

## Products for electric vehicle charging stations





## WM3M4 Energy meter

**Class B** active energy

**Class 2** reactive energy

### Benefits

- ▶ Bi-directional metering
- ▶ MID approval
- ▶ 3-phase / 1-phase connection
- ▶ Multiple parameter measurements
- ▶ 40 A @ 70 °C
- ▶ 3 DIN module width
- ▶ Side IR for add-ons



## WM3M4C Energy meter

**Class B** active energy

**Class 2** reactive energy

### Benefits

- ▶ German Eichrecht compliant
- ▶ Bi-directional metering
- ▶ MID approval
- ▶ 3-phase / 1-phase connection
- ▶ Multiple parameter measurements
- ▶ Digital signature for a charging event
- ▶ 40 A @ 70 °C
- ▶ Public key Data Matrix
- ▶ 3 DIN module width
- ▶ Side IR for add-ons

The **WM3M4 & WM3M4C** energy meters are intended for energy measurements in the 3-phase and 1-phase electrical charger stations. The WM3M4C energy meter features **high temperature** operation and **digital signing** for a charging event, whereas WM3M4 features only **high temperature** operation. Both meters measure energy directly in 4-wire networks according to the principle of fast sampling of voltage and current signals.

A built-in **microprocessor** calculates power, energy, current, voltage, power factor, power angle, frequency, harmonics of THD voltage and THD current harmonics. WM3M4C meter can detect and log events relevant for charging via RS485 communication. Thus the meter can produce relevant **digital signature** for a charging event.

## IE14xx series Energy meter



**Class B** active energy  
**Class 2** reactive energy

### Benefits

- ▶ 40 A direct connection
- ▶ Bi-directional metering
- ▶ MID approval
- ▶ 1-phase per module
- ▶ Multiple parameter measurements
- ▶ SO, M-Bus or MODBUS
- ▶ NFC
- ▶ 1 DIN module width
- ▶ Side IR for add-ons

The meters IE14 and IE14M (MID certified) are intended for **energy measurements** in a 1-phase electrical power network, and can be used in residential, industrial and utility applications. Meters measure energy directly in **2-wire networks** according to the principle of fast sampling of voltage and current signals. They are equipped with a **capacitive touch button** that allows the user to scroll measurements and the menu, make settings, ... and **backlight** for better visibility. A **built-in microprocessor** calculates energy and other electrical quantities from the measured signals. It also controls LCD, LED, IR communication, and optional extensions.





## IE38xx series Energy meter

**Class B** active energy

**Class 2** reactive energy

### Benefits

- ▶ 80 A direct connection
- ▶ Bi-directional metering
- ▶ MID approval
- ▶ 3-phase / 1-phase connection
- ▶ Multiple parameter measurements
- ▶ Matrix LCD
- ▶ Alarm function
- ▶ NFC
- ▶ 3 DIN module width
- ▶ 80 A @ 70 °C
- ▶ Tariff input & S01, S02 or M-Bus or MODBUS
- ▶ Side IR for add-ons

The meters IE38Mx are intended for **energy measurements** in 3-phase electrical power network and can be used in residential, industrial and utility applications. Meter **measures energy** directly in 3-wire and 4-wire networks according to the principle of fast sampling of voltage and current signals.

A **built-in microprocessor** calculates energy and other electrical quantities from the measured signals. It also controls LCD, LED, IR communication and optional extensions.







## NF14

RCCB Type A up to 100 A

**Type A** is sensitive to AC and pulsating direct residual current.

### Benefits

- ▶ Short circuit capacity **10 kA**
- ▶ Special type for ambient temperature **-25 °C**
- ▶ RCCBs with left N-pole **on request**
- ▶ Suitable as **isolator**
- ▶ Rated currents **from 16 A to 100 A**



## NF14K High Immunity

RCCB Type A up to 100 A

Transient resistant RCCB type A for EV application  
High immunity against unwanted tripping at current harmonic components

### Benefits

- ▶ **Transient resistant** RCCB for EV applications
- ▶ **High immunity** against unwanted tripping at current harmonic components (e.g. frequency converters)
- ▶ **High immunity** against unwanted tripping at current impulses (e.g. a large number of fluorescent lamps, transient switching effects) or in the case of mounting under extremely critical conditions (e.g. impulse-shaped leakage currents at longer cables, storm damage, computers, x-ray devices, etc.)
- ▶ Short-time delayed RCCBs with **minimum non-actuating time 10 ms** (type G acc. to ÖVE E 8601)
- ▶ High resistance against surge currents of shape 8/20  $\mu$ s (up to 3 kA); reliable operation is assured also in case of strong making currents
- ▶ Sensitive to residual sinusoidal alternating and residual pulsating direct currents
- ▶ Rated currents up to **100 A**
- ▶ Rated residual current **30 mA**
- ▶ Two- and four-pole types available



## NFI4BK

RCCB Type B up to 80 A

**Type B** ensures the same tripping as type A together with smooth DC residual currents, residual DC currents that may result from rectifying circuits and high frequency AC residual currents. Tripping conditions for frequencies up to 1 kHz are defined.

### Benefits

- ▶ Short circuit capacity **10 kA**
- ▶ Special type for ambient temperature **-25 °C**
- ▶ RCCBs with left N-pole **on request**
- ▶ Suitable as **isolator**
- ▶ Rated currents **up to 80 A**

Residual current circuit breakers (RCCB) are used for **protection** against indirect contact, fire protection and additional protection against direct contact.

With types AC, A, B, F, G, S and short-circuit capacity 10 kA, we can cover all our customers' needs. We can deliver RCCB products in **2-pole or 4-pole versions** with residual operational currents of 30 mA, 100 mA, 300 mA and 500 mA.

The most common types for **EV charging stations** are types A and B.



## FI4-EV



### Features

- ▶ Complies with IEC 62955 (Mode 3 charging); RDC-PD with integrated AC, pulsating DC detection, evaluation and mechanical switching **in one unit**
- ▶ **Type A + 6 mA DC** available
- ▶ **Type F + 6 mA DC** available
- ▶ Voltage independent detection of AC and pulsating DC residual currents
- ▶ For evaluation of smooth direct DC residual currents voltage greater than 50 V is required which can be applied to any two poles only
- ▶ Suitable for isolation
- ▶ FI4-EV is **short-time delayed** and has increased surge current withstand capability **up to 3000 A**
- ▶ Multifunction switch toggle
- ▶ Rated residual current **30 mA**

The FI4-EV is intended exclusively for the protection of charging stations for electric vehicles. The main advantage is the compatibility with the elements of the existing electrical installation protection, which eliminates the need to replace the entire installation box.

**It provides additional protection to control pure DC differential currents of 6 mA or more.**

The FI4-EV also works as a classic RCCB type A and can be used in existing electrical installations, unlike the installation of a RCCB type B, which requires the renovation of the entire installation box.





## IKA232, IKD232 IKA432, IKD432

### Benefits

- ▶ No inrush current (with AC/DC coils)
- ▶ RFI suppression (using filters)
- ▶ **Special version:** 2-pole 32 A contactor in 1 module, manual control
- ▶ Long electrical endurance
- ▶ Switching loads of up to 21 kW
- ▶ Hum-free (DC version)
- ▶ Rated current AC-1 32A 1M 2 pole
- ▶ Rated current AC-1 32A 2M 4 pole

## IKA40 IK40

### Benefits

- ▶ No inrush current (with AC/DC coils)
- ▶ RFI suppression (using filters)
- ▶ Long electrical endurance (up to 10 million)
- ▶ Switching loads of up to 40 kW



Installation contactors are the **most flexible** switching devices in all types of applications. In electronic systems, they provide reliable, safe and efficient **management** of electrical equipment. They are mainly used for **switching loads** (up to 40 kW) such as electrical heating, lightning and other electronic equipment, and are also integrated in **EV charging stations**. We have 2-pole and 4-pole versions of up to 63 A, with an AC or AC/DC coil inside. Because of AC/DC coils, contactors are **silent** (hum-free) and without inrush current.







## RI7 series

RI71	single pole
RI72	two pole
RI73	three pole
RI74	four pole
RI71N	single pole + neutral pole
RI73N	three pole + neutral pole

### Benefits

- ▶ Protection against both overload and short circuit, function of isolation
- ▶ High short circuit capacity:  $I_{cn} = 10 \text{ kA}$
- ▶ High Rated Service Breaking Capacity [Ics]: 7.5 kA
- ▶ Contact position indicator
- ▶ 35 mm DIN rail mounting and screw mounting
- ▶ Full range accessories are available

RI series miniature circuit breakers are used for switching, conducting and switching off the current, not only in normal operating conditions but also in special conditions in a circuit such as short circuit.

They are used for overcurrent protection of house installations and industrial electric distributions and devices.

The RI series offers **B, C and D** tripping characteristics, a wide rated current range **0.5 A - 63 A** and a **full range** of available **accessories** - all of which ensures an extremely customizable solution for your needs.

