

# SRW01 - SMART RELAY

Connectivity and management  
of electric motors





RESET

11 12 13 14 INPUT

Weq

NETWORK

NET TRIP STATUS

USB

SRW 01

01 02 03 04 OUTPUT

TEST/RESET

11 12 13 14

Weq

PORT 1

PORT 2

NET

TRIP STATUS

A B C D E F 0 1 2 3 4 5 6 7 8 9

01 02 03

SRW 01

# SRW01

## Smart Relay

### Summary

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# CONNECTIVITY AND MANAGEMENT OF ELECTRIC MOTORS

The SRW01 Smart Relay is a versatile and flexible product, providing ***the protection, control, data management and diagnosis of low voltage electric motors***, with cutting edge technology and communication capacity in several industrial network protocols. Its modular design, which allows expanding its functionalities with more digital inputs and outputs, increases the application possibilities. It also has Plug & Play connectors, free WLP programming software and an USB communication port, which simplifies the operation in the user's application.

Available models with Modbus-RTU, Profibus and DeviceNet communication protocols, in addition to the Ethernet model, with the Modbus-TCP, PROFINET IO and EtherNet/IP communication protocols, have been very well accepted by the market and sales have been continuously increasing.





## Benefits



USB Port



Status LED indicator that simplifies the identification of the operation



Reliable operating modes and command



User-friendly interface



Free programming software



Unique in the market with 6 digital inputs and 4 outputs

## Certifications



European Union

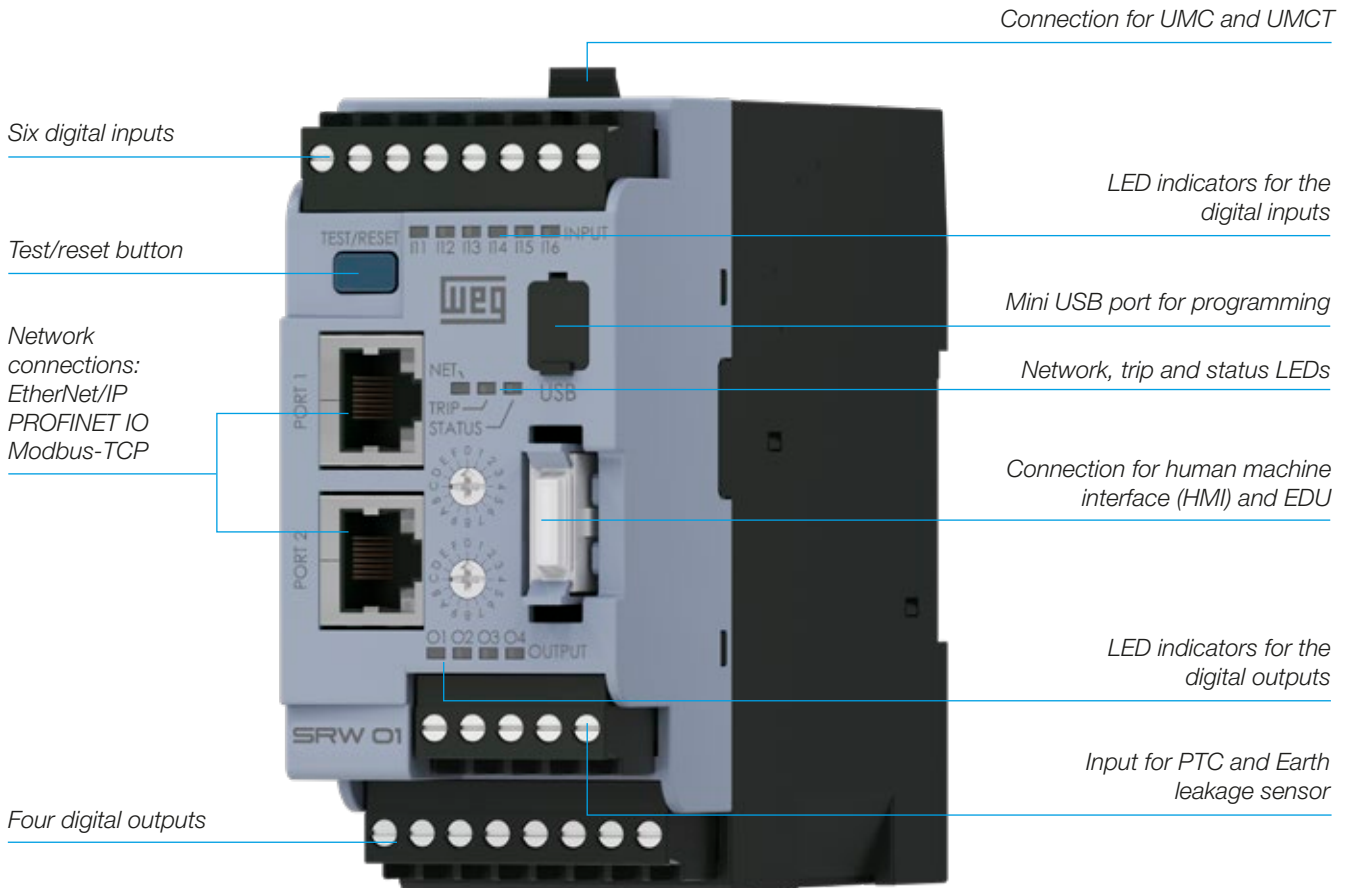


Canada and USA

## Construction Characteristics

### Control Unit - UC

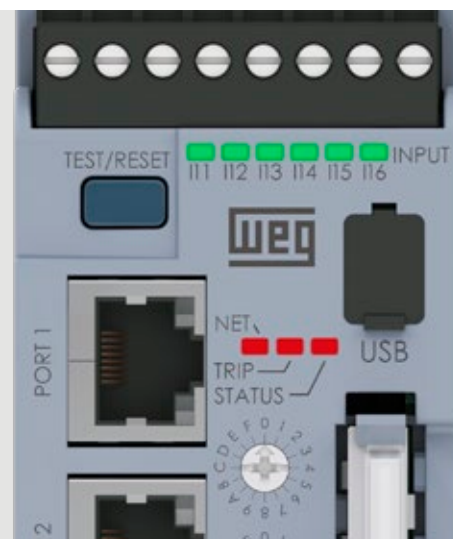
#### EtherNet/IP, PROFINET IO, Modbus-TCP Models



The Control Unit (UC) provides LED indicators to monitor the activation of each digital input and output, showing their status. It also has LEDs that indicate the network status, operating condition and failure or alarm status.

In addition to the visual information via LEDs, the SRW01 can be parameterized, programmed and monitored in three different ways:

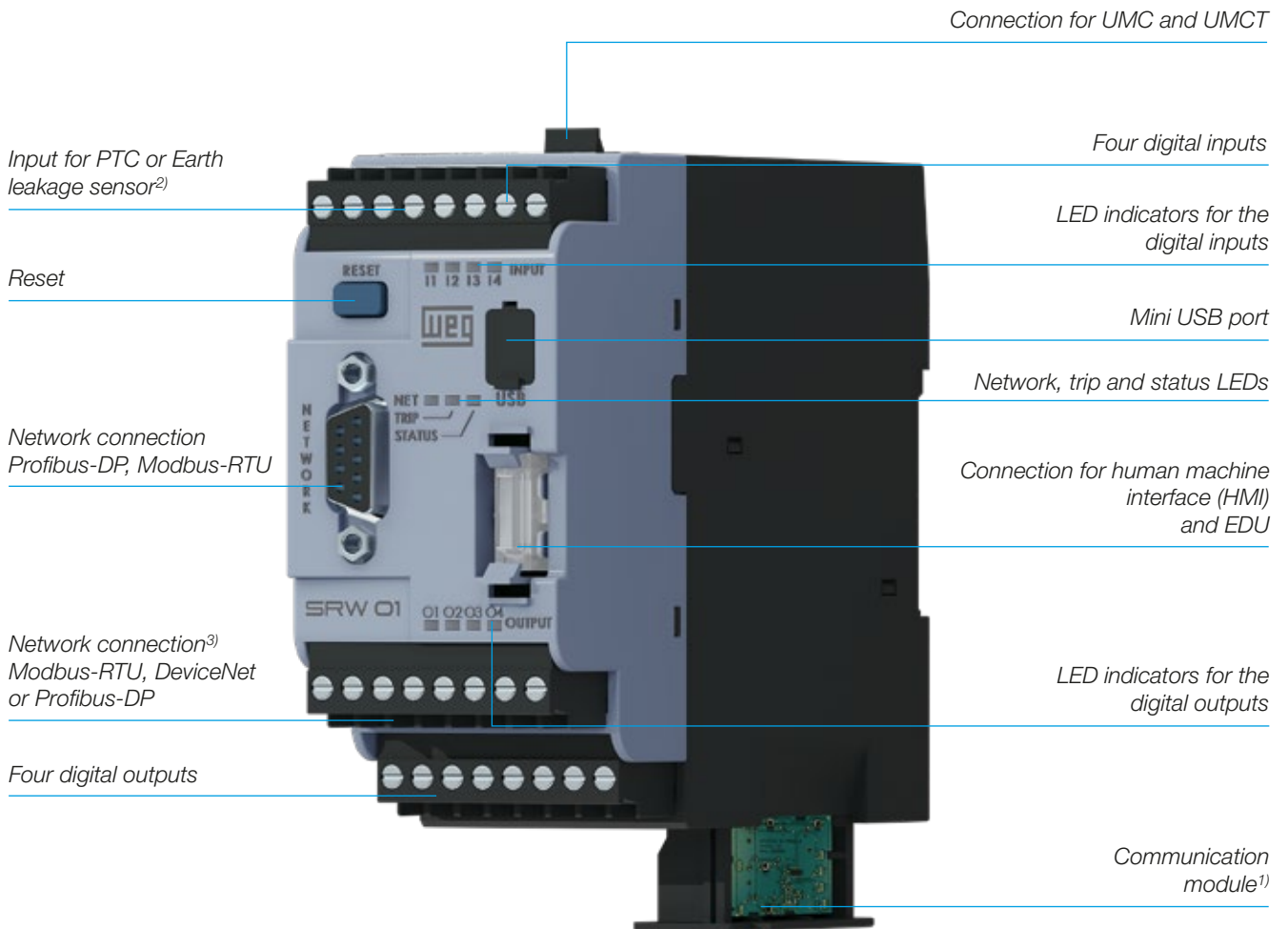
- Via networks (DeviceNet, Profibus-DP, Modbus-RTU, EtherNet/IP, Modbus-TCP and PROFINET IO)
- Via human machine interface - HMI (SRW01-HMI)
- Via USB with the free WLP software



# Construction Characteristics

## Control Unit - UC

### Profibus-DP, DeviceNet, Modbus-RTU Models



Notes: 1) Not available in Ethernet version.

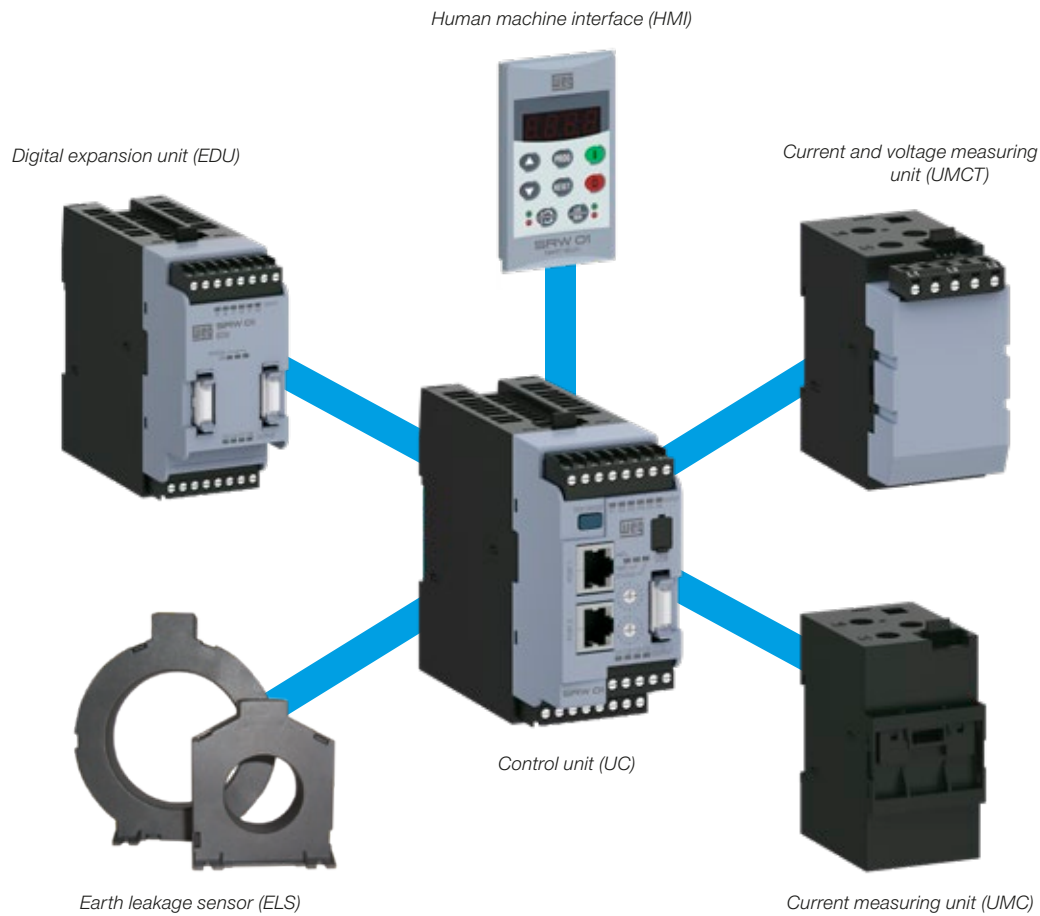
2) Ethernet models have input for PTC and Earth leakage sensor.

3) The connection via Fieldbus (Modbus-RTU or Profibus-DP) can be done in two ways: through the DB9 connector located in front of the Control Unit (UC) or via terminals (DeviceNet, Profibus-DP, Modbus-RTU).



## Construction Characteristics

Using the modular concept, SRW01 offers flexibility and easy configuration.



### Digital Expansion Unit (EDU)



The Digital Expansion Unit (EDU) increases the number of digital inputs and outputs present in the Control Unit (UC) of the SRW01. The EDU adds 6 digital inputs and 4 digital outputs, and can be used to monitor signals and to control external devices.

*Note: limit of one Digital Expansion Unit (EDU) for each Control Unit (UC).*

### Current Measuring Unit (UMC) or Voltage and Current Measuring Unit (UMCT)



UMC

UMCT

The Current Measuring Unit (UMC) measures the current of the three phases of the motor.

Including a potential transformer, the Current and Voltage Measuring Unit (UMCT) also monitors voltages up to 690 V, allowing the smart relay to monitor phase sequence, power factor, motor power (active, reactive and apparent) and power consumption (kWh).

The data are digitally transmitted to the Control Unit (UC).

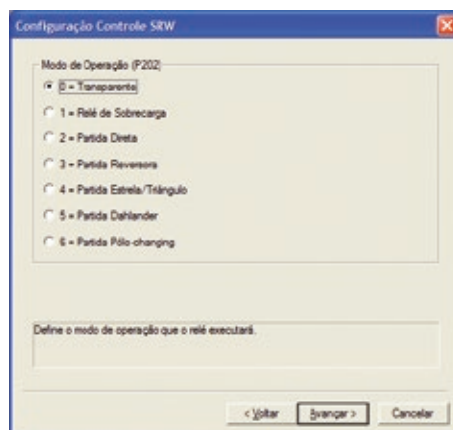
## Parameterization

### Free Programming Software - WLP (WEG Ladder Programmer)

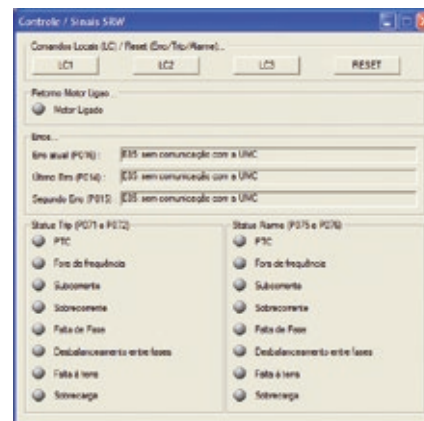
- Parameterization, programming, command and monitoring of the SRW01
- Configuration, parameter edition and programming in ladder language with mathematic and control blocks
- Assistants to help in the configuration
- Communication via USB port or Modbus-RTU, Modbus-TCP, PROFINET IO and EtherNet/IP networks



Mini USB connection



Configuration assistant



Monitoring diagnosis

Easy parameterization with preprogrammed operations available on the programming menu.

### Operating Modes

- Transparent operation - the digital inputs and outputs can be configured according to the application requirements
- 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 operation mode the UMC/UMCT is not used

## Technical Characteristics

Its protection, command, diagnosis and data acquisition functions ensure safety and flexibility in the protection of electric motors.

Command, diagnosis and data acquisition
Digital input and output activation
RMS current of each phase and average in amperes (A) or % of the adjusted current $I_n$
Line and average voltage in volts (V)
Motor frequency
Total trips
Number of trips by fault type
Number of starts
Motor running hours
Relay running hours
Phase current unbalance level
Voltage unbalance level
Internal ground fault current
Earth leakage current
Power factor
Active, reactive and apparent power
PTC value
Ground fault level
Electric energy consumption management - kWh and kvarh

SRW01 - Smart relay	Protection	
	Code	ANSI protection function Description
Overload	49	Machine or transformer thermal relay / thermal overload
Phase loss (current)	60	Voltage or current balance relay
Current imbalance	46	Reverse-phase or phase balance current relay or stator current unbalance
Overcurrent – configured for locked rotor protection	51	A-C Time overcurrent relay
	51LR	AC inverse time overcurrent (locked rotor) protection relay
	48	Incomplete sequence relay / blocked rotor
Undercurrent	37C	Undercurrent relay
Earth fault	51G	Ground time overcurrent
PTC thermal protection	49P	Machine or transformer thermal relay - thermistor protection
Frequency out of range	81	Frequency relay
Earth leakage	51GS	Time delay ground fault relay
External fault	-	-
Phase sequence	47	Phase-sequence or phase balance voltage relay
Voltage unbalance	47	Phase-sequence or phase balance voltage relay
	59Q	Negative sequence overvoltage
Phase loss (voltage)	60	Voltage or current balance relay
Overvoltage	59	Overvoltage relay
Undervoltage	27	Undervoltage relay
Underpower	37P	Underpower
Overpower	37	Undercurrent or underpower relay
Power under factor	55	Power factor relay
Power over factor	55	Power factor relay

Notes: 1) PTC protection available only on version SRW01-UC\_T (PTC).

2) Earth leakage protection is available only on version SRW01-UC\_E (Earth leakage).

3) Both Earth leakage and PTC Protections are available on version SRW01-UC E1,E2,E3 (Ethernet model).

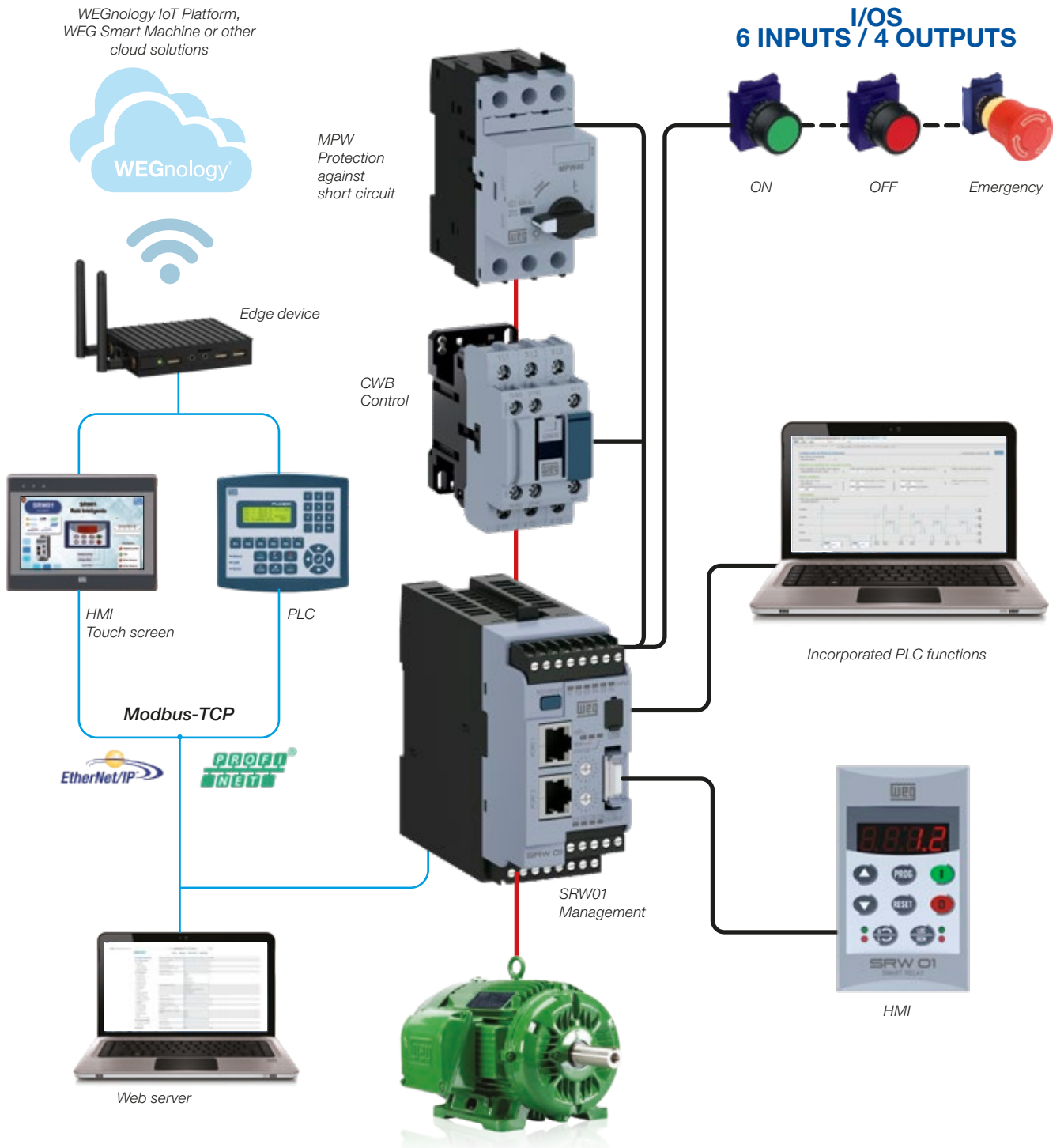
Check the nameplate or the warning tag on the product to know which model of the control unit was acquired.

4) Phase sequence, voltage unbalance, phase loss (voltage), overvoltage, undervoltage, overpower, underpower, power over factor and power under factor protections, only available when the Current Voltage Measurement Unit (UMCT) is used.

5) For Earth leakage protection, Earth Leakage Sensor (ELS) must be used in conjunction with Control Unit - UC.



# Connectivity



Its capacity of immediate diagnosis helps the preventive maintenance, avoiding undesirable machine breakdown, and also meeting the **IoT** requirements, which is one of the cornerstones of the **4.0 Industry**.

# Applications



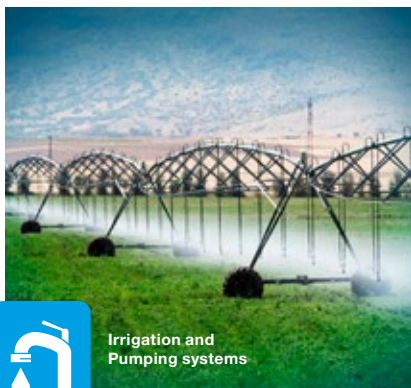
Sugar & Alcohol



Metallurgy



Chemicals & Petrochemical



Irrigation and Pumping systems



Pulp & Paper



Ventilation



Steel



Mining



Cement



Buildings



Pumping systems

# Selection Table<sup>1)</sup>

## Control Unit - UC



Image for illustrative purposes  
Ethernet version.

SRW01-U C P T 1 E47

Communication protocols  
 B = Without communication  
 D = DeviceNet  
 M = Modbus-RTU  
 P = Profibus-DP  
 E1 = Ethernet Modbus-TCP  
 E2 = Ethernet PROFINET IO  
 E3 = EtherNet/IP

Protection  
 T = PTC  
 E = Earth leakage  
 TE = PTC and Earth leakage

Digital input operating voltage  
 1 = 24 V dc  
 2 = 110 V ac

Supply voltage  
 E26 = 24 V ac (50-60 Hz) / V dc  
 E47 = 110-240 V ac (50-60 Hz) / V dc

Reference	Protection	Supply voltage	Communication protocol	Digital input voltage	Code	
SRW01-UCBE1E47	Earth leakage	110-240 V ac (50-60 Hz) / V dc	Without communication	24 V dc	11072584	
SRW01-UCBE1E26		24 V ac (50-60 Hz) / V dc		24 V dc	11364681	
SRW01-UCBE2E47		110-240 V ac (50-60 Hz) / V dc		110 V ac	11072586	
SRW01-UCBE2E26		24 V ac (50-60 Hz) / V dc		110 V ac	11364680	
SRW01-UCBT1E47	PTC	110-240 V ac (50-60 Hz) / V dc		Without communication	24 V dc	10558177
SRW01-UCBT1E26		24 V ac (50-60 Hz) / V dc			24 V dc	11364685
SRW01-UCBT2E47		110-240 V ac (50-60 Hz) / V dc			110 V ac	10673330
SRW01-UCBT2E26		24 V ac (50-60 Hz) / V dc			110 V ac	11364684
SRW01-UCDE1E47	Earth leakage	110-240 V ac (50-60 Hz) / V dc	DeviceNet		24 V dc	11072131
SRW01-UCDE1E26		24 V ac (50-60 Hz) / V dc			24 V dc	11364678
SRW01-UCDE2E47		110-240 V ac (50-60 Hz) / V dc			110 V ac	11072132
SRW01-UCDE2E26		24 V ac (50-60 Hz) / V dc			110 V ac	11364667
SRW01-UCDT1E47	PTC	110-240 V ac (50-60 Hz) / V dc		DeviceNet	24 V dc	10673500
SRW01-UCDT1E26		24 V ac (50-60 Hz) / V dc			24 V dc	11364632
SRW01-UCDT2E47		110-240 V ac (50-60 Hz) / V dc			110 V ac	10673498
SRW01-UCDT2E26		24 V ac (50-60 Hz) / V dc			110 V ac	11364688
SRW01-UCPE1E47	Earth leakage	110-240 V ac (50-60 Hz) / V dc	Profibus-DP		24 V dc	11072136
SRW01-UCPE1E26		24 V ac (50-60 Hz) / V dc			24 V dc	11364664
SRW01-UCPE2E47		110-240 V ac (50-60 Hz) / V dc			110 V ac	11072137
SRW01-UCPE2E26		24 V ac (50-60 Hz) / V dc			110 V ac	11364663
SRW01-UCPT1E47	PTC	110-240 V ac (50-60 Hz) / V dc		Profibus-DP	24 V dc	10673417
SRW01-UCPT1E26		24 V ac (50-60 Hz) / V dc			24 V dc	11364658
SRW01-UCPT2E47		110-240 V ac (50-60 Hz) / V dc			110 V ac	10673414
SRW01-UCPT2E26		24 V ac (50-60 Hz) / V dc			110 V ac	11364617
SRW01-UCME1E47	Earth leakage	110-240 V ac (50-60 Hz) / V dc	Modbus-RTU		24 V dc	11072133
SRW01-UCME1E26		24 V ac (50-60 Hz) / V dc			24 V dc	11364666
SRW01-UCME2E47		110-240 V ac (50-60 Hz) / V dc			110 V ac	11072135
SRW01-UCME2E26		24 V ac (50-60 Hz) / V dc			110 V ac	11364665
SRW01-UCMT1E47	PTC	110-240 V ac (50-60 Hz) / V dc		Modbus-RTU	24 V dc	10675557
SRW01-UCMT1E26		24 V ac (50-60 Hz) / V dc			24 V dc	11364683
SRW01-UCMT2E47		110-240 V ac (50-60 Hz) / V dc			110 V ac	10673440
SRW01-UCMT2E26		24 V ac (50-60 Hz) / V dc			110 V ac	11364682
SRW01-UCCE1E47	PTC and Earth leakage	110-240 V ac (50-60Hz) / V dc	Modbus-TCP		24 V dc <sup>2)</sup>	12105800
SRW01-UCCE1E26		24 V ac (50-60Hz) / V dc	Modbus-TCP		24 V dc <sup>2)</sup>	12105806
SRW01-UCCE2E1E47		110-240 V ac (50-60Hz) / V dc	PROFINET IO		24 V dc <sup>2)</sup>	13628772
SRW01-UCCE2E1E26		24 V ac (50-60Hz) / V dc	PROFINET IO		24 V dc <sup>2)</sup>	14623372
SRW01-UCCE3E1E47		110-240 V ac (50-60Hz) / V dc	EtherNet/IP	24 V dc <sup>2)</sup>	13628769	
SRW01-UCCE3E1E26		24 V ac (50-60Hz) / V dc	EtherNet/IP	24 V dc <sup>2)</sup>	14623550	

Notes: 1) Other configurations available upon request.  
 2) To use 110 V signals (50-60 Hz) at the digital inputs, the SRW01-IAC interface module must be used together (see Accessories).



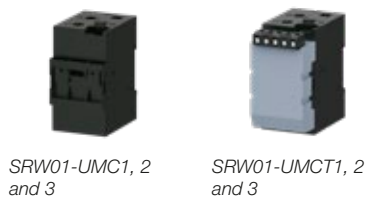
## Accessories

### Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT)

They must be selected according to the motor rated current.

Code	Current measuring (UMC)	Current range (A)	Current and voltage measuring unit (UMCT) <sup>1)</sup>	Code
10558179	SRW01-UMC1	0.5-5.0	SRW01-UMCT1	11751275
10558180	SRW01-UMC2	1.25-12.5	SRW01-UMCT2	11751274
10558181	SRW01-UMC3	2.5-25.0	SRW01-UMCT3	11751276
10558182	SRW01-UMC4	12.5-125.0	SRW01-UMCT4	11739009
10561132	SRW01-UMC5	42.0-420.0	SRW01-UMCT5	11751277
10561133	SRW01-UMC6	84.0-840.0	SRW01-UMCT6	11751328

Note: the Control Unit (UC) can be assembled with the Current Measuring Unit (UMC), creating a single unit, or detached (up to 2 meters). The Current and Voltage Measuring Unit (UMCT) can be exclusively assembled detached from the Control Unit (UC).



Width (mm)	Current (A)	Power connection
45	0.25 - 2.5 <sup>2)</sup>	Cable through
	0.5 - 5	
	1.25 - 12.5	
	2.5 - 25	



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



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



Width (mm)	Current (A)	Power connection
265	84 - 840	Cable through or busbar <sup>3)</sup>

Images for illustrative purposes

For applications at higher currents or out of the model range of the Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT), it is possible to use external current transformers (CTs) supplied by the user.

### UC-UMC or UMCT / UC-EDU Connection Cable

The SRW01-CB cable makes the electrical connection of the Control Unit (UC) to the Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT) or Digital Expansion Unit (EDU), allowing the detached assembly up to two meters away and simplifying the installation.



Reference	Length (mm)	Code
SRW01-CB0	60	11332922
SRW01-CB1	120	10558183
SRW01-CB2	500	10938235
SRW01-CB3	2,000	10558185
SRW01-CB4	1,000	11332919

Notes: 1) Alternating supply voltage from 35 to 690 V.

2) For a current range from 0.25 to 2.5 A, use the SRW01-UMC1 or SRW01-UMCT1 with two turns in the primary winding. For further details, refer to the user's manual.

3) Busbar not included - supplied separately as an accessory item.

## Accessories



### Interface Module for Digital Inputs - IAC

The SRW01-IAC interface module allows the application of 110 V 50/60 Hz signals to the digital inputs of the control units with Ethernet communication.

Reference	Application	Code
SRW01-IAC	Compatible with SRW01-UCe♦	14910464

### Digital Expansion Unit - EDU

It allows the expansion of the number of digital inputs and outputs present in the control unit (UC).

Reference	Digital inputs	Supply voltage of the digital inputs	Digital outputs	Code
SRW01-EDU1	6	24 V dc	4	11367104
SRW01-EDU2	6	110 V 50/60 Hz	4	11367106

Notes: Each UC Control Unit allows the use of 1 EDU Digital Expansion Unit.  
The supply voltage for the digital inputs must come from an external source.



### Human Machine Interface - HMI

The HMI is connected to the front part of the relay by means of a communication cable, making its operation and configuration easier and more convenient. It offers two mounting options: vertical and horizontal.



Reference	Description	Code
SRW01-HMI	Operating interface (HMI) for vertical installation	10558186
SRW01-HMI2	Operating interface (HMI) for horizontal installation	11578238

### Earth Leakage Sensor (ELS)

The Earth leakage sensor must be installed detached from the Control Unit (UC).

It can be installed in any position and connected to the Control Unit (UC) by means of a twisted pair and/or shielded cable connected to the sensor terminals and S1 and S2 terminals, for the model with Profibus-DP, DeviceNet and Modbus-RTU, or to the other E1 and E2 terminals for the EtherNet/IP, PROFINET IO and Modbus-TCP models, with maximum recommended distance of 10 m.



Reference	Internal diameter (mm)	UMC/UMCT compatible	Code
SRW01-EL1	35	SRW01-UMC/UMCT1/2/3	10997169
SRW01-EL2	70	SRW01-UMC/UMCT4	10997170
SRW01-EL3	120	SRW01-UMC/UMCT5	10997173
SRW01-EL4	210	SRW01-UMC/UMCT6	10997174

Specify the Earth leakage sensor according to the diameter of the cables that go through the window; choose the sensor with the smallest opening.

It is recommended to use the equivalence relation between the Current Measuring Unit (UMC) or Current and Voltage Measuring Unit (UMCT) and the ELS sensors for the installation, as shown on the table above.

## Accessories

### Connection Cable UC-HMI



Reference	Length (mm)	Code
SRW01-CH1	500	10558187
SRW01-CH2	1,000	10558188
SRW01-CH3	1,500	10558189
SRW01-CH4	2,000	11332397

### USB Communication Cable



Reference	Length (mm)	Code
SRW01-USB	2,000	10561134

### Communication Module



Reference	Communication protocol	Code
SRW01-MCD	DeviceNet	10575286
SRW01-MCM	Modbus-RTU	10675582
SRW01-MCP	Profibus-DP	10675585

Notes: For replacement or for Control Unit (UC) without network module.  
Not available in the Ethernet version.

### Fixing Adaptor



Reference	Description	Code
PLMP	Adapter for screw fixing (2 pieces per package/0.006 kg)	10185925

### Busbar for UMC and UMCT



Reference	Description	Code
JBL RW407D	Busbar for the Current Measuring Unit (UMC6) / Current and Voltage Measuring Unit (UMCT6)	10045718

### Protection Covers - Replacement



DB9

Reference	Description	Code
SRW01-CDB <sup>1)</sup>	Plastic cover for DB9 connector protection	11080360

Note: 1) 10-unit pack.

### USB Adapter for Panel Door



Reference	Description	Code
SRW01-AUSB1	USB adapter cable with protection cover IP68 and length of 25 cm	12171479
SRW02-AUSB2	USB adapter cable with protection cover IP68 and length of 50 cm	12171480



## Technical Data

General data	Mounting position	Any	
	Pollution degree (UL 508)	2	
	Degree of protection (IEC 60529)	Control Unit (UC): IP20 Current Measurement Unit (UMC): - Without busbar: IP20 - With busbar: IP00 Current and Voltage Measuring Unit (UMCT): - Without busbar: IP20 - With busbar: IP00 Digital Expansion Unit (EDU): IP20 Human Machine Interface (HMI): IP54 Earth Leakage Sensor (ELS): IP20	
	Ambient temperature	Operation: - According to IEC: 0...+55 °C - According to UL: 0...+40 °C Storage and transport: -25...+80 °C	
	Shor circuit ratings (UL) <sup>1)</sup>	Control Unit (UC): refer to the user's manual Current Measuring Unit (UMC/UMCT): refer to the user's manual	
Tripping class (UL)	Control Unit (UC): classes 10/20/30 Current Measuring Unit (UMC/UMCT): classes 10/20/30		
Control Unit (UC)	Rated insulation voltage $U_i$	300 V	
	Rated supply voltage $U_s$	110 - 240 V ac/V dc @ 50/60 Hz	24 V ac/V dc @ 50/60 Hz
	Operation range	0.85 $U_s$ - 1.10 $U_s$	0.85 $U_s$ - 1.10 $U_s$
	Consumption (typical) <sup>2)</sup>	6 W	5 W
	Number of digital inputs	4 optically isolated inputs (24 V dc or 110 V ac) 6 optically isolated inputs (24 V dc) for the Ethernet model	
	Digital input power supply	24 V dc	110 V ac
	Digital input power source	Internal 24 V dc isolated power source or external	External 110 V ac power source
	Digital input current	11 mA @ 24 V dc 6 mA @ 24 V dc (Ethernet)	5 mA @ 110 V ac
	Digital input isolation	3 kV	
	Number of digital outputs	4 relay outputs	
	Contact grouping	2 SPST outputs 2 common shared SPST outputs	
	Maximum operation voltage	250 V dc, 240 V ac	
	Smallest operation power	1 W or 1 VA	
	Switching capacity per relay contact	UL 508: C300 Pilot Duty AC-15 (IEC 60947-5-1): 1.5 A AC / 120 V ac 0.75 A AC / 240 V ac DC-13 (IEC 60947-5-1): 0.22 A DC / 125 V dc 0.1 A DC / 250 V dc	
	Contacts capacity (resistive load)	2.5 A, 30 V dc / 250 V ac	
	External protection against short circuit	6 A gL/gG fuse	
	Motor protection via PTC	TRIP value: >3.4 k $\Omega$ ; Reset value <1.6 k $\Omega$	
Terminals (connectors)	Torque: 0.5 Nm - 4.5 lb.in Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm <sup>2</sup> ); 1 x (26 - 12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm <sup>2</sup> ); 1 x (26 - 12 AWG) Screws: M3		
Reset button	Error or fault reset - system TRIP or alarm reset - protections TRIP test		
Interface for Digital Inputs (IAC)	Rated insulation voltage $U_i$	300 V	
	Number of digital inputs	6 optically isolated inputs (110 V ac)	
	Digital input power supply	110 V ac	
	Digital input power supply	External 110 V ac power supply	
	Digital input current	5 mA @ 110 V ac	
	Digital input isolation	3 kV	
Terminals (connectors)	Torque: 0.5 Nm - 4.5 lb.in Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm <sup>2</sup> ); 1 x (26 - 12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm <sup>2</sup> ); 1 x (26 - 12 AWG) Screws: M3		

Notes: 1) See the user's manual.

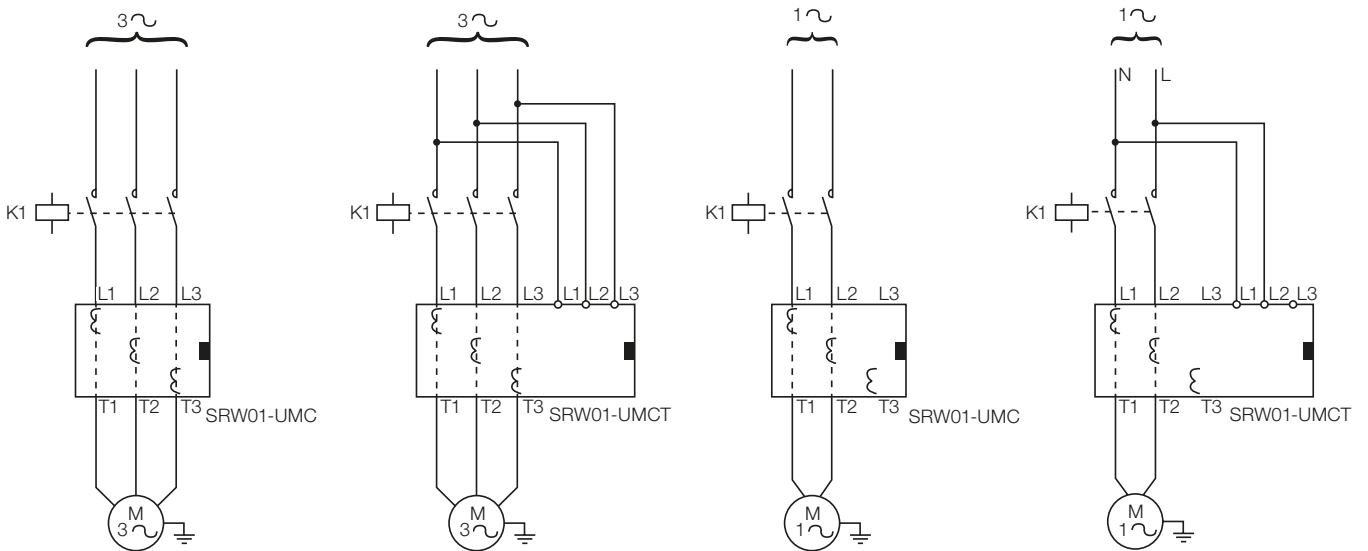
2) Considering the consumption of the Control Unit (UC) and of the Current Measuring Unit (UMC).

## Technical Data

Current Measurement Unit (UMC)	Current range	0.25 to 840 A AC	
	Insulation degree $U_i$	690 V ac	
	Rated operating voltage $U_e$	IEC 60947-4-1: 690 V ac UL 508: 600 V ac	
	Impulse voltage $U_{imp}$	6 kV	
	Frequency range	50/60 Hz	
	Application	Single-phase and three-phase	
Cable hole diameter	UMC 1, 2 and 3: 8 mm UMC 4: 15 mm UMC 5: busbar UMC 6: 32 mm or busbar		
Current and Voltage Measuring Unit (UMCT)	Current range	0.25 - 840 A AC	
	Voltage range	35 - 690 V ac	
	Insulation degree $U_i$	690 V ac	
	Rated operating voltage $U_e$	IEC 60947-4-1: 690 V ac UL 508: 600 V ac	
	Impulse voltage $U_{imp}$	6 kV	
	Frequency range	50/60 Hz	
	Application	Single-phase and three-phase	
	Cable hole diameter	UMCT 1, 2 and 3: 8 mm UMCT 4: 15 mm UMCT 5: busbar UMCT 6: 32 mm or busbar	
Terminals (connectors)	Torque: 0.5 Nm - 4.5 lb.in Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm <sup>2</sup> ); 1 x (26 - 12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm <sup>2</sup> ); 1 x (26 - 12 AWG) Screws: M3		
Digital Expansion Unit (EDU)	Rated insulation voltage $U_i$	300 V	
	Number of digital inputs	6 optically isolated inputs (24 V dc or 110 V ac)	
	Digital input power source	24 V dc	110 V ac
	Digital input power source	External 24 V dc power source	External 110 V ac power source
	Digital input current	11 mA @ 24 V dc	5 mA @ 110 V ac
	Digital input isolation	3 kV	
	Number of digital outputs	4 relay outputs	
	Contact grouping	4 SPST outputs	
	Maximum operation voltage	250 V dc, 240 V ac	
	Smallest operation power	1 W or 1 VA	
	Switching capacity per relay contact	UL 508: Pilot Duty C300 AC-15 (IEC 60947-5-1): 1.5 A AC / 120 V ac 0.75 A AC / 240 V ac DC-13 (IEC 60947-5-1): 0.22 A DC / 125 V dc 0.1 A DC / 250 V dc	
	Contacts capacity (resistive load)	2.5 A, 30 V dc / 250 V ac	
	External protection against short circuit	6 A gL/gG fuse	
Terminals (connectors)	Torque: 0.5 Nm - 4.5 lb.in Conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm <sup>2</sup> ); 1 x (26 - 12 AWG) - Flexible with/without terminals: 1 x (0.2 - 2.5 mm <sup>2</sup> ); 1 x (26 - 12 AWG) Screws: M3		
Earth Leakage Sensor (ELS)	Current range	0.3 - 5 A AC	
	Insulation degree $U_i$	690 V ac	
	Rated operating voltage $U_e$	IEC 60947-4-1: 690 V ac UL 508: 600 V ac	
	Impulse voltage $U_{imp}$	6 kV	
	Frequency range	50/60 Hz	
	Application	Single-phase and three-phase	
	Window internal diameter	EL1: 35 mm EL2: 70 mm EL3: 120 mm EL4: 210 mm	
	Terminals (connectors)	Torque: 0.29 Nm - 2.6 lb.in Maximum conductor section: - Solid and bare: 1 x (0.2 - 2.5 mm <sup>2</sup> ); 1 x (22 - 14 AWG) - Flexible with/without terminals: 1 x (0.2 - 1.5 mm <sup>2</sup> ); 1 x (22 - 14 AWG) Screws: M3	

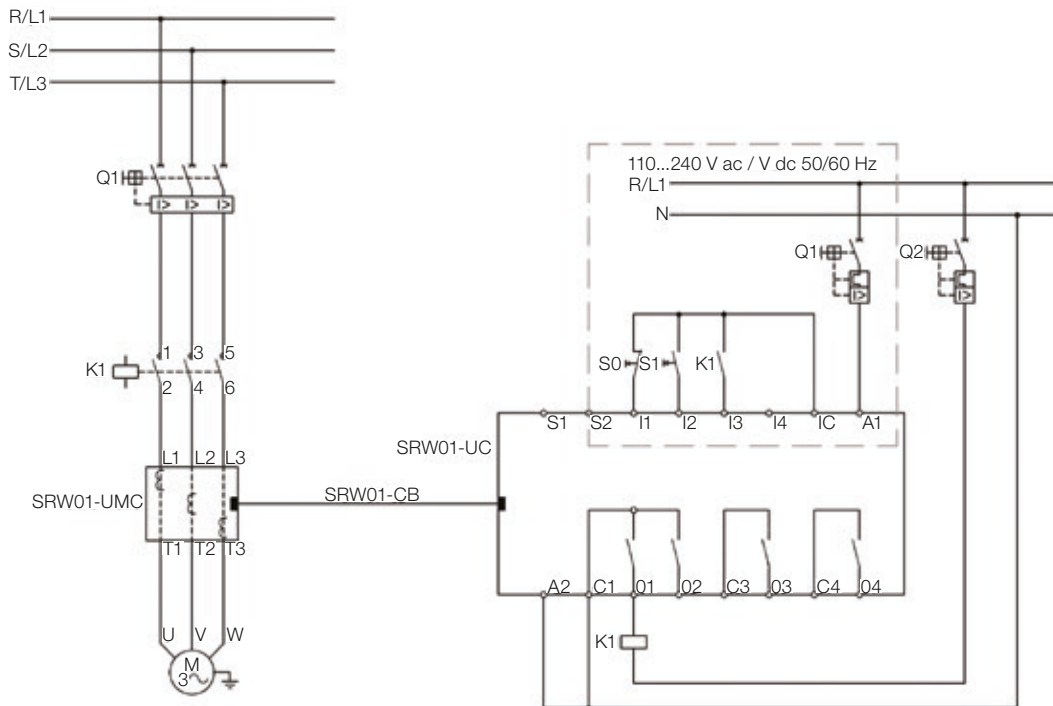
# Wiring Diagram

## Power Cables



Note: three-phase and single-phase connection of the Current Measurement Unit (UMC) and Current and Voltage Measurement Unit (UMCT).

## Direct Starter Operating Mode

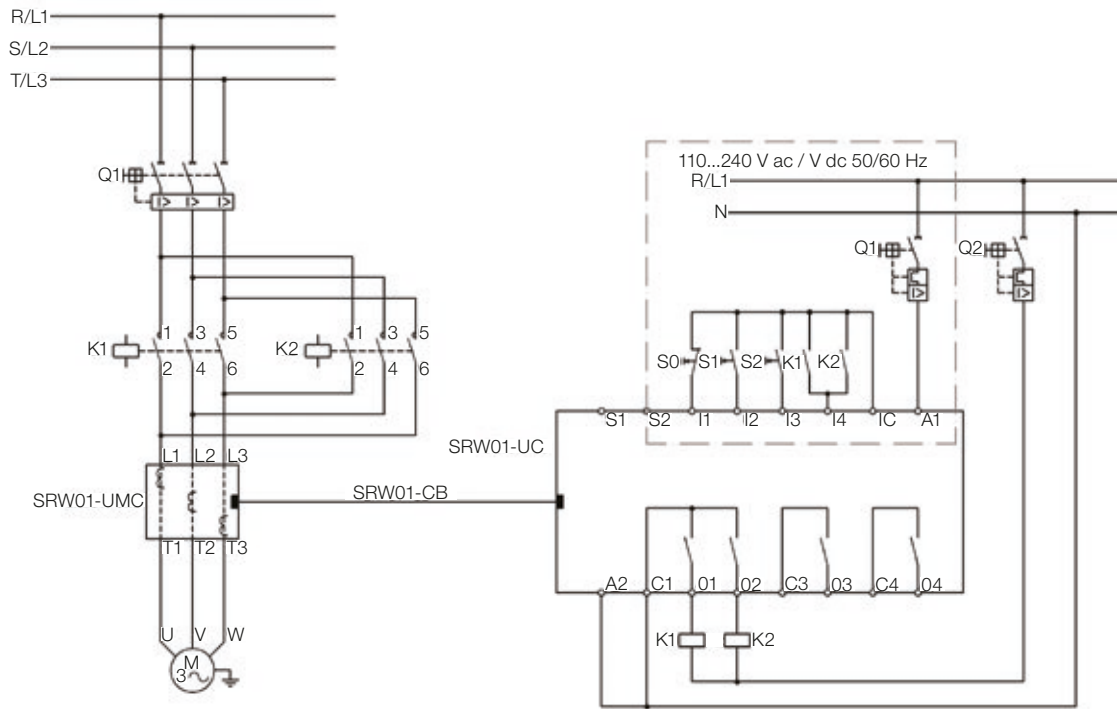


Notes: Connection diagram for the direct starter operating mode using digital inputs at 24 V dc and activation by pushbuttons (P230 = 1). For further details, refer to the user's manual of the SRW01.



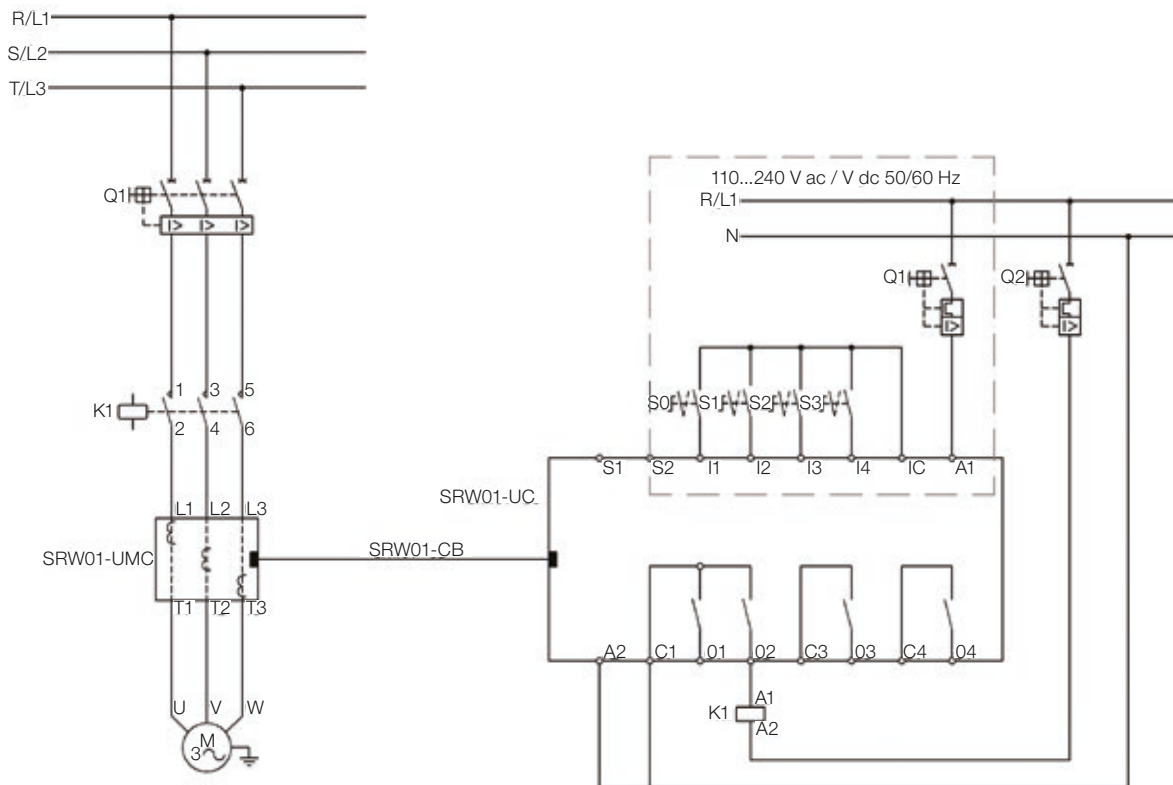
# Wiring Diagram

## Reversing Starter Operating Mode



Notes: Connection diagram for the reversing starter operating mode using digital inputs at 24 V dc and activation by pushbuttons (P230 = 1). For further details, refer to the user's manual of the SRW01.

## Overload Relay Operating Mode

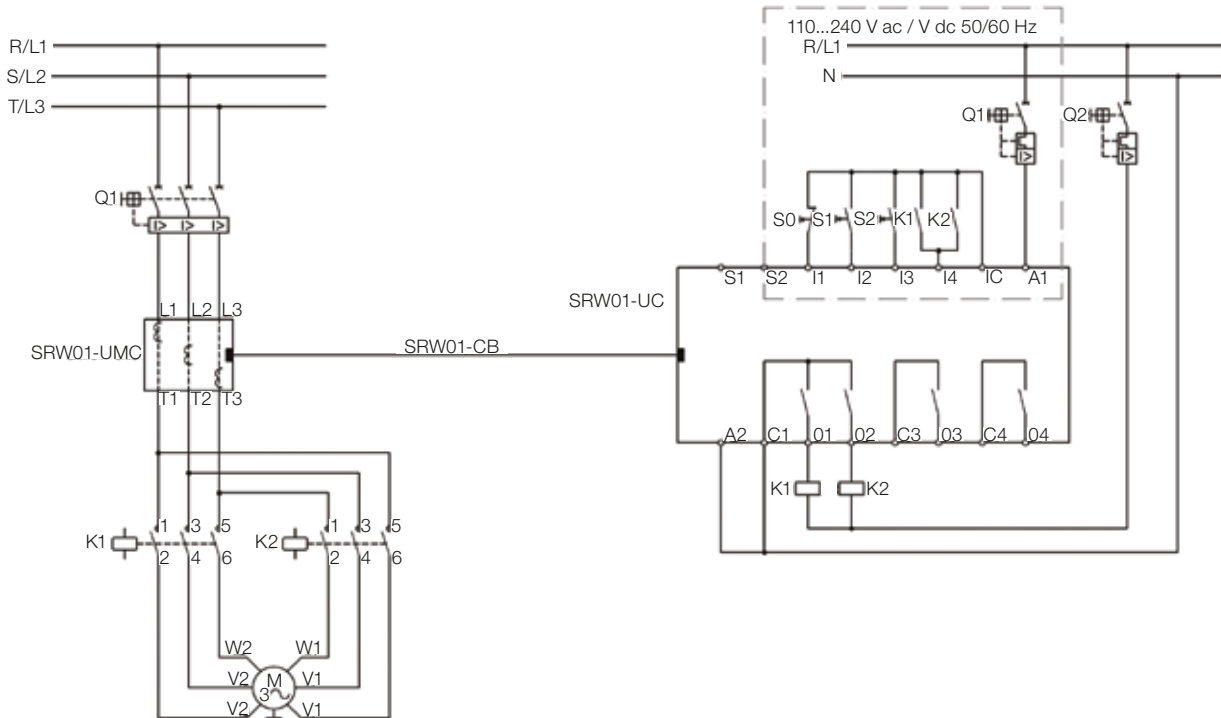


Notes: Wiring diagram for the overload relay operating mode using digital inputs at 24 V dc. For further details, refer to the user's manual of the SRW01.



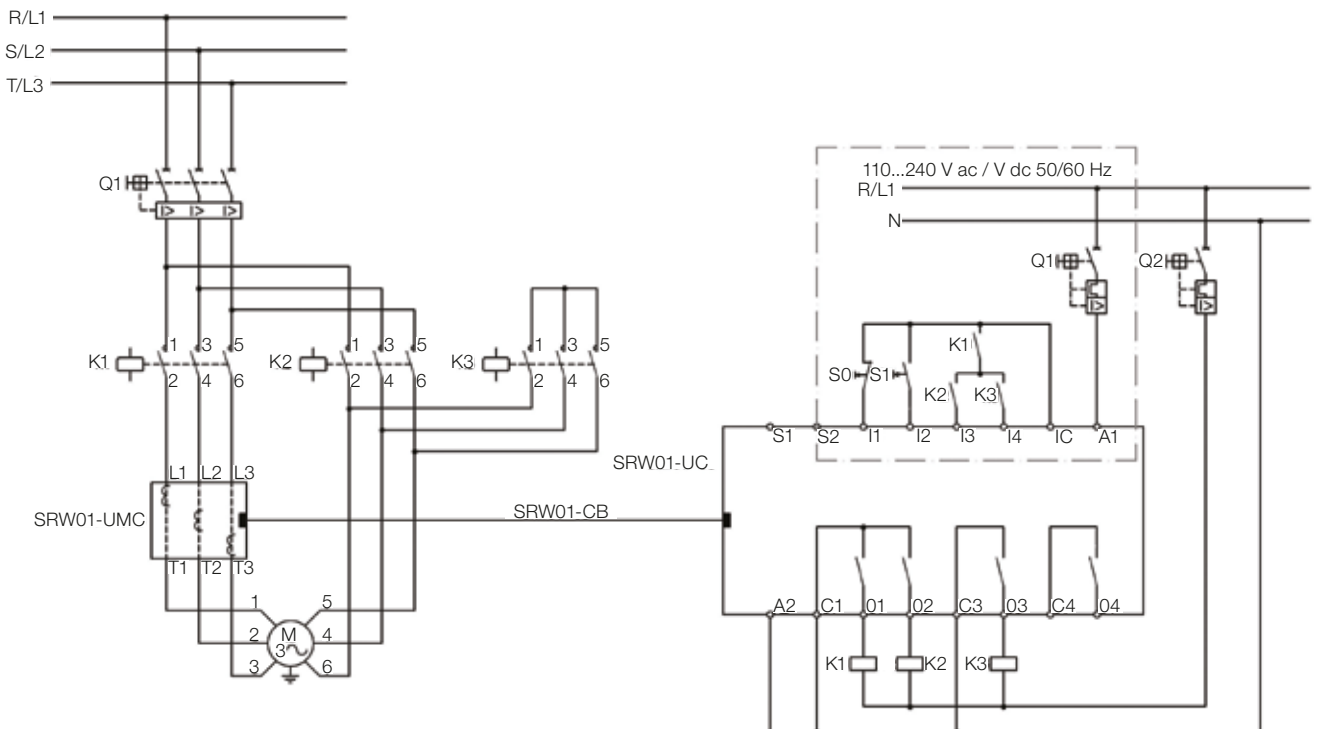
# Wiring Diagram

## Two Winding Starter Operating Mode



Notes: Connection diagram for the two winding starter operating mode using digital inputs at 24 V dc and activation by pushbuttons (P230 = 1). For further details, refer to the user's manual of the SRW01.

## Star-Delta Starter Operating Mode

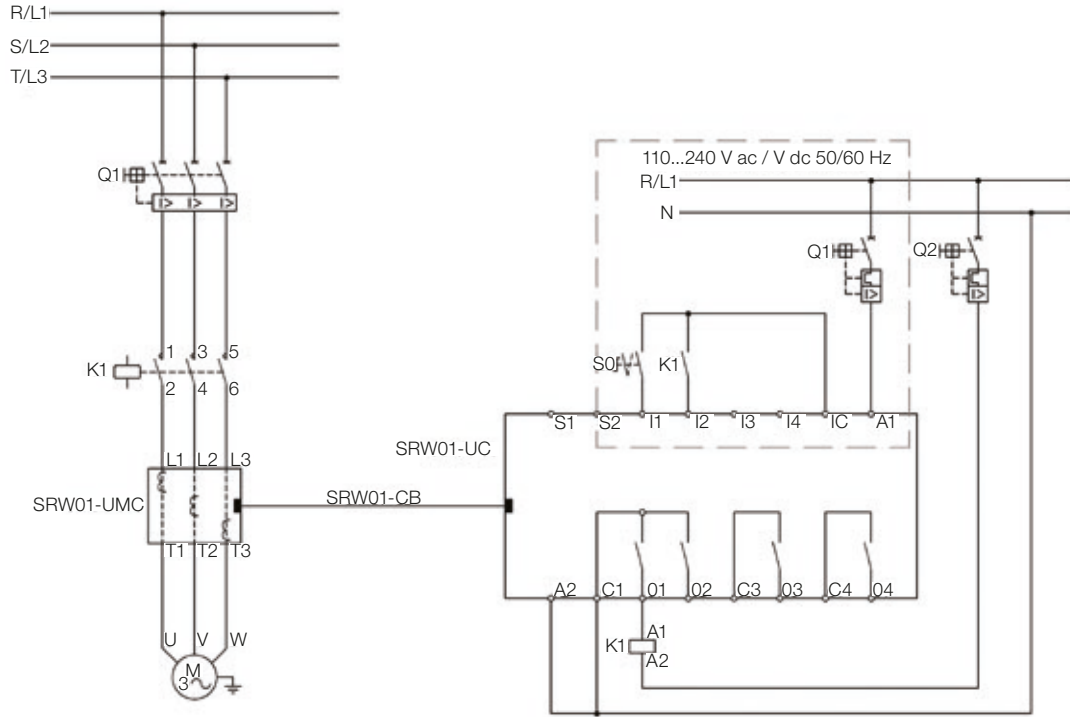


Notes: Connection diagram for the star-delta starter operating mode using digital inputs at 24 V dc and activation by pushbuttons (P230 = 1) and current measurement in delta. For further details, refer to the user's manual of the SRW01.

# Wiring Diagram

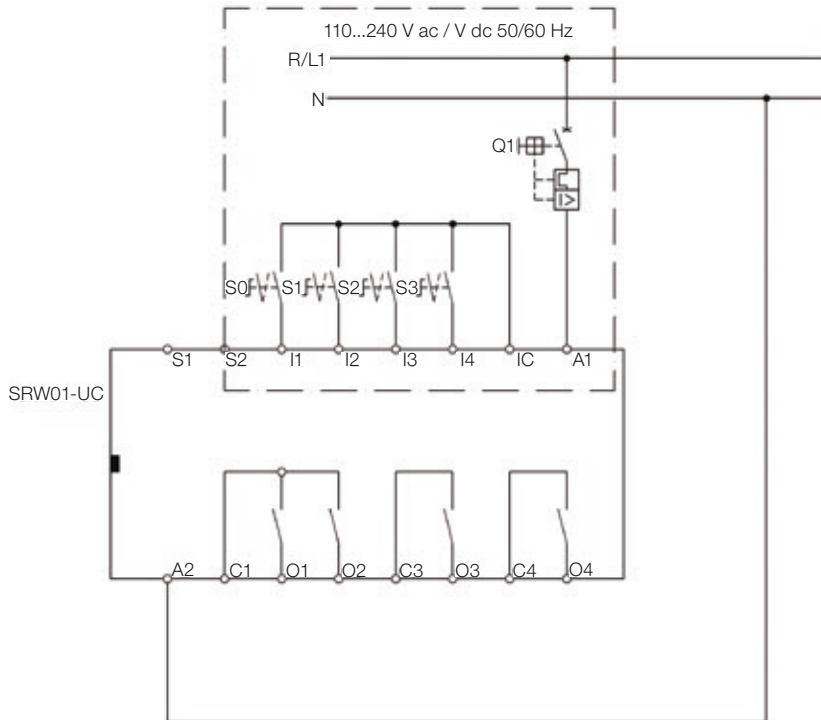
## Transparent Operating Mode

It allows the users to develop their application using ladder language through the free WLP software.



Notes: Wiring diagram for the transparent operating mode using digital inputs at 24 V dc.  
For further details, refer to the user's manual of the SRW01.

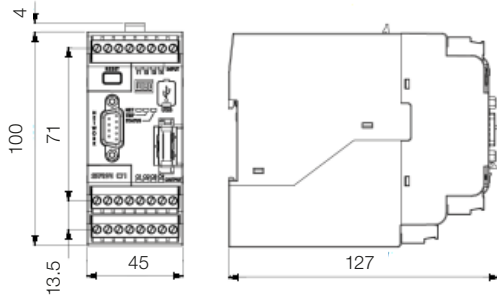
## PLC Operating Mode



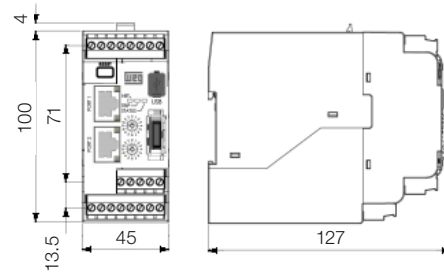
Notes: Wiring diagram for the PLC operating mode using digital inputs at 24 V dc.  
For further details, refer to the user's manual of the SRW01.

# Dimensions

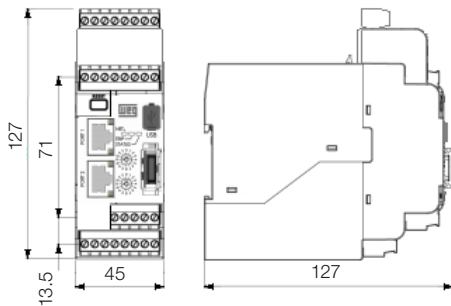
## Control Unit - UC



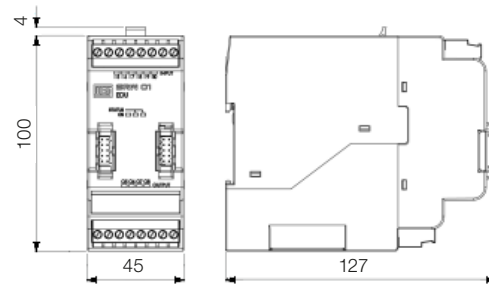
## Ethernet Control Unit - UCE



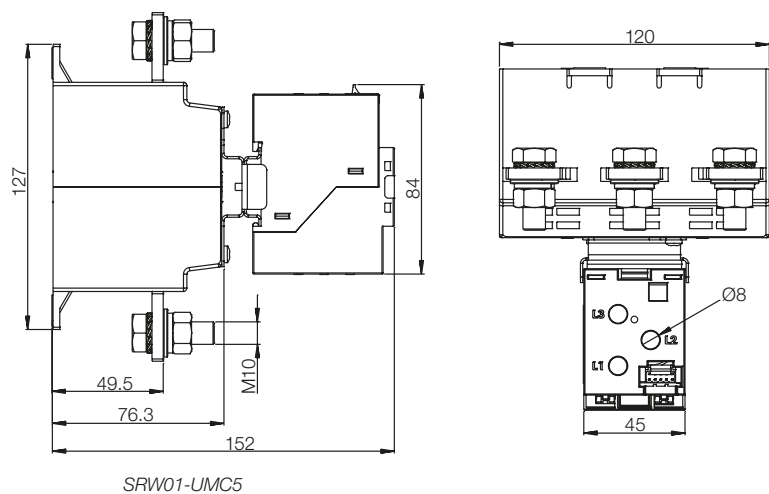
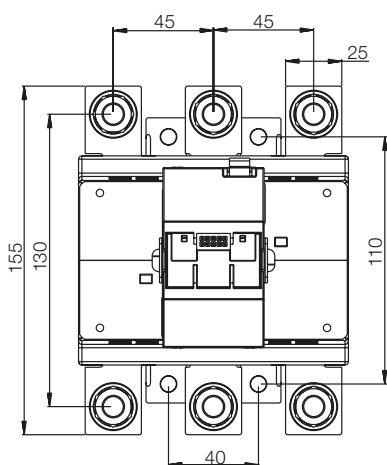
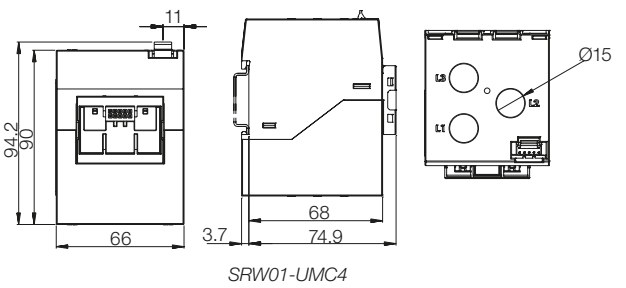
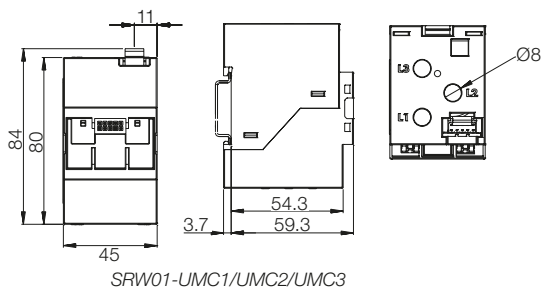
## Ethernet Control Unit - UCE + IAC



## Digital Expansion Unit - EDU

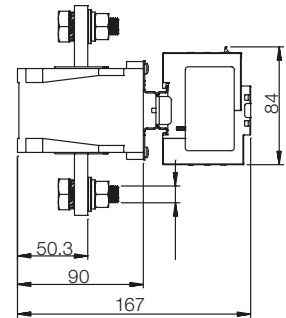
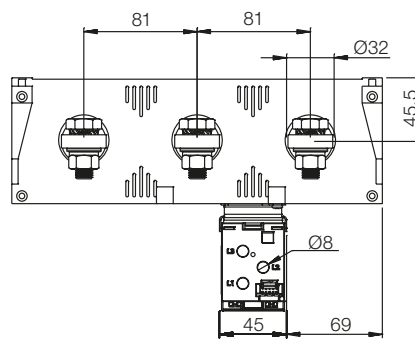
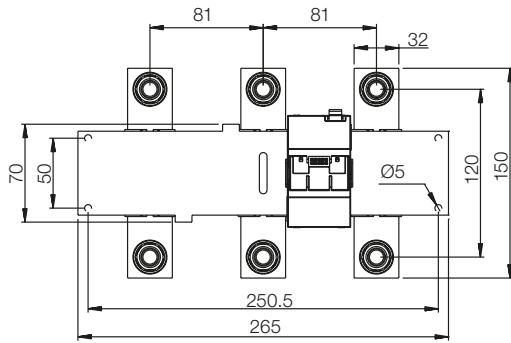


## Current Measurement Unit - UMC

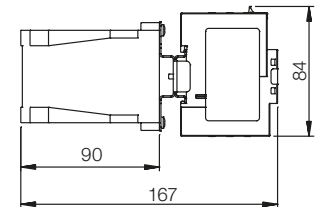
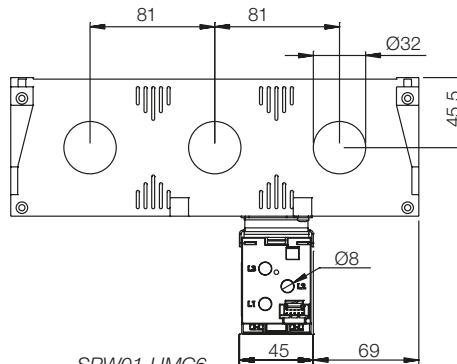
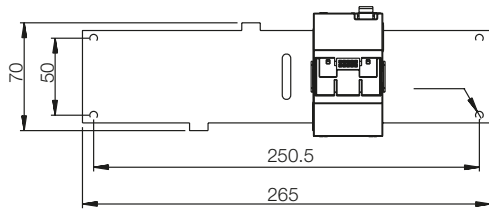


## Dimensions

### Current Measurement Unit - UMC

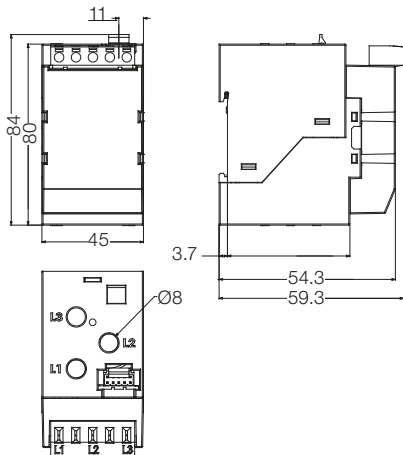


SRW01-UMC6  
(with busbar)



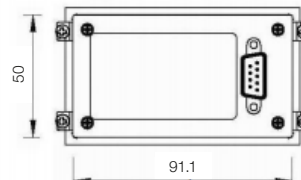
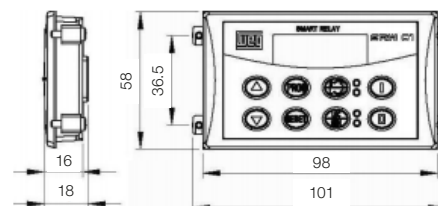
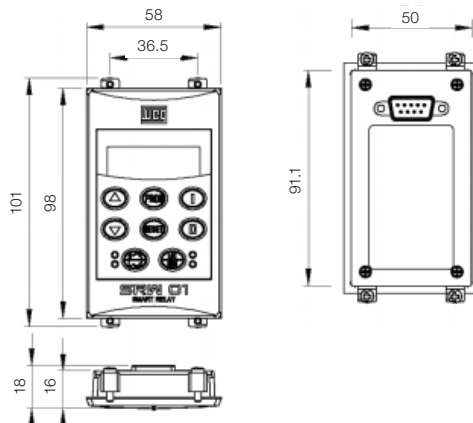
SRW01-UMC6  
(without busbar)

### Current and Voltage Measuring Unit - UMCT



SRW01-UMCT1/UMCT2/UMCT3

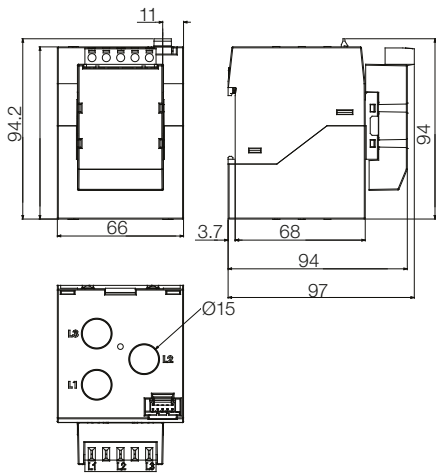
### Human Machine Interface - HMI



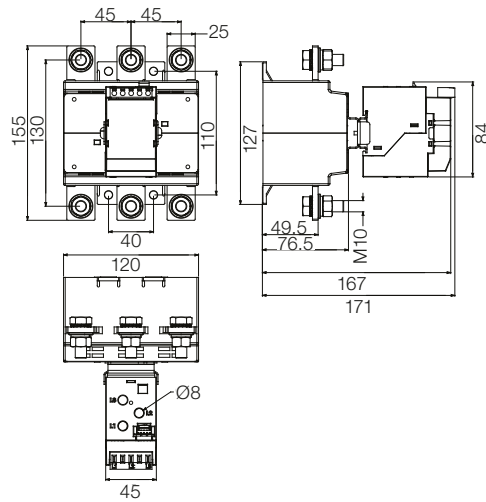


# Dimensions

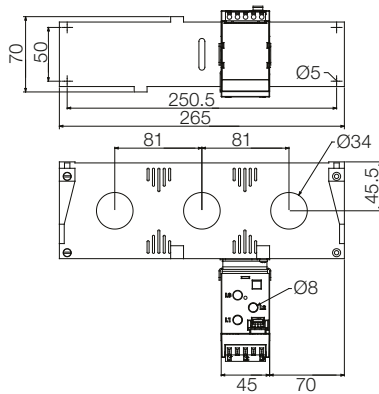
## Current and Voltage Measuring Unit - UMCT



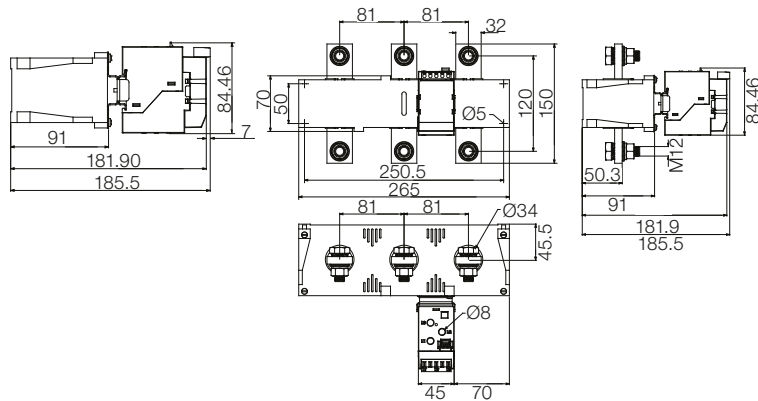
SRW01-UMCT4



SRW01-UMCT5

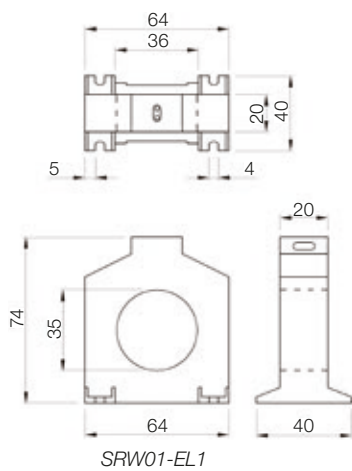


SRW01-UMCT6  
(without busbar)

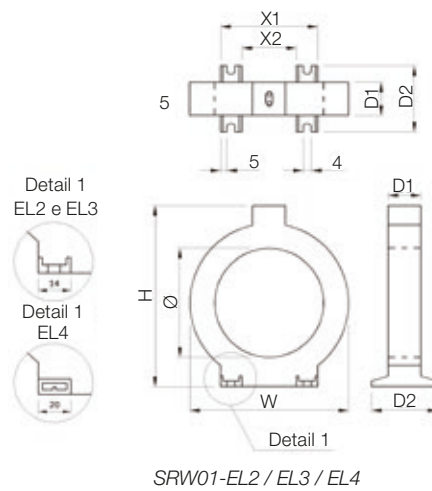


SRW01-UMCT6  
(with busbar)

## Earth Leakage Sensor (ELS)



SRW01-EL1



SRW01-EL2 / EL3 / EL4

Model	ø	H	W	X1	X2	D1	D2
EL2	70	116	104	64	36	20	40
EL3	120	169	154	94	66	20	40
EL4	210	304	290	150	110	33	90 <sup>1)</sup>

Note: 1) With base metallic support.



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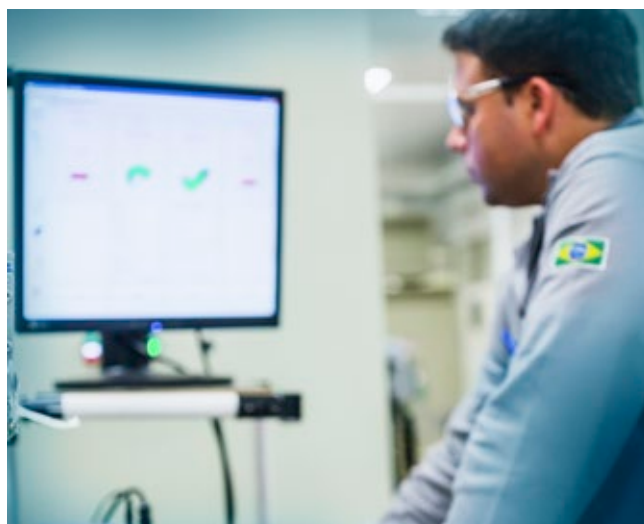
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Cod: 50022690 | Rev: 10 | Date (m/a): 05/2021.

The values shown are subject to change without prior notice.  
The information contained is reference values.