can be done either by 35mm DIN rail or onto back panel mounting.

Communication protocols: DeviceNet, Modbus, and Profibus are defined using proper protocol installed in the communication drawer.

The plug and play concept automatically recognizes and configures the SRW01 for safe operation avoiding manual error connections.



# Current Measuring Units

The current measuring unit SRW01-UMC shall be chosen according to motor rated current from 0.25A through 840A



| Width (mm) | Current (A) | Power connection  |
|------------|-------------|-------------------|
| 45         | 0.25 - 2.5  | Cable through UMC |
|            | 0.5 - 5     |                   |
|            | 1.25 - 12.5 |                   |
|            | 2.5 - 25    |                   |



| Width (mm) | Current (A) | Power connection  |
|------------|-------------|-------------------|
| 66         | 12.5 - 125  | Cable through UMC |



| Width (mm) | Current (A) | Power connection |
|------------|-------------|------------------|
| 120        | 42 - 420    | Busbar           |



| Width (mm) | Current (A) | Power connection            |
|------------|-------------|-----------------------------|
| 265        | 84 - 840    | Cable through UMC or busbar |

### SRW01-CB connection cable

The SRW01-CB connects the controls units SRW01-UC to the current measuring unit SRW01-UMC allowing the two units to be separated assembled up to 2 meters.



## Functions

The SRW01 protection, monitoring and operating functions enhance system protection, reliability, and precision. The operating modes are auto-adjustable, meaning that the user selects the operating mode and the relay search for proper parameters automatically. This feature ensures quick and safe parameterization. All operating modes allow motor monitoring. Its friendly parameterization mode allows users to access all digital inputs and outputs, thus increasing flexibility to cover many applications.

### Protection

- Overload protection (adjustable tripping class 5-45).
- Thermal protection via PTC.
- Phase loss protection.
- Protection against current imbalance between phases.
- Protection against overcurrent and locked rotor.
- Protection against undercurrent.
- Internal ground fault protection.
- Protection against out of range frequency.

### Monitoring

- Digital input and output activation.
- RMS current of each phase and average in amperes or % of  $I_n$  adjusted current.
- Motor frequency
- Number of activation per fault type.
- Number of start ups.
- Motor running hours.
- Relay running hours.
- Phase imbalance levels.
- Internal ground fault current.

### Operating Modes

- Transparent operation - Digital input and output can be configured according to application needs .
- Operation as overload relay – similar to an overload relay.
- Direct starter - direct-on-line starter for single and three phase motors
- Reversing starter - reversing starter for three phase motors.
- Star-Delta starter - star-delta starter for three phase motors.
- Dahlander starter- starter for Dahlander three phase motors.
- Two windings starter - starter for two windings three phase motors.
- PLC mode – similar to the running of a PLC. In this mode the SRW01 – UMC is not used.





## WLP Software

The WLP is the SRW01 configuration software for Windows environment with user friendly interface that enables system parameterization, programming, controlling and monitoring.

The WLP software enables the user to configure the relay, edit parameters and program in LADDER.

Through the WLP configuration assistants the user has a guided routine that enables relay configuration. When necessary, the relay can be programmed in LADDER using mathematical and control blocks.

The LADDER program has a 64 Kbyte memory and can use the relay digital inputs and outputs.

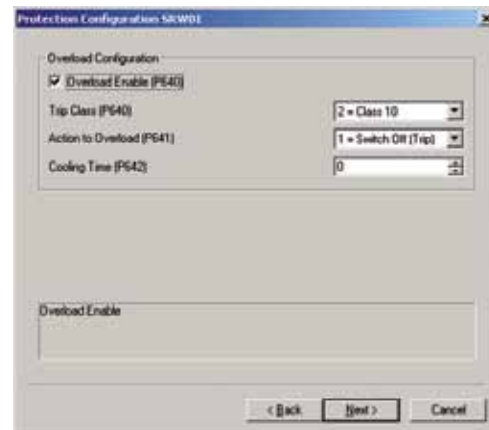
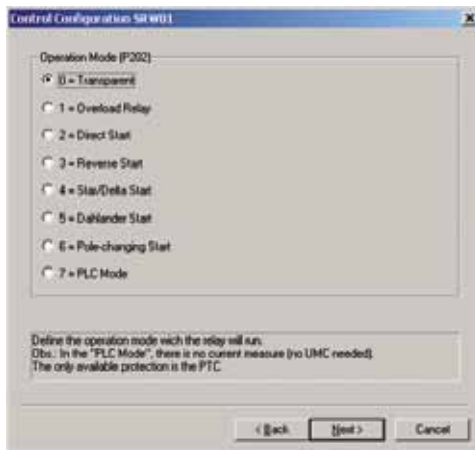
Communication between software and relay can be performed through USB port or ModBus network.

The WLP software is free and supplied with the product. It can be also obtained from the website [www.weg.net](http://www.weg.net).

### Configuration Assistants

These routines have been especially created to assist relay configuration. They help the user to configure the relay in an easy self explanatory manner.

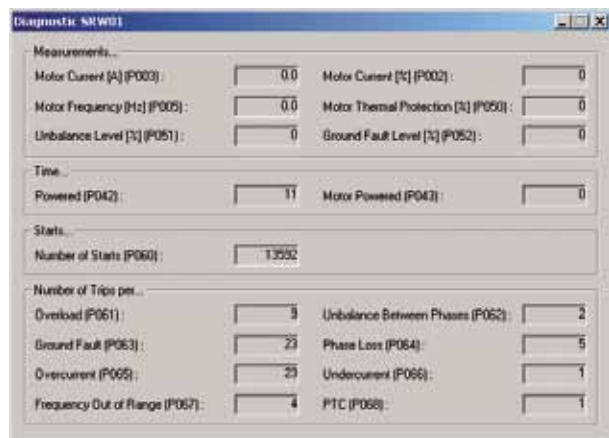
- Configuration Assistant: Control Configuration.



### Monitoring Dialogues

These dialogues have been especially created to monitor the relay. They monitor exclusive relay information.

- Monitoring dialogues: Diagnostic.



## Applications

The main function of the SRW01 is to protect and control electric motors in their most diverse industrial applications. Due to its reduced size and modular design, the relay is frequently used when space for its assembly is a determining point, e.g. in Intelligent Motor Control Centers.

Its high reliability and precision make the SRW01 suitable for the toughest industrial applications.

The on-line monitoring options, failure diagnosis and failure statistics allow preventive maintenance to be more effective, thus reducing the number of downtimes.

It offers wide application for continuous process plants in the following market segments:

- Chemical and Petrochemical
- Pulp and Paper
- Mining and Cement
- Food and Beverage
- Metal and Fabrication
- Plastics and rubber
- Automotive
- Ceramics
- Textile
- Refrigeration
- Other segments

## Benefits



- Greater reliability for the protection system
- Operator safety in operation, supervision and maintenance.
- System modularity and easy expansion.
- Reduction in control wiring.
- Reduction in motor control hardware.
- Remote monitoring, supervision and control via fieldbus network, computer (WLP) or Human-Machine Interface.
- Remot reset of the relay
- Quick and precise defect identification.
- Automation in defect records and statistics.





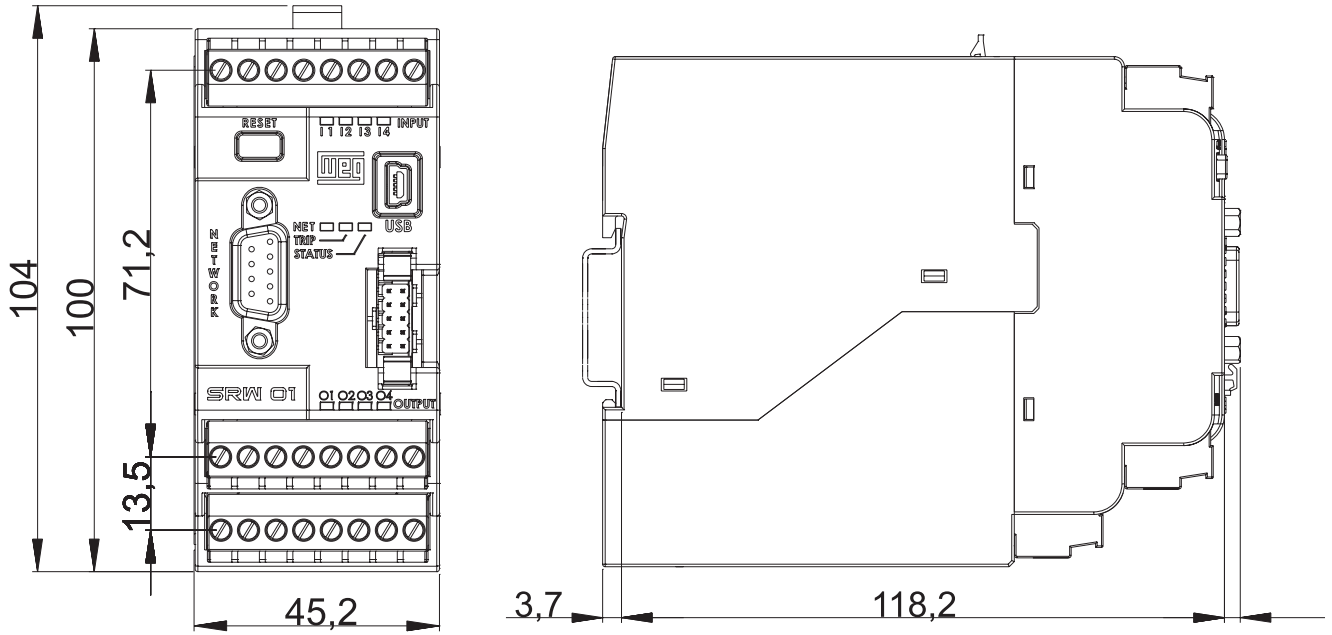
# Technical Characteristics

|   |   |
|---|---|
| Assembly position                         | Any   |
| Degree of protection (IEC 60529)          |   |
| UC - Control Unit                         | IP20  |
| Current measurement:                      |   |
| - without connection bus bar              | IP20  |
| - with connection busbar                  | IP00  |
| Human Machine Interface (HMI)             | IP20  |
| Acceptable ambient temperature:           |   |
| - Operation                               | 0...+60°C (+32...+140°F)  |
| - Storage and transport                   | -25...+80°C (-10...+176°F)  |
| UC - Control Unit                         |   |
| Insulation Rated Voltage Ui               | 300V  |
| Supply Rated Voltage Us                   | 110...240Vac/Vdc a 50/60Hz  |
| Operating range                           | 0.90Us ...1.10Us  |
| Consumption                               | 13W   |
| Number of digital inputs                  | 4 optically insulated inputs  |
| Number of digital outputs                 | 4 relay outputs   |
| Motor protection via – PTC:               |   |
| - TRIP value                              | > 3.9kΩ   |
| - Rearm value                             | < 1.6kΩ   |
| Terminals (connectors)                    |   |
| - Torque                                  | 0.8...1.2Nm (7.1...+11lb-in)  |
| Conductor diameter:                       |   |
| Rigid and no end sleeve                   | 1 x (0.5...4 mm <sup>2</sup> ); 2 x (0.5...2.5 mm <sup>2</sup> )    |
| Flexible with/without terminals           | 1 x (0.5...2.5 mm <sup>2</sup> ); 2 x (0.5...1.5 mm <sup>2</sup> )  |
| RESET button                              | Error or failure reset– System<br>TRIP or alarm reset - Protections |
| Current Measuring Unit (UMC)              |   |
| Current ranges                            | 0.25...840Aac   |
| Degree of insulation Ui                   | 690Vac  |
| Operating rated voltage Ue                |   |
| - IEC 60947-4-1                           | 690Vac  |
| - UL 508                                  | 600Vac  |
| Impulse voltage Uimp                      | 6kV   |
| Motor rated frequency                     | Up to 99Hz  |
| Application                               | Single phase and three phase  |
| Diameter for cables:                      |   |
| SRW01-UMC1, SRW01-UMC2, SRW01-UMC3        | 8mm   |
| SRW01-UMC4                                | 15mm  |
| SRW01-UMC5                                | Busbar  |
| SRW01-UMC6                                | 31mm or busbar  |
| Digital inputs                            |   |
| Number of digital inputs                  | 4 optically insulated inputs  |
| Source for digital inputs                 | 24Vdc internal source (insulated)                                   |
| Digital inputs current                    | 11mA to 24Vdc   |
| Insulation                                | 3kV   |
| Digital outputs                           |   |
| Number of digital outputs                 | 4 relay outputs   |
| Contact grouping                          | 2 SPST  |
| Contact voltage range                     | 2 SPST common shared  |
| Lowest operating power                    | 12...250Vac/Vdc   |
| Operating capacity per relay contact:     | 1W or 1 VA  |
| AC-15 (IEC 60947-5-1)                     |   |
|   | 6 A / 24 Vac  |
|   | 6 A / 120 Vca   |
|   | 3 Aac / 230 Vca   |
| DC-13 (IEC60947-5-1)                      |   |
|   | 2 A / 24 Vdc  |
|   | 0.55 A / 60 Vdc   |
|   | 0.25 A / 125 Vdc  |
| External protection against short circuit | 6 A gL/gG fuse  |
| Mechanical life                           | 1.000.000 operations  |
| Electrical life (AC-15):                  | 100.000 operations (0.5 A/250 Vac)                                  |
|   | 50.000 operations (1.5 A/250 Vac)                                   |
| Electrical life (DC-13):                  | 100.000 operations (0.5 A/250 Vdc)                                  |
|   | 50.000 operations (1.5 A/250 Vdc)                                   |

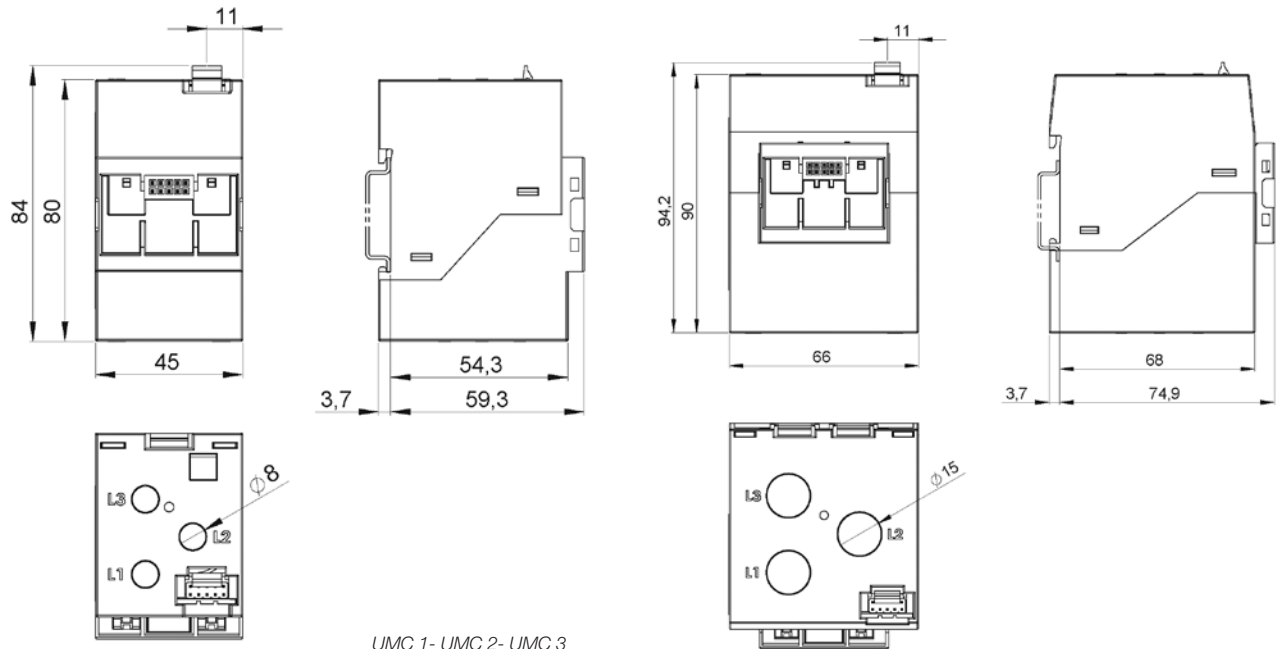


# Dimensions (mm)

## SRW01-UC - Control Unit



## SRW01-UMC - Current Measuring Unit

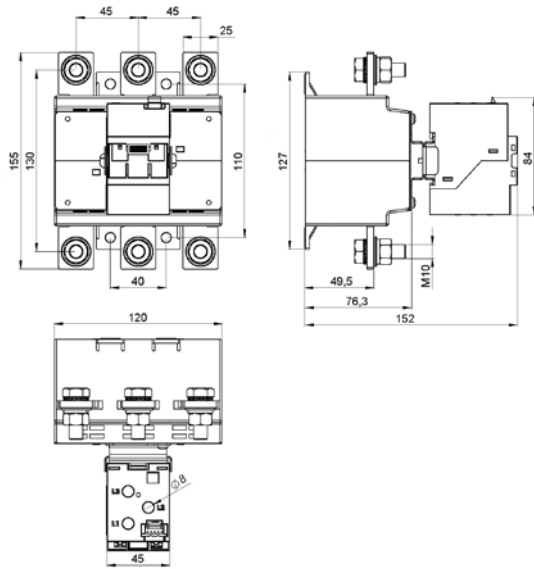


UMC 1 - UMC 2 - UMC 3

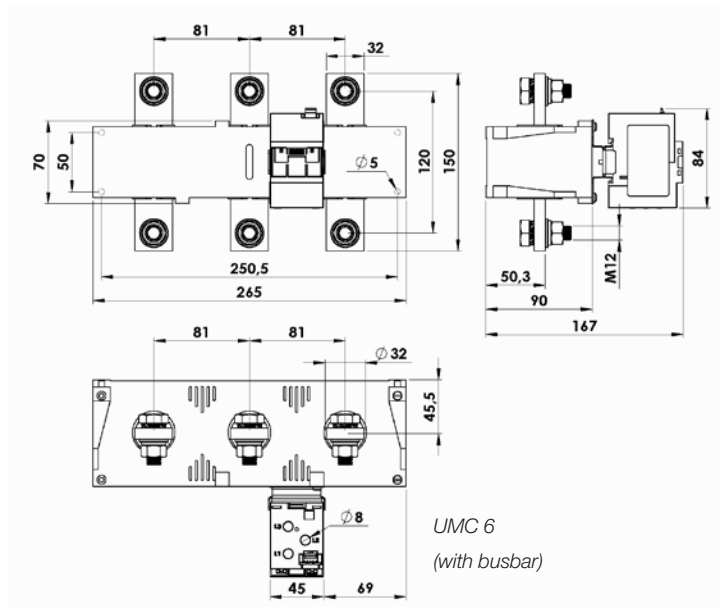


# Dimensions (mm)

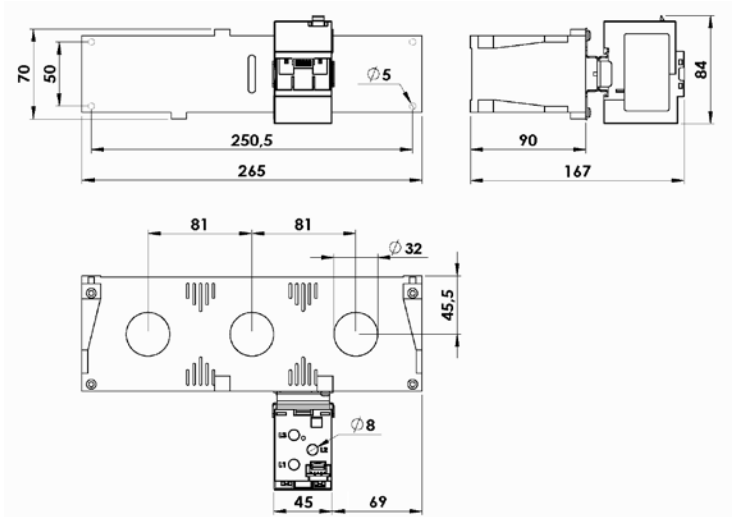
## SRW01-UMC - current Measuring Unit



UMC 5

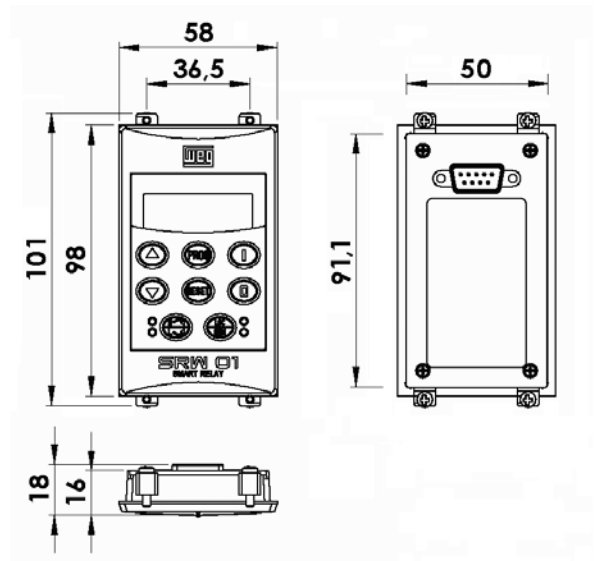


UMC 6  
(with busbar)



UMC 6  
(without busbar)

## HMI - Human Machine Interface





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