

Data sheet

OMNICON UtiliKeeper®

- Reduced expenses through round the clock remote monitoring
- Reduced expenses through internet technology
- Reduced expenses through remote access
- Reduced expenses on communication front
- Reduced expenses via extensive reporting
- Reduced expenses via remote updates



Application

UtiliKeeper® is a standard-based, all-in-one box, easy to install and operate, robust remote terminal with built-in SCADA able to utilise existing public communication network infrastructure.

OMNICON UtiliKeeper® gives you everything needed to create a high-performing, yet economical solution for monitoring and control of your hundreds or thousands of secondary substations.

OMNICON UtiliKeeper® can monitor both the low and the high voltage side of the transformer and provides detailed information about the power flowing through the substation.

UtiliKeeper® can be connected to multi-instruments (from

e.g. Circutor or Schneider) or electricity meters (Kamstrup 351C, OMNIPower CT), short circuit indicators (e.g. Horstmann), temperature sensors, door sensors and smoke detectors. The information from the sensors is stored in the embedded logger and in case values are outside user defined limits, alarms are sent in near real-time, so that operators can take action and solve problems before they escalate and become problematic. All data from the logger is sent to the utility at regular intervals in a well-structured XML format for reports and analysis purposes.

OMNICON UtiliKeeper® comes with built-in GPRS/3G modem and Ethernet, making it easy and fast using IP to send data from the many UtiliKeeper® units to the control center.

Technical data

Dimensions

- Without terminals
(height x depth x width): 150 x 83 x 29 mm
- Weight: 300 g

Approvals

- CE, FCC, CSA

Operational

- Storing: -20 °C to 70 °C
- Working temperature: -40 °C to 70 °C
- Humidity: 0 – 95% without condensation
- Altitude: Max. 4000 m

General

- Processor: 32 bits, ARM-based, 400 MHz
- Clock: Real-time clock, backed up
- Flash: 32 MB
(uboot, Linux OS, application, web and reports)
- SDRAM: 64 MB (running part of Linux and application)
- SRAM: 1 MB, backed up with lithium battery
(data logging, log)
- MicroSD (optional): Max 8 GB, not utilized in current software
- LED
 - Green flashing at 2 Hz: Normal operation
 - Red flashing at 8 Hz: Presence of alarm(s). Normal operation.
 - Green flashing at 0.5 Hz: Application stopped
 - Green ON: OS stopped
 - Red ON: Linux stopped
- Toggle switch: STOP – RUN –RESET

Power supply

- Voltage: 8-30 VDC, with battery backup 20-30 VDC
- Card consumption: Typical 100 mA
(depending on features used)
- Protection: Reverse polarity, internal soldered fuse
- Isolation between earth and secondary (Gnd): no isolation

Internal battery

- Voltage: 3 V, lithium battery (CR2450)
- Use: backup of clock and RAM (data logging)
- Typical lifetime: ~4 years @ 25 °C
- Mechanical lifetime: 10 years

Battery charger

- Power supply Vin required: 20-30 VDC
- Mode: Constant current/limited voltage
- Voltage: Maximum 13.8 V @ 25 °C
- Current: Maximum 250 mA

External battery

- Voltage, external battery: 11-16 VDC
- 12 V Lead Acid. Typical 7 A/h



Technical data

Communication ports

- RS232
- RS485
- Ethernet
- USB
- GSM/3G modem

I/O

- 16 x digital input/output: Each channel can be used as input or output and with single or double input indicator / output command
- 6 x analogue inputs (0-10 V and 4-20 mA). Individual signal per channel. 0-10V not utilized by current software.
- 2 x Pt1000
- 2 x analogue output. Not utilized by current software.

RS232 interface

- Connection: spring-loaded quick terminals.
- This interface is reserved for Kamstrup RF 1.0 Concentrator. OMNICON UtiliKeeper® simulates a Kamstrup GSM6 modem. The RF Concentrator is reachable via the Ethernet and GPRS/3G interfaces on UDP port 4023.
- Default communication parameters: Baud rate: 9600 bps, 8 data bits, no parity, 2 stop bits.

RS485 interface

- Connection: spring-loaded quick terminals
- Number of slaves: 256
- Protocol: ModBus-RTU Master and KMP (Kamstrup Meter Protocol)
- Isolation: no isolation between the A – B signals and the voltage supply
- Termination: not required. Built-in failsafe bias resistance: pull-down and pull-up resistance securing a logical real level when A and B are open or short-circuited.

This interface is reserved for multi-instrument, Horstmann ComPass B and Kamstrup OMNIPOWER CT/351C. Default communication parameters: Baud rate 9600 bps, 8 data bits, no parity and 1 stop bit.

Ethernet interface

- Model: 100 BASE-TX (4 wire), full duplex, auto-negotiation
- Connection: RJ-45
- Cabling to HUB: CAT5 1-1 cable
- Cabling to PC: CAT5 crossover cable or 1-1 cable
- Speed: 10/100 Mbits
- LEDs
 - 100: ON when connected at 100 Mbit, OFF when connected at 10 Mbit
 - Lk (link): ON when linked – FLASH when communicating

GSM/GPRS interface

- Frequencies: QUAD-BAND; GSM850 / EGSM900 / DCS1800 / PCS1900 MHz
- GPRS: Class 10(4+1/3+2) with PBCCH, SMS and DATA support
- Transmitting power: CLASS 4 (2W) for GSM800 and EGSM900, CLASS 1 (1W) for DCS1800 and PCS1900
- Antenna connection: screw connector type FME plug.

USB

- Model: USB 2.0
- Connector: USB type A female (socket)
- Cabling: USB A/A male cable (host to host)
- Speed: 480 Mbit/sec
- Current: Max. 500 mA at ambient temperature

Digital inputs

- External voltage to V+:
 - With cabling only to DI: 8 – 30 VDC
 - With cabling to DI and DO: 11 – 30 VDC
- Voltage at input:
 - Typically: 12 VDC
 - Max for LOW level: 2.2 VDC
 - Min. for HIGH level: 7.4 VDC
 - Max: 30 VDC
- Input resistance: >39 kOhm
- Measuring frequency: Minimum 15 msec.
- Protection:
 - RC filter: 231 Hz
 - Voltage inversion: no protection
 - EMC protection: RC
- Isolation:
 - Between inputs: No isolation
 - To the power supply: No isolation
 - Between inputs and outputs: 3000 Vrms
 - Between input and earth: 1500 Vrms

Technical data

Digital outputs

- External voltage to V+: 11 – 30 VDC
- Output:
 - Type: Current sourcing
 - Voltage per output: Maximum 30 VDC (depending on V+)
 - Current for 16 outputs at a time: 3.2 A, protected by fuse [SMD]
 - Current per output:
 - Maximum: 615 mA up to 60 °C (with a total for all output of 3.2 A)
 - Maximum: 200 mA between 60 °C and 70 °C
- Protection:
 - Protection diode: Protection against inverted voltage when working with inductive load.
Warning: when the output is connected to a DC relay driving an AC relay, the AC relay must be protected with a RC circuit
 - Over load: Maximum 35 VDC
 - Short circuit current at 1 output: Thermal protection
- Isolation:
 - Between inputs: No isolation
 - To the power supply: No isolation
 - Between inputs and outputs: 3000 Vrms

Pt1000 temperature sensor inputs

- Mode: 2 wire
- Resolution: 16 bits
- Range: Typically: -40 °C to 85 °C
- Precision: +/-0.5 °C

4...20mA analogue inputs

- Resolution: 16 bits
- Mode: Unipolar
- Model: Passive input. Sensor and input stage powered by external power supply
- Precision
 - 0.1% full scale @ 25 °C
 - 0.2% over full temperature range
- Input impedance: 249 Ohm
- Validity input
 - Returns 0 when signal < 2.4 mA or > 21.6 mA
 - Returns 1 when signal is valid

Communication protocols

- Modbus, KMP (Kamstrup Meter Protocol), IEC60870-5-104, DNP 3.0, FTP/FTPS, SMTP/SMTSP, NTP (time sync), HTTP, HTTPS, SSL/TLS, SSH, IP V4, TCP/UDP.

Security

- Embedded WEB server: HTTPS and user access control.
- Software upload: user access control and encrypted communication (SSH).
- Embedded OpenVPN client enables secure connection through open networks.
- Embedded firewall to prevent unwanted access.

Getting started with OMNICON UtiliKeeper®

If you wish to know more about OMNICON UtiliKeeper®, call us today. We will be happy to help you with calculating your business case and to discuss how you can try out UtiliKeeper® so that you by yourself can learn about the many features, the high performance and reliability, which our customers are so used to.

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