

<p>HEDNO S.A. SPECIFICATION</p>	<p>COMMUNICATION UNIT (MODEM) FOR "SMART" ELECTRONIC LOW VOLTAGE METERS</p>	<p>ND/374/Rev. 03.02.2021</p>
		
<p>Issued by the Metering Branch</p>	<p>Network Department</p>	

TECHNICAL SPECIFICATION OF COMMUNICATION UNIT FOR SMART ELECTRONIC LOW VOLTAGE METERS

The communication unit (modem) that will be used for the communication link of the "smart" electronic L.V. meters for electrical energy with Telemetry System for the transfer of metering data shall:

1. Be of **GSM/GPRS/4G** type.
2. Be GPRS multislots Class 8 or higher.
3. Support communication based on the full DLMS/COSEM protocol (TCP/IP & HDLC).
4. Have "Transparent" operation capability.
5. Support static IP address for GPRS/4G communication.
6. Operate with all mobile communication networks of the country.
7. Perform automatic switching to GSM communication with capability for automatic restoration to GPRS/4G communication, when the signal is lost in case of GPRS/4G communication.
8. Auto restart in order to find GSM or GPRS/4G communication signal in case of voltage loss and subsequent voltage restoration.
9. Send last gasp message to the Telemetry System in case of voltage outage lasting at least 30 sec. In the meter/modem, the minimum voltage outage time can be programmed (from 10 to 30 sec.) in order for the meter/modem to send last gasp message. Furthermore, when the voltage is restored, «First Breath» message will be sent to the Telemetry System within 2 min. from the voltage restoration.
10. Be capable to automatically reboot at regular intervals, configurable from 1 to 24 hours.
11. Be able to remotely change the communication mode from GSM to GPRS/4G and vice versa.
12. Provide capability for reading and parameterization (speed, codes, communication status, signal strength, etc.) via remote commands.
13. Be modular.
14. Be plug-in/modular on the front side of the meter and the SIM card to be protected in order to be replaced only by authorized personnel.
15. Access to the modem (e.g. for testing, replacement, SIM card replacement, etc.) shall be secured with sealing, but without requiring the opening of the main meter cover or violation of the metrological meter sealing.
16. Be directly powered by the meter without any external power supply.
17. Be accompanied by an appropriate antenna of suitable gain and dimensions with SMA male terminal, in order to be able to be installed inside the modem cover or to be internal inside the modem. In case the

antenna is internal to the modem, the modem must have a SMA Female terminal for optional external antenna connection.

18. Provide operating indications and signal strength on meter's display and provide operating indications (using LED) which are visible when the meter and the modem are fully installed.
19. Provide device for placement of the SIM card.
20. Operate in accordance with meters communication protocols EN / IEC 62056-21 and DLMS/COSEM.
21. Operate smoothly (uninterrupted) at the following environmental conditions:
 - Operating temperature range -20°C to +55°C
 - Annual mean humidity up to 75% (IEC 62052-11).
22. Have the CE mark and conform with the E.U. regulation Radio Equipment Directive 2014/53/EU (RED).
23. Provide protection (in conjunction with the meter power supply) against overvoltages.
24. Modem configuration software accompanied by software licenses shall be provided.
25. Be delivered parameterized, according to HEDNO guidelines.
26. Have degree of protection IP51 (IEC 60529) or higher in conjunction with its installation on the meter.
27. Have a protection system against destruction of the SIM card when the card is removed from the modem without prior disconnection of the modem power supply.
28. Not require recharge or/and new parameterization for its immediate operation, in case of storing it for at least 36 month period.

PACKING

29. The modems shall be placed, carefully packed, inside protective cardboard boxes.
30. The cardboard boxes shall be placed on EU palettes to facilitate transport.
31. These boxes shall be externally and indelibly marked with the Contract number, the material Code and the Manufacturer's Data.

SAMPLE

It is required to submit sample of the communication unit – antenna, with the parameterization software for testing of the seamless communication and meter data transfer between meters – communication units and the Telemetry

System through the mobile carrier.