

Local Communication and Inputs Outputs

- 2 x RS485 serial interface
 - 35kV impact resistance
 - IEC62056-21, DLMS-COSEM and MOD-BUS-RTU protocols.
 - Communicate with electric meters, energy analyzers and astronomical time clocks
 - Automatic Baud Rate selection
- 4 x 12kV isolated digital input
- 3 x 250VAC/10A Relay output (NO/NC 3 pin)
- 2 x 0-10V analog input (optional)
- 2 x digital output (optional)
- 1 x 10/100 ETHERNET (optional)
- 1 x USB 2.0 (optional)

Power Supply Module

- High voltage and current limiting protected, line filter designed, modular SMPS power supply
 - 54-285 VAC Mono-Phase (L-N)
 - 54-450 VAC Mono-Phase (L-N)
 - 100-460 VAC Three-Phase (R-S-T-N)
 - 12-60 VDC DC
- 12-30VDC backup DC power supply input (power in case of outage) (optional)

Communication Module

- 2G (GPRS) : 900/1800 MHz
- 2G/4G (GPRS/LTE) : 900/1800 MHz (2G) - B1/B3/B5/B7/B8/B20 (4G-LTE)
- NB-IoT (Narrow Band) : B1/B2/B3/B4/B5/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B66/B70/B85
- SIM card and E-SIM (Embedded SIM)
- SMA External antenna connector
- APN and configuration/provisioning via SMS
- Remote update
- Instant GSM signal quality indicator
- Cellular location detection

Processor and Embedded Software

- 900MHz ARM Cortex A7 microprocessor
- 512 MB FLASH memory storage
- 128 MB RAM
- LINUX Operating System
- Communication with MQTT protocol
- Remote software update
- SSL encrypted data transfer,
- 3DES cryptography algorithm
- Ability to connection with different head-end systems and transfer data at the same time

Additional Hardware Features

- A problem arises in the software or hardware, SMOD-M automatically HARD RESTARTs itself.
- Ability to work 60-120 minutes in power cut. (Lithium-Polymer internal battery)
- Sending instantaneous Power Cut alarm
- Ability to work as an Astronomical Time Clock (with internal relay contacts)
- RTC and NTP real time clock
- Sending terminal cover alarm
- Auto restart

Physical Properties

- IP54 protection, UL 94 V0 fire resistance standards
- Box with dimensions of 185 x 125 x 57 mm suitable for suspension bracket and DIN rail mounting
- -40 / +70 C operating temperature

LED Indicators

- Power Indicator LED (1x)
- GSM Indicator LED (1x)
- IP Indicator LED (1x)
- RS485 Indicator LED (1x)
- Relay Indicator LEDs (3x)
- GSM signal quality LEDs (5x)

Certificates

- EMC and LVD certifications
- CE certification



TWO-WAY
DATA
TRANSMISSION

SCHEDULED
OPERATIONS

INTERNAL
BATTERY

SMART
RESET

HEAD-END
INDEPENDENT
ARCHITECTURE

MODULAR
HARDWARE
DESIGN

SMOD-M

Akıllı Haberleşme Ünitesi





Working Solo in the Field

Even if the connection to the central server is lost, sMOD-M works alone in the field, continuing to read data regularly and perform scheduled tasks.



Uninterrupted Operation in Power Outages

In case of power failure, sMOD-M generates an instant "power failure" alarm and sends it to the central server. Thanks to its internal battery, it continues to work in case of power failure and transmits the stored data to the central server.



SCADA (IEC-104) Protocol Integration

sMOD-M can be integrated with SCADA management systems thanks to IEC-104 protocol support over Ethernet or GSM Communication.



Ability to Operate as an Astronomical Time Clock (ATC)

sMOD-M can control lighting without the need for an external ATC hardware with the astronomical time clock application and internal relay control installed in its software. In addition, the internal ATC parameters can be controlled remotely.



MODBUS-RTU Communication Protocol Support

With its MODBUS-RTU protocol, sMOD-M can be used as Energy Analyzer, Astronomical Time Clock etc. You can read and manage field devices remotely.



Hard Reset

Easy Integration with Different Head-End Management Systems



Easy Integration with Different Head-End Management Systems

sMOD-M can be easily integrated into different head-end management systems with JSON-based reading data and MQTT communication protocol.



Modular Hardware Design

sMOD-M, which is a completely domestic R&D project, has a modular hardware design and can work with different connection interfaces, different communication infrastructures or different supply voltages.

sMOD-M can communicate over the same line (single RS485 line) with all the devices shown in the panel below, thanks to its RS485 communication interface with improved $\pm 35KV$ impact resistance.

sMOD-M also has an optional second RS485 connection interface.

Ability to read local/foreign meters with DLMS/COSEM protocol

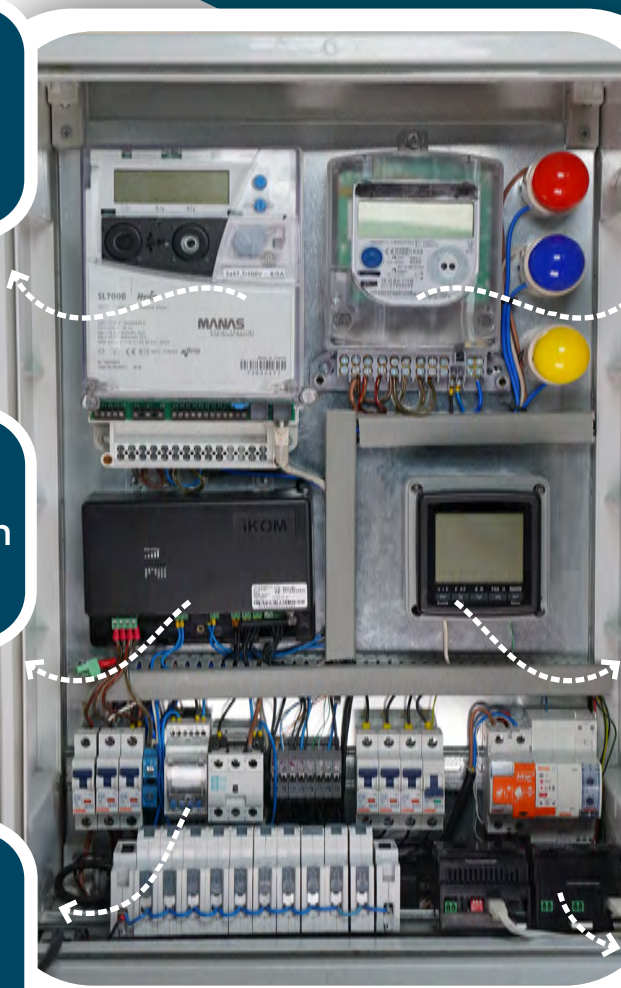
Ability to read domestic/foreign meters with IEC 62056-21 protocol

Smart Communication Unit

Being able to communicate with Energy Analyzers with MODBUS-RTU protocol

With Astronomical Time Clocks with MODBUS-RTU protocol communication (remote setting and reading)

Communication (alarm generation) with Extended IO Control Modules with MODBUS-RTU protocol



Power Supply Unit

Modular supply module with advanced protection methods,

- Modular design,
- High stability with SMPS technology,
- High current and high voltage protections,
- Not being affected by mains noises with input line filter protection,
- Protection with high impact resistance.

Versions

54-285 VAC Mono Phase (L-N) Power Stage

54-450 VAC Mono Phase (L-N) Power Stage

100-460 VAC Three Mono-Phase (R-S-T-N) Power Stage

12-60 VDC DC Power Stage

GSM Modulated Unit

Modular supply module with advanced protection methods,

- Modular design,
- High stability with SMPS technology,
- High current and high voltage protections,
- Not being affected by mains noises with input line filter protection,
- Protection with high impact resistance.

Communication module designed in a modular structure to enable rapid adaptation to field demands and innovative communication technologies,

• Modular design,

• Physical SIM card and optional

E-SIM (embedded SIM) support,

• Instant GSM Signal level monitoring,

• Ability to receive instant reports and

• update settings remotely via SMS,

• External antenna

• connection possibility with

SMA antenna connector.

Versions

2G module (800-900-1800-1900 MHz)

2G/4G module (B1/B3/B5/B7/B8/B20)

Nb-IoT module (B1/B2/B3/B4/B5/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B66/B70/B85)

LoRa module (433/868 MHz)



- sMOD-M is the first modem with the eligibility criteria specified in the 2022 TEDAŞ Technical Specification.
- It has the "Domestic Goods Certificate" prepared by the Ministry of Industry and Technology of the Republic of Turkey.
- It is one of the stakeholders of the MASS (National Smart Meter Systems) Project, which aims to define measurement systems for smart grid transformation in an intelligent structure.
- Having the most experienced engineer staff in the field of AMR in the sector, İkom Bilişim is the leading company of the sector with its products designed and developed by its own engineers.