

# ADM65SCR

SINGLE PHASE TWO WIRE DIN-RAIL  
KWH METER  
WITH RS-485 COMMUNICATION

## USER MANUAL

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- ◆ADM65SCR,Single phase DIN-Rail kwh meter with RS-485 communication,which is a kind of new style single phase two wire active energy meter, which adopts micro-electronics technique, and imported large scale integrate circuit, using advanced technique of digital and SMT techniques, etc.
- ◆The meter completely accord with relevant technical requirements of class 1.0 single phase active energy meter stipulated in international standard IEC 62053-21. It can accurately and directly measure 50Hz active energy consumption from single phase two wire AC electricity net.
- ◆With a compact design, and due to international 35 mm DIN-rail mounting, it is very quick and easy to install . It has many advantages such as compact, light,delicate, accurate. With good capability of anti-EMI and low-power,it's widely used to office buildings, shopping malls, residences, airports and metro etc.

1

## USER MANUAL

### Specifications:

Nominal voltage ( Un)	220VAC
Operation voltage	176~264VAC
Insulation capabilities	
AC voltage withstand	2kV for 1 minute
Impulse voltage withstand	6kV - 1,2/50µs waveform
Operation current	5(16)A
Operation current range	0.02 ~ 16A
Starting current	at Cos-Phi=1 typical 20mA
Operational frequency range	50Hz ± 10%
Internal power consumption	Voltage Circuit ≤1.0W 5VA Current Circuit ≤1VA(Ib)
Mounting	on a DIN-rail corresponding to DIN EN50022
ITE	35 mm (DIN43880)
Interface	optical coupler (SO corresponding to DIN 43864)
Display	6+1 digits=999999,1kWH
3 color LED: Green indicator (Power)	After power-supply has been connected, and the consumption is less than 4 W or no load,
Flasing Red (Impulse)	After power-supply has been connected,and the consumption is more than 4W, flashing rate=consumption rate,
Blue (COM-RS485)	After conneted with RS485, Lighting if communiaton is working well; flasing if send back signals to software/collector;power off if communication is not function.
Dimension	35 × 88 × 66 mm (w × d × h)
Weight	Approx. 200g

2

## USER MANUAL

### Performance criteria:

◆International standard	IEC62053-21, EN62052
◆Accuracy	Class 1.0
◆Operation temperature	-25°C ~ +65°C
◆Storage temperature	-30°C ~ +70°C
◆Relative humidity	≤ 85%

### Error limits:

Value of Current	Power Factor	Error Limits
0.05/0.02Ib	1	±1,5%
0.1/0.05Ib	0,5L	±1,5%
0.1/0.05Ib	0,8C	±1,5%
0.1Ib/0.05Ib~ Imax	1	±1,0%
0.2Ib/0.1Ib~ Imax	0,5L	±1,0%
0.2Ib/0.1Ib~ Imax	0,8C	±1,0%

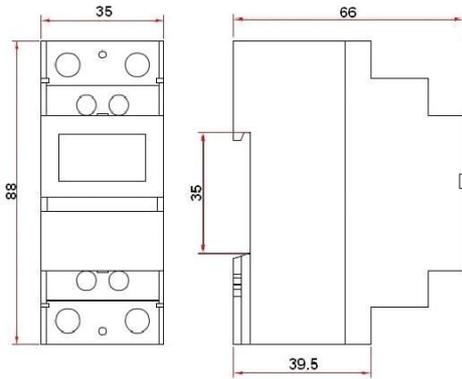
### Features and Functions:

- ◆Measurement function: Single direction measure single phase two wire active power consumption. It is nothing with direction of the direction of the trend of bad current;
- ◆Display total energy consumption by LCD;
- ◆Three LED lamp, green lamp is Power indicator,red lamp is impulse indicator,blue lamp is RS485 communication indicator.
- ◆35mm standard DIN-rain installation or front board setting;
- ◆Standard configuration pulse output with no power;
- ◆Adopt high reliability and long-life electric components, high in overload, do not need to calibrate for long-term operation. ◆RS-485 communication function,through RS-485 communication network for long-distance meter reading or centralized management.conformed with DL/T645-1997 Communication protocol.

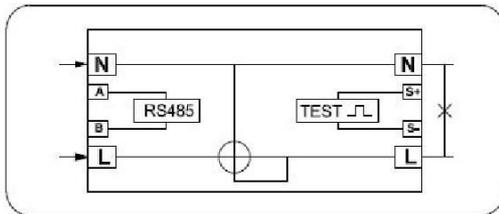
3

## USER MANUAL

### Dimension:



### Wiring diagram:



### Impulse:

The ADM65SCR, DIN-Rail kWh meter is equipped with an impulse output. To test the impulse output connect 5VDC to connector S+ and connector S-.

4

## USER MANUAL

### Safety precaution:

- ◆ Installation, maintenance and repair should only be done by a certified electrician.
- ◆ Use only isolated tools.
- ◆ Do not connect the meter to a 3 phase 380V power grid net.
- ◆ Place the meter only in dry surroundings.
- ◆ Make sure the used wires are suitable for the max current the meter can measure.
- ◆ Make sure the AC wires are installed correctly before activating the current / voltage.
- ◆ Do not touch the meter connection clamps directly with your bare hands, with metal, blank wire or other material as you would have the change of the electricity shock and a possible change for health damage.
- ◆ Make sure the protection cover is placed after installation and has been sealed.
- ◆ When the meter is taken out of the package and the casing might be damaged or broken, do NOT connect the meter but contact your dealer.
- ◆ Never break the seals or open the front cover as this might influence the functionality of the meter and would be dangerous.
- ◆ Do not throw, drop, kick or do other physical violence to the meter as there are high precious components inside which would break or make the meter measure inaccurate.
- ◆ Do not mount the meter in areas with harm gas, dust, mildew or insects or on unstable surfaces.

5

## USER MANUAL

### Installation Guide

- ◆ Verified version: 220V  $\pm$  20%, Max. 16A, 50Hz (see meter).
- ◆ For monitoring purpose only.
- ◆ For internal measurements: electrical operational/ limiting values are valid.
- ◆ Power supply:  
Corresponding with mode of connection 1000 of DIN 43856.  
Phase supply lead "L" to terminal L1.  
Neutral supply lead "N" to terminal L2/N.  
Phase consumption lead "L" to terminal L3.  
Neutral consumption lead "N" to terminal L4/N.  
A and B are terminals of RS485 communication.
- ◆ Fuses and wiring:  
For fuse 5A, tripping characteristic B; Min wire thickness 1,5mm<sup>2</sup>.  
For fuse 16A, tripping characteristic B; Min wire thickness 2,5mm<sup>2</sup>.
- ◆ Passive impulse contact:  
corresponding to "SO" conditions of DIN 43864:  
18~ 27V; max 27mA, max length of lead 20m.  
impulse length >30ms, connection to terminal S1+ and S2-.
- ◆ Limits of values: max 60VDC, max 60mA.
- ◆ Diode against wrong connection is integrated (parallel).

6

## USER MANUAL

### Installation:

- ◆ The meter can be installed and used after being tested and sealed.
- ◆ The meter must be installed on a good ventilated and dry place.
- ◆ You can choose different ways of installation such as 35mm DIN-Rail or can be screwed against the base board
- ◆ The board must be on a fire resistant and vibration free wall. ◆ In dusty environments the meter must be installed in a protective box.
- ◆ Connection must be made in accordance with the drawing in this manual or the drawing on the meter. Use a brass connector to avoid overheating due to loosing contacts.
- ◆ When the meter is installed in an area with lots of thunderstorm, a protection against lightning is required.
- ◆ The load capacity of the meter is between 0.05Ib~ Imax (direct), if the capacity exceeds above mentioned value, the LCD would not be accurate or the current coil would be overheated.

### Guarantee limit

Within 18 months since the delivery date, if it is found that the product doesn't conform to the standards, it will be repaired or replaced free on the condition that the customers operate it according to the instruction manual and the seal is intact.

7