GOSSEN METRAWATT

ENERGY**CONTROL** SU1604
Summator

- **New modular concept**
- **Upward compatible software**
  with U1600/1/2/3 summators
- **64 processing channels**
  for calculating energy, power and costs.
  Physical inputs (up to 64) or LON meters can be assigned as desired
- **Energy Control Language** (ECL) for programming evaluations, monitoring and optimization
- **LON interface** for 64 LON devices
- **One RS 232 interface** (max. 921 kBaud)
- **One RS 485 interface** (max. 921 kBaud, half-duplex)
- **Two ECS LAN interfaces** (max. 375 kBaud)
- **Ethernet interface** (100 MBit/s) with ECL access via TCP/IP
  (4 sockets)

Applications

The U1604 modular summator serves as an extension or a long-term replacement for ECS U1600, U1601, U1602 and U1603 summators.

Features

Modular Meter Inputs

The U1604 summator can be equipped with up to 64 electrically isolated S0 meter inputs in a modular fashion for processing pulse-shaped (S0) input signals.

LON Meter Inputs

Up to 64 LON devices can be connected to the U1604 summator via the easy-to-wire, reverse polarity protected, electrically isolated LON interface.

Evaluation

All relevant energy and consumption data are acquired over predefined periods of time at a programmable interval using 64 processing channels (interval / measurement data list), and are stored as a load profile along with respective maximum values.

Data Recorder

Up to four recorders with a maximum of 64 channels and various time bases as of one second can be defined in addition to the interval / measurement data list. Any desired data can be selected for each channel (analog values, power values, consumption values per interval and overall meter readings) and saved as 32 bit float values (default) or 64 bit double values. A total of 100 MBytes of rotating memory capacity is available.

Ethernet Interfaces (100 Mbit/s)

The Ethernet interface permits remote access to device data via a TCP/IP network. Up to four TCP/IP sockets with ECL access can be used simultaneously (corresponds to 4 previously used COM servers).
An ECS LAN network can also be implemented via two of these sockets (ECS LAN via COM).

Applicable Regulations and Standards

IEC 61010-1 **DIN EN 61010-1** **VDE 0411-1**	Safety requirements for electrical equipment for measurement, control and laboratory use – Part 1: General requirements
DIN EN 61326-1 **VDE 0843-20-1**	Electrical equipment for measurement, control and laboratory use –EMC requirements – Part 1: General requirements

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Characteristic Values

Binary Inputs

U1624 – S0 Inputs, 12-Fold S0IN12	
Input quantity	Direct current, bipolar (square-wave pulses, S0 compatible)
Design	Electrically isolated
Input voltage	max. 30 V
Input resistance	5.1 kΩ

Auxiliary Power Supply

U1614 – Power Pack with Broad Range AC/DC Input	
Nominal range of use, AC	90 V ... 264 V
Frequency	47 ... 440 Hz
Nominal range of use, DC	120 V ... 370 V
Efficiency	83%
DC output voltage accuracy	max. 24 V, 5 W ±2%
Total DC output power	max. 24 V, 20 W (incl. DC output)
Power consumption U1604 (basic module) U1624 (12 ea. S0 input)	max. 40 VA 5 W 1 W
Fuse	T1.6A/250V (20 mm)
Status relay	250 V AC, 5 A, 3-pole, AgNi 90/10

Memory

Flash – MRAM – RTC	
Flash memory Calculated useful life Data preservation	128 MB Approx. 20 years (all 4 recorders save 64 channels per second) > 20 years
MRAM Data preservation	4 MB > 20 years (data preservation **depends** on the RTC backup battery)
RTC real-time clock Follow-up time Accuracy Backup battery for RTC Service life	> 10 years 5 ±5 ppm (0 ... +10 ppm) Lithium batt. 3 V/850 mA ½ AA installed to PCB > 10 years, battery replacement is typically unnecessary

Outputs

Relay Outputs	
Two S0 semiconductor relays (U1604 basic module)	max. 50 V DC, 200 mA, bipolar
Status relay (U1614 power pack module)	250 V AC, 5 A, 3-pole, AgNi 90/10

Mechanical Design

Modular Housing Concept	
Width U1614 power pack module U1604 basic module U1624 S0IN12	35 mm 45 mm 22.5 mm
Height	100 mm
Depth U1614 power pack module U1604 basic module U1624 S0IN12	114 mm 114 mm 107 mm
Mounting	To top-hat rail per EN 50022 / 35 mm

Ambient Conditions

Operating temperature range	-10 ... +55 °C
Storage temperature range	-25 ... +70 °C
Relative humidity	< 75% annual average
Elevation	To 2000 m
Deployment	Indoors
Mechanical classification	M1
Electromagnetic classification	E2

Electromagnetic Compatibility (EMC)

Interference emission   EN 61326-1:2013 class B
Interference immunity   EN 61326-1:2013

Scope of Delivery

SU1604

1   SU1604 basic module
1   Split toroidal core
2   ME 22.5 T-bus mounting rail connector

SU1614

1   SU1614 power pack module
2   ME 17.5 T-bus mounting rail connector

SU1624

1   SU1624 pulse recording module
1   ME 22.5 T-bus mounting rail connector

Order Information

Description	Type	Article Number
Basic module for SU1604 summator	SU1604	U1604
Power pack module for SU1604 summator	SU1614	U1614
Pulse recording module for SU1604 summator	SU1624	U1624
– One 5-fold connector terminal for RS 232 and SU1604 – Five 4-fold connector terminals for SU1614 and SU1604 S0 modules – Two connector terminals for SU1624 power pack module	SU1604 connector terminal package	Z302U
– Three T-bus terminals, 22.5 mm – Two T-bus terminals, 17.5 mm – One power supply terminal, left – One power supply terminal, right	SU1604 T-bus terminal package	Z302T
USB – RS 232 cable for connection to the SU1604 for firmware updating	SU1604 programming cable	Z302V

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