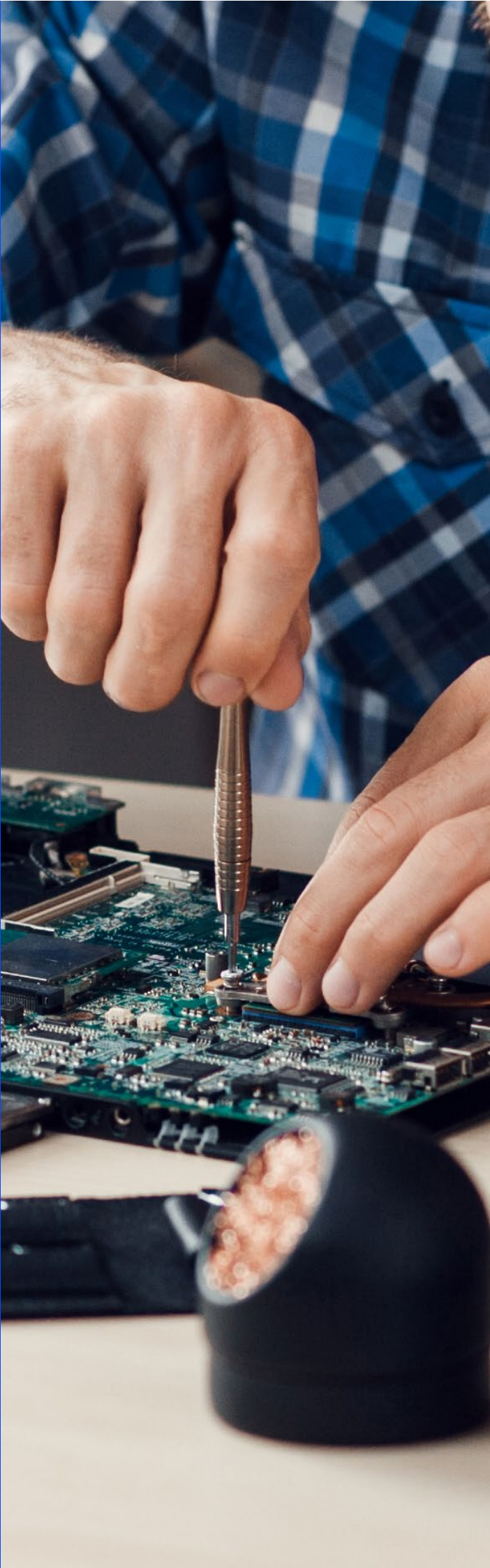




# Smart Utility Meter

## Cedar-20



## Introduction

The Smart Utility Meter is a proven smart meter designed to fit in powerful grid systems for monitoring and control of electricity consumption.

The SUM electricity meter series ensure a high-power transmission without distortion, also optimized for low impedance lines, without affecting line impedance. The meters are compliant with IEC and DLMS/COSEM standards and have been designed to serve billing purposes.

The SUM single phase meter is a two-wire device, dedicated to generating prepaid/postpaid bills that are delicately calculated using accurate measurement interfaces.

Rated for 220V – 50Hz, and with the ability to measure currents for up to 100 Amps, this meter contains an independent measuring element, thus allowing consumed energy to be measured on both line and neutral phases. All while providing the user with the ability to visualize various accessible parameters on an LCD screen located on top of the meter with couple of led indicators.

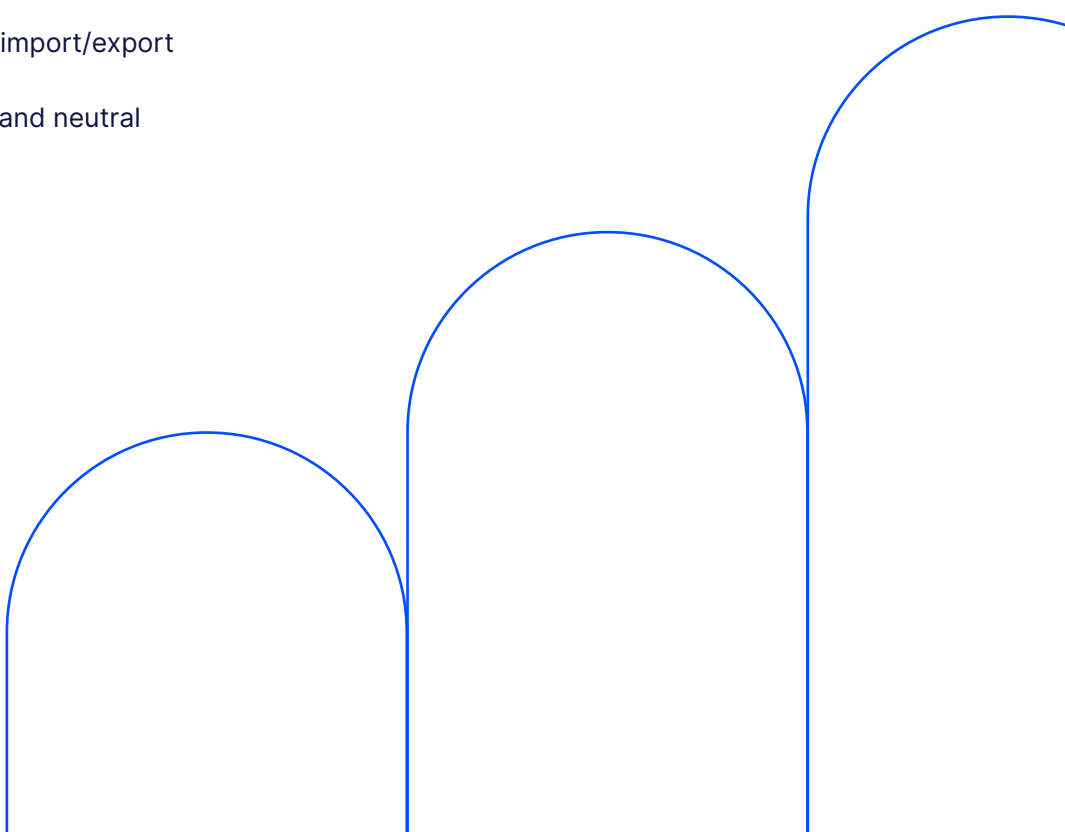
The modular nature of the meter means that its communications interface supports a broad range of customizable communications options including but not limited to various PLC and RF protocols.

# Key features and versatile capabilities for an optimized performance and overall control

## Key features

- PRIME communication interface
- Compliant with IEC and DLMS/COSEM
- Modular communication interface
- Programmable relay (Line and Neutral Control)
- Zero crossing switching
- 1 RS485 interface (HDLC)
- Optical interface (HDLC Mode E)
- Remote firmware upgrade
- Alarms and events logs
- Covers opening detection
- Security attacks detection
- Current bypass connection
- Auto-diagnostics
- Instantaneous measurements
- Quadrants: Q1 / Q2 / Q3 / Q4, import/export (net metering)
- Current measurement for line and neutral

## Flexibility

- NON-technical losses detection by comparing line and neutral currents
  - In-house software and hardware design expedite change request and feature additions
  - Modular communication interface helps overcome connectivity issues
  - Modular power supply provides ability of voltage input range change if desired
  - General purpose auxiliary interface (1 input, 2 outputs) to synchronize with external events
- 

# 01 Capabilities

## Metering

Accurate  
Instantaneous  
Cumulative  
Net metering  
Load profile  
Time of use

## Safety

Certified to IEC  
CE label  
Class 2 isolated  
Recessed screws  
Fire rated enclosure  
Zero voltage switching

## Interface

Simple  
Single button  
Easy to read  
High contrast display  
Customizable indicators

## Security

2 tamper switches  
Sealed compartment  
Protected configuration  
Real-time alarm

## Reliability

100,000 hours MTBF  
20 years data retention

## Customizable

Quick turnaround time for  
feature or change request



# 02 Specifications

## Voltage

Nominal voltage: 160V to 265V  
phase-to-neutral

## Frequency

Nominal frequency:  
50 Hz  $\pm 5\%$

## Power consumption

Apparent power: <10VA

## Installation

**Mounting:** DIN 43857  
**Enclosure:** outdoor (IP54)  
class 2 isolated auxiliary  
**Wiring terminals:** wire size 0.4mm-  
1.3mm diameter  
**Power and load wires:** up to 50mm<sup>2</sup>

## Current

(amperage depends on local  
regulatory requirements)  
Basic: 5A  
Maximum: 100A

## Service & connection types

Single phase two wire service  
Direct line/load connections

## Temperature & humidity

**Specified operating range:** -40° to +70° C  
(3K7). Display fully operational from -25°  
to +60° C. Humidity:  $\leq 95\%$  RH, non-  
condensing.  
**Storage and transport:** -40° to +85° C.  
Humidity:  $\leq 85\%$  RH, non-condensing.  
Must remain sealed within the desiccant  
bags in which they are shipped to meet  
storage and transport ratings.

## Communications

**PRIME 1.3.6**, CENELEC A-band  
power line communication channel.  
**Optical Port** IEC 62056-21  
**Isolated** current loop with external  
RS485 adapter.  
**DLMS** Security Suites 0 & 1.

## Load disconnect

UC3 compliant up to 100A  
Mechanical endurance: 100,000 cycles  
Electrical endurance: 10,000 cycles  
Maximum overload current: 120A, 150A  
(30 minutes)  
Maximum switching voltage: 265VAC  
Maximum switching power: 30,000VA

## Certifications

### Measurement accuracy compliance

#### Active energy:

- IEC 62053-21 Class 1

#### Reactive energy:

- IEC 62053-23 Class 2

**Environment:** IEC 62052-11

**Tariff and load control:** IEC 62054-21

**Safety ratings:** IEC 61010-1 CE marked.

Timing/Real-time clock: accurate per IEC  
62052-21 [2004] and IEC

### Communication:

CENELEC A EN50065

PRIME

Optical port IEC 62056-21

**Data:** DLMS/COSEM

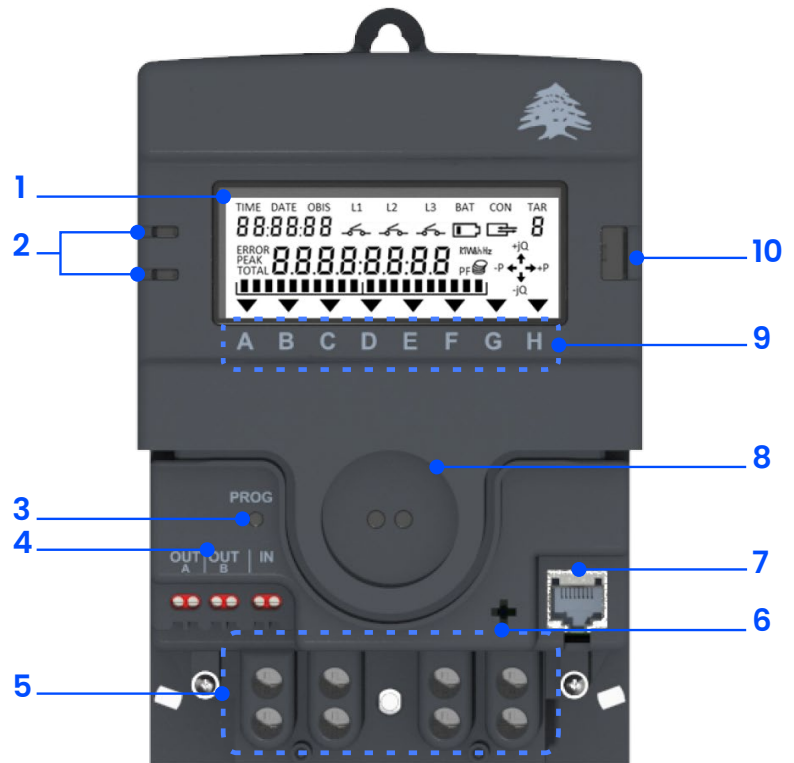


# 03

## Description

### Detailed component breakdown

1. LCD screen
2. LED indicators
3. Programming button
4. Auxiliary connectors
5. Terminal block
6. Serial connector
7. Tamper switch
8. Optical port
9. Customizable indicators
10. User button



#### LCD screen

Displays major power and energy parameters

#### LED indicators

Blink to indicate energy consumption

#### Terminal block

Input and output power connector

#### Auxiliary connectors

Connectors for general-purpose IOs (1 input and 2 outputs), that are only accessible after taking off the cover (sealing screw is not present)

#### Programming button

Configuration button, that is only accessible after taking off the cover (sealing screw is not present), to limit access to authorized personnel

#### Serial connector

Serial port that provides direct access to the meter, for programming and configuration purposes

#### Tamper switch

Main tamper switch to detect the possible removal of the cover/sealing screw

#### Optical port

Local standard communication port that supports all remote communication features

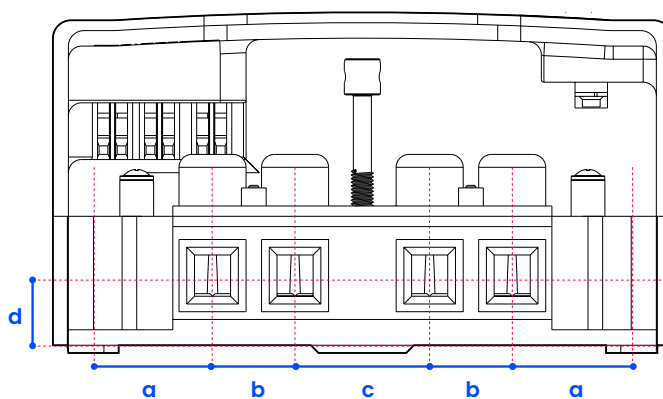
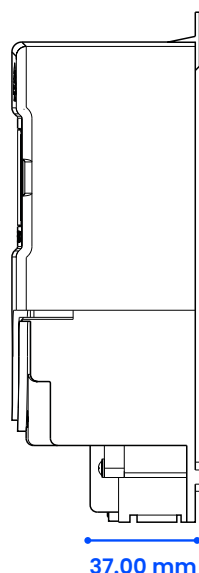
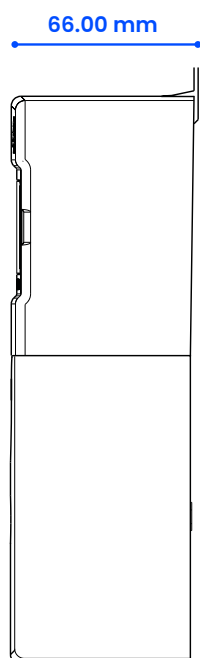
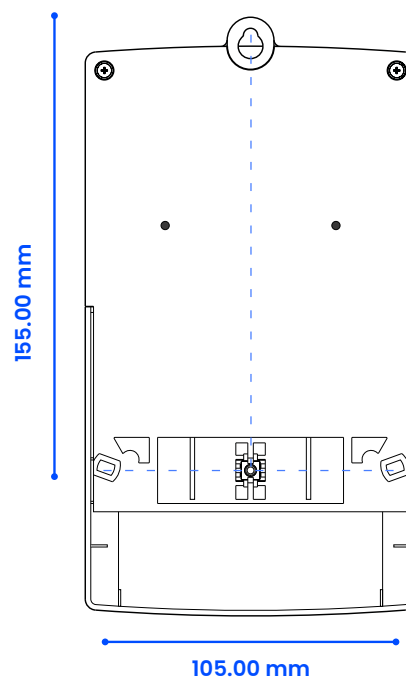
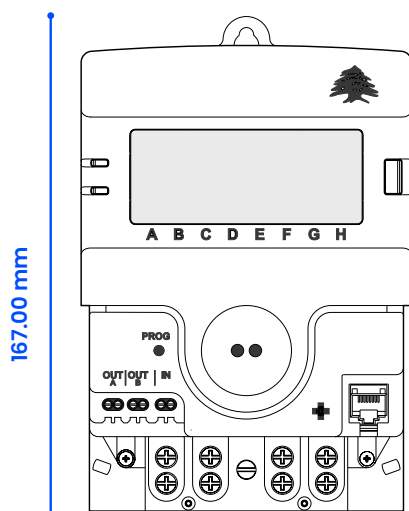
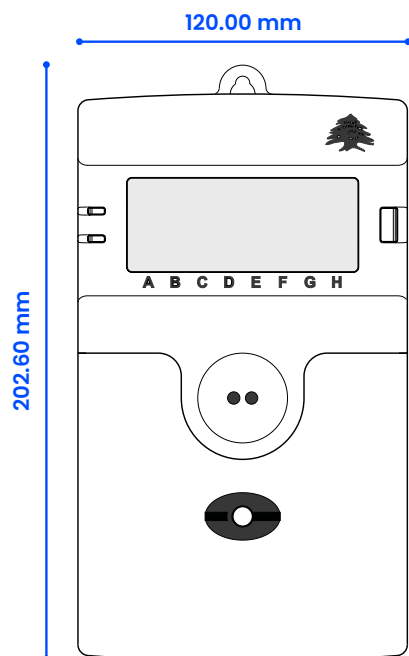
#### Cuztomizable indicators

Indicators on LCD screen and labels on plastic can be customized to match the customer's request

#### User button

Main user interface button, used to navigate through menus of the LCD Screen

# 04 Dimensions



a = 17.75 mm    c = 26.10 mm  
b = 16.00 mm    d = 13.50 mm

## Standard

Dimensions to DIN

## Compact

Smaller than most competitors

## Lebanese

With greetings completely designed and made in Lebanon

## Get in touch

For more information, please reach out to us.

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