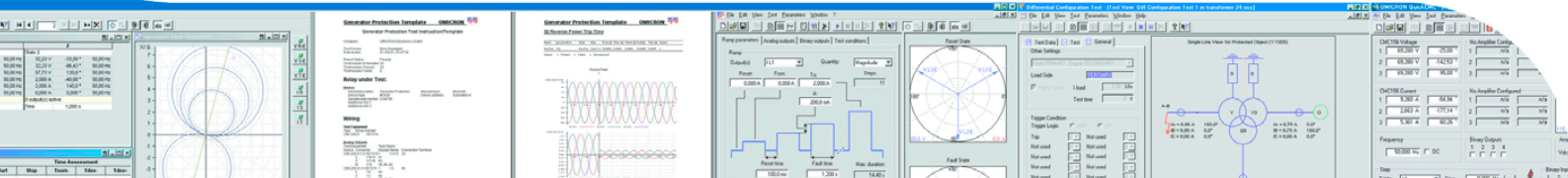


OMICRON

Technical Data

CMGPS

Synchronization Unit



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1 Technical Data

Guaranteed Features: The technical specifications indicated in this chapter are valid for 1 year from date of delivery.

1.1 CMGPS in General

Table 1-1:
General technical specifications of the CMGPS

| CMGPS in general | |
|------------------------|--|
| Dimensions (w x h x d) | 140 x 70 x 40 mm (5.5 x 2.25 x 1.6 in) |
| Housing | Metal, front panel with foil coating |
| Weight | 440 g (0.88 lb) |
| Ambient temperature | 0 ... 50 °C (32 ... 122 °F) |
| Storage and transport | -25 ... +70 °C (-13 ... +158 °F) |
| Humidity range | 5 ... 95 % relative humidity; non-condensing |

1.2 GPS Receiver

Table 1-2:
Technical specifications GPS receiver

| GPS receiver | |
|---------------------------------------|---|
| Number of SV ¹ | 12 (satellites) |
| TTFF (time to first fix) ² | Typ. 5 minutes (for a set accuracy of $\pm 1 \mu\text{s}$) Typ. 3 minutes (for a set accuracy of $\pm 10 \mu\text{s}$) |
| Position fault | <math>< 5 \text{ m}</math> (16.4 ft) [1 σ] |
| Identification antenna status | OK, short circuit, defective |

1. SV = "space vehicle". Max. number of satellites the receiver can use to determine position or time. The satellites providing the highest signal quality are considered. In general, the receiver only needs 4 - 5 satellites to determine position and time — depending on the signal quality.
2. TTFF = Time span the CMGPS needs to receive a sufficient number of satellite signals after switching on (to be "locked" to the signals). The higher the synchronization accuracy set via software (optimum: abs. error $\pm 1 \mu\text{s}$), the longer the time span will be.

1.3 Power Supply

Table 1-3:
Power supply

| Power supply unit | |
|----------------------|---------------------------|
| Supply voltage | 100 - 240 V _{AC} |
| Power supply unit | |
| Rated current input | |
| Rated current input | 400 mA |
| Frequency | 50/60 Hz |
| • nominal freq.: | |
| • admissible range: | |
| • admissible range: | 47 - 63 Hz |
| Output voltage | 18 V _{DC} |
| Rated current output | 840 mA |

| Power supply CMGPS | |
|---|--|
| Nominal supply voltage CMGPS | 18 V _{DC} / 150 mA |
| Admissible range of power supply voltage | +8 V _{DC} ... +30 V _{DC} |
| Power consumption | 2.5 W |
| Connection | Reverse polarity protected |
| Protection class | II |

1.4 Antenna

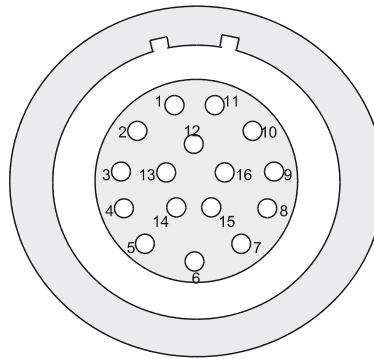
Table 1-4:
Antenna

| Antenna | |
|-------------------------|--|
| Antenna | Active |
| Connection of device | Coaxial (SMA socket) |
| Connection of antenna | Screw-on type (SMA plug) |
| Antenna extension cable | RG58 50 Ω coaxial cable, 15 m (45 ft.) (approx. 1 dB/m or 0.3 dB/ft) ¹ |

1. There is an optional extension set of 2 x 20 m (2 x 60 ft.) with SMA adapters available for a total extension of 40 m (120 ft.); refer to Table 8-1: "Ordering information for *the* CMGPS synchronization (set)" on page 43.

1.5 ext. Interf.

Figure 1-1:
16-pole LEMO™ socket
ext. Interf.



This interface serves to connect the *CMGPS* to the CMC test set by means of the supplied connection cable VEHK0003 (see figure 3-3 on page 14).

Table 1-5:
Technical data
ext. Interf. (output
Pulse out 1)

| ext. Interf. (output Pulse out 1) | |
|--|--|
| Type | CMOS output |
| Accuracy | Absolute error < $\pm 1 \mu\text{s}$ ¹ |
| Pulse length | 200 ms |
| Pulse rate | Configurable in steps of 1 second (1 s ... 65535 s) |
| Polarity of synchronization signal | Configurable to descending or ascending edge |
| First synchronization point of time | Programmable |

1. Accuracy of *CMGPS*. The synchronization of test sets depends on the accuracy set in the *Test Universe* software. Also refer to chapters 5.1 "Standard Accuracy Mode" and 5.2 "Enhanced Accuracy Mode"



The synchronization pulse is only put out if the *CMGPS* is able to meet the accuracy configured by the software.

1.6 Pulse Out 2 Interface

Figure 1-2:
Pulse out 2 interface

At this interface the synchronization pulse of the *CMGPS* can be picked up potential free via an internal opto-electronic coupler (open collector). At present, the *Test Universe* software supports the configuration of a pulse output only. Therefore, **Pulse out 2** is synchronous to **Pulse out 1**.



Figure 1-3:
Block diagram of the
Pulse out 2 interface

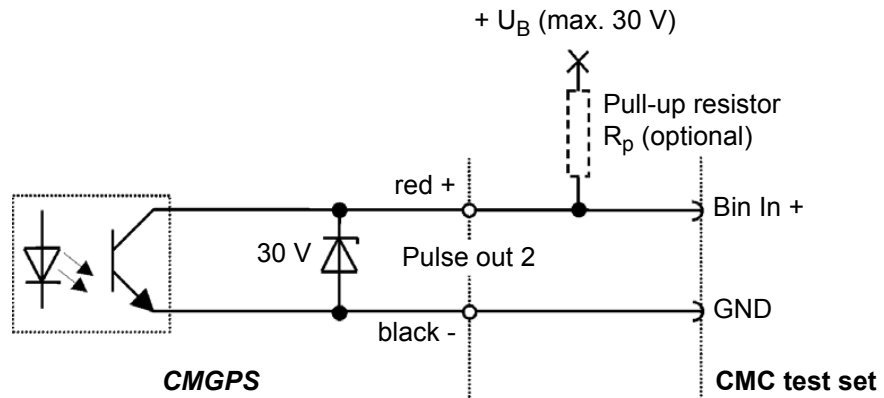


Table 1-6:
Technical specifications
Pulse out 2 interface

| Interface Pulse out 2 | |
|---|--|
| Type | Output by optoelectronic coupler (open collector) |
| Accuracy | Absolute error $\lt; \pm 5 \mu\text{s}^1$ |
| Pulse length | 200 ms |
| Pulse rate | Configurable in steps of 1 s (1 s ... 65535 s) |
| Polarity of synch. signal | Configurable to falling or rising edge |
| First synchronization point of time | Programmable |
| Specifications of the open collector output transistor: | |
| • I_{Cmax} | 5 mA |
| • U_{CEmax} | 30 V (red socket +, black socket -) |

1. Depending on accuracy set in the *Test Universe* software



The synchronization pulse is only put out if the *CMGPS* is able to meet the accuracy configured by the software.

1.7 CE Conformity, Electromagnetic Compatibility

Table 1-7:
Electromagnetic
Compatibility

| CE Conformity | |
|--|--|
| The product adheres to the specifications of the guidelines of the council of the European Community for meeting the requirements of the member states regarding the electromagnetic compatibility (EMC) Directive 2004/108/EC and the low voltage Directive 2006/95/EC. | |
| Electromagnetic Compatibility (EMC) | |
| Emission | |
| Europe | EN 61326-1; EN 61000-6-4; EN 61000-3-2/3 |
| International | IEC 61326-1; IEC 61000-6-4; IEC 61000-3-2/3 |
| USA | FCC Subpart B of Part 15 Class A |
| Immunity | |
| Europe | EN 61326-1; EN 61000-6-2; EN 61000-4-2/3/4/5/6/11 |
| International | IEC 61326-1; IEC 61000-6-2; IEC 61000-4-2/3/4/5/6/11 |


1.8 Insulation Coordination

Table 1-8:
Insulation coordination

| Insulation coordination | |
|--|---|
| Insulation of Pulse out 2 interface with regard to housing and/or ext. Interf. | Complies with EN 61010-1 and EN 60950-1 |
| Max. operating voltage | 250 V _{AC} |
| Test voltage | 3000 V _{AC} |
| Air gap | > 5 mm (0.2 in) |
| Creep path | > 6 mm (0.24 in) |

1.9 Safety Standards, Certificates

Table 1-9:
Safety Standards,
Certificates

| Certified Safety Standards | |
|----------------------------|--|
| Europe | EN 61010-1 Insulation of Pulse out 2 interface with regard to housing and/or ext. Interf. complies with EN 60950-1. |
| International | IEC 61010-1 |
| USA | UL 61010-1 |
| Canada | CAN/CSA-C22.2 No 61010-1-04 |
| Certificate |  <p>Manufactured under an ISO9001 registered system.</p> |