Rubin COUNTER

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1 Rubin Smart DataCounter

We recommend our proprietary, integrated SmartDC intelligent data collector solution for communicating with electricity, water, gas and heat consumption meters and collecting local temperature data. One of the key functions of SmartDC devices is that they communicate with consumption meters and store and transmit the received data on energy use at the appropriate security level.

1.1 Key features of the device:

• Receives impulses from 8 different channels in compliance with the EN 62053-31 standard.Rubin_COUNTER

- Gages temperature with Rubin type fixed-line thermometers
- Assigns timestamps to energy consumption data at 15-minute intervals
- Min. 7 days of storage capacity in non-volatile memory
- Supports GPRS/UMTS mobile, Ethernet and Serial fixed-line communication channels
- Encrypted, authenticated communication protocol
- Online communication
- Continuous time synchronization
- Remote firmware update
- Remote parameter configuration
- Modular design
- DIN rail, wall-mounted and IP65 versions available
- 3-phase power feed option
- Battery mode (optional)

2 Data collection and storage

• Receiving impulses. SmartDC devices can process standard (EN 62053-31) impulses from up to 8 different channels.

• Processing metering data. Due to its special design, the SmartDC device immediately stores all impulses received in a non-volatile memory to eliminate any chance for impulse loss. The device assigns timestamps to consumption data at 15-minute intervals or even more frequently, allowing for a perfect 15-minute load curve based on the metered data.

• Data storage. SmartDC devices store a minimum 7 days of consumption data from all channels, which prevents any data loss even in the event of a temporary failure of the communication channel.

3 Communication

SmartDC devices transmit their metering data to a remote server via mobile communication or Ethernet cable. Key communication features:

• **Communication channel**. SmartDC devices transmit data primarily via the GPRS/UMTS channel. An optional Ethernet communication is also available.

• **Communication protocol**. By default, SmartDC devices communicate using a protocol developed by Rubin Information Technology Inc. specifically for collecting energy consumption data.

• **Online communication**. SmartDC devices automatically upload metering data to the central server at 15-minute intervals, enabling our clients to track their energy consumption on a continuous basis.

• **Security**. The communication protocol supports AES-128 level encryption. This solution offers high-level security for data transmission from SmartDC devices to the central server.

• **Authentication.** Each communication package has an authentication header to guarantee data integrity, identify the sender and prevent any manipulation of the consumption data.

• **Reliability.** The receipt and processing of each communication package is acknowledged by both parties (the SmartDC device and the central server) to avoid any unexpected data loss.

In addition to collecting, storing and transmitting impulses, SmartDC devices have the following features and offer the following functions:

• **Remote firmware updates.** In the course of operating the system, a number of new demands may emerge, requiring modification to the embedded software. The firmware running on the SmartDC device may be updated automatically, from a remote location.

• **Time synchronization.** SmartDC devices synchronize their internal clocks on a regular basis to ensure that the time stamps assigned to the metering data are always accurate.

• **Remote configuration.** The settings of SmartDC devices may be configured remotely, resulting only in marginal investments in terms of costs and time even with hundreds of devices installed.

• **Multiple versions**. Each module of the SmartDC can be mounted on a DIN rail, allowing for their installation right next to the consumption meter, which often offers an optimum solution in terms of quick and cost-effective installation. Wherever this layout is not possible, a wall-mounted or box version is available. Ideal for outdoors operation or positioning close to the water-meter, IP65 type data collectors may also be installed.