MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6GK1100-0AJ00

DUAL-INTERFACE SINEC H1 TRANSCEIVER SET

Used with the applicable SINEC H1 SIBUKO Package 6 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens SINEC H1 Transceiver Instructions B8976050/02; English Package 6 and dual-interface transceiver pages.

1 The SINEC H1 Transceiver with Bus Connector

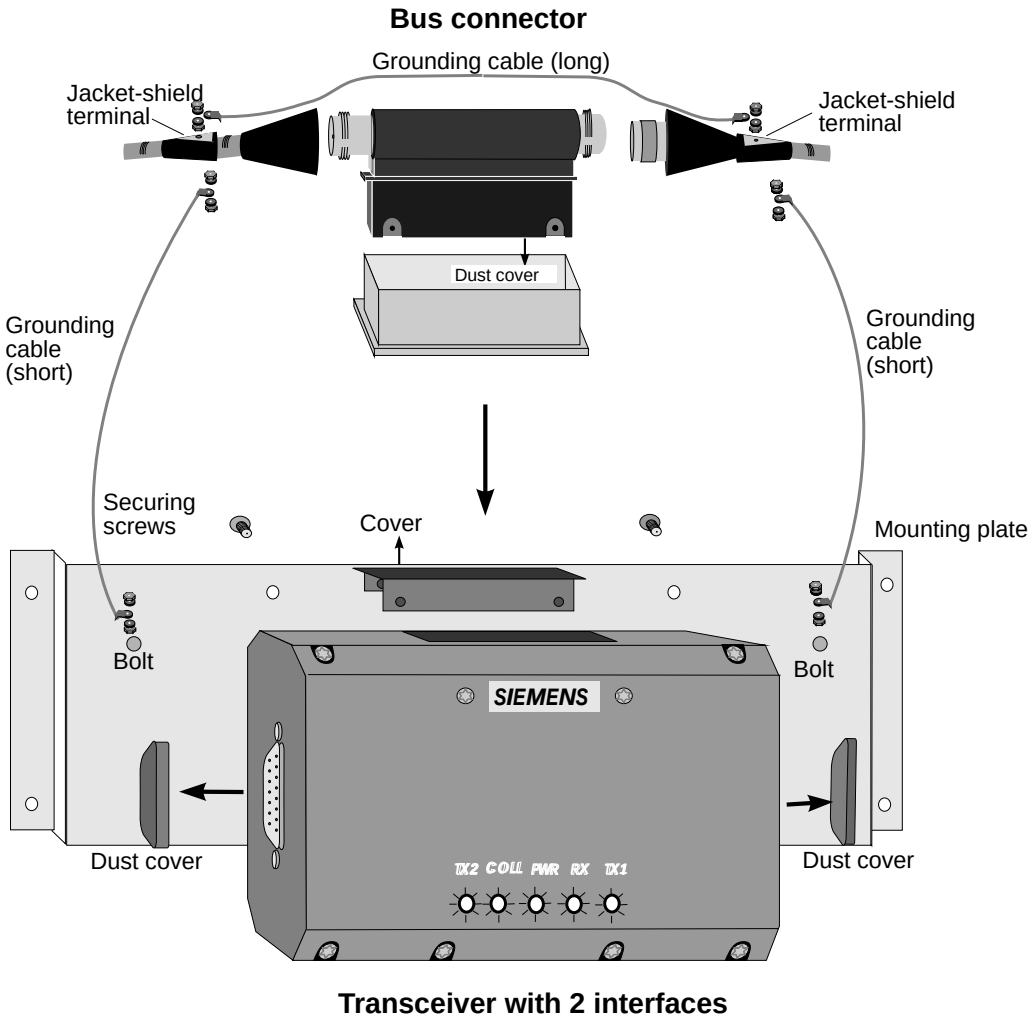


Fig. 1: Assembly of the transceiver and bus connector

2 The Versions Available

	Bus connector with N connector	SINEC H1 transceiver with one interface 6GK1901 - 0AA00 - 0AA0	SINEC H1 transceiver with two interfaces 6GK1901 - 0AA00 - 0AC0	Mounting plate	Fixed installation set	Dust cover	Fittings	Grounding cable	Resistor 25 Ω	Cover
SIBUKO package 1 6GK1100-0AA00	●					●		● **1 x long**		
SIBUKO package 2 6GK1100-0AB00	●	●		●	●		●	● **2 x short**		
SIBUKO package 6 6GK1100-0AJ00	●		●	●	●		●	● **2 x short**	●	
SINEC H1 transceiver with **one** interface 6GK1901-0AA00-0AA0		●		●	●		●	● **2 x short**		
SINEC H1 transceiver with **two** interfaces 6GK1901-0AA00-0AC0			●	●	●		●	● **2 x short**	●	●

☞ **When the components are supplied, the connection points for the drop cables are protected by dust covers.**

The N-coaxial connector, jacket-shield terminals and rubber grommets required to connect the SINEC H1 bus cable are not supplied. These can be ordered under order no. 6ES5 755-4AA11 (set of 2).

3 What you should know

3.1 Technical description

A SINEC H1 transceiver with one or two interfaces is required to connect stations to the SINEC H1 network. The transceiver with two interfaces can also be used for direct connection of two DTEs without a bus connection. The transceiver with the bus connector (N connector) comply with the IEEE 802.3 standard (CSMA/CD). The transceivers are supplied with their operating voltage by the DTE. The transceiver has the following functions:

- ➢ Transferring transmitted data to the SINEC H1 cable
- ➢ Taking received data from the SINEC H1 cable
- ➢ Collision detection
- ➢ Jabber function (transmission time monitoring)
- ➢ Signal quality error (SQE) test (heartbeat)

3.2 Technical Data

	Transceiver with one interface 6GK1901-0AA00-0AA0	**Transceiver with two interfaces** 6GK1901-0AA00-0AC0
Power supply	10.3 V ...15.75 V The DTE must meet the requirements of "safe electrical isolation" from the power supply system (refer to DIN VDE 0160 and DIN IEC 435/VDE 0805)	9.5 V ...15.75 V
Power consumption	150 to 300 mA	300 to 500 mA
Insulation resistance	10 M Ω	
Insulation voltage	1,5 kV AC between bus cable and enclosure	
Interference suppression	The SINEC H1 transceiver meets the requirements of limit value class B according to DIN 57871/VDE and therefore qualifies for the general operating approval according to instruction 1046/84 of the German Post ministry. This approval only applies when the connected devices also have this general approval.	The SINEC H1 transceiver meets the requirements of limit value class A and has the FTZ test number A700345 C/HF.
Connection to the bus	Bus connector with "N connectors"	
Connection to DTEs	15-pin D subminiature connector	
Pin assignment Collision detection Send Receive Power supply Shield, internal Shield	 2 + and 9 - 3 + and 10 - 5 + and 12 - 13 + and 6 - 1, 4, 8, 11 and 14 Enclosure	
Environmental conditions Operating temperature Storage temperature Humidity Type of protection	 0 °C to 55 °C -40 °C to + 70 °C 95 % (no condensation) IP 40 (when screwed to the mounting plate)	

4 What you have to do

4.1 Unpacking

✔ Check that the package is complete (refer to Section 2 "Versions available").

✔ Remove all components completely from the packing material.

✔ Check the individual components for transport damage.

☞ **Only install undamaged components.**

4.2 Installation (refer to Fig. 1)

4.2.1 Assembling the SINEC bus connector

☞ **If you do not follow the installation instructions exactly and if you undertake any other work in the device, this may increase the interference emission and nullify the "general approval".**

Condition: Before installing the bus connector, the ends of the bus cable must be pre-assembled and fitted with N coaxial connectors and jacket-shield terminals according to the regulations.

✔ Secure the dust cover on the bus connector using the supplied cable straps (only when you do not intend to install the transceiver immediately -> SIBUKO Package 1).

✔ Screw the N coaxial connectors of the bus cable into the bus connector.

✔ Connect the two jacket-shield terminals to the supplied grounding cable.

4.2.2 Assembling the transceiver

✔ Drill the holes for securing the mounting plate. The mounting plate itself can be used as a template.

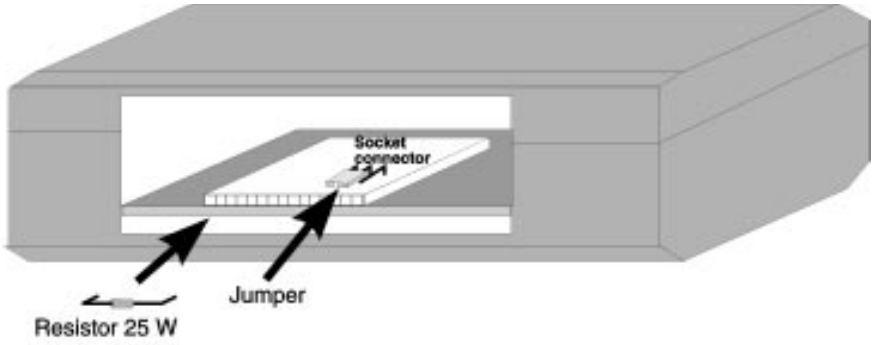
✔ Secure the SINEC transceiver to the mounting plate with the 4 screws.

✔ Remove the dust cover from the bus connector if you intend to assemble it immediately.

✔ Remove the cover from the transceiver. To do this, undo the two screws to the right and left of the SIEMENS emblems -> only on the transceiver with 2 interfaces.

✔ Select the setting for the SQE test on the SINEC transceiver (refer to Fig. 2). When supplied, the SQE test is inactive.

✔ Fit the SINEC transceiver onto the assembled bus connector and screw them together using the two screws from the cover.



1 Transceiver with **one** interface
Jumper
inserted **left** --> SQE test **off**
inserted **right** --> SQE test **on**

2 Transceiver with **two** interfaces
Jumper
inserted **left** --> SQE test **on**
inserted **right** --> SQE test **off**

Fig. 2: Setting the SQE test

✔ Secure the mounting plate.

✔ Ground the jacket-shield terminals of the ends of the bus cable to the mounting plate using the short grounding cables. In this case, the long grounding cable is not necessary (refer to 4.2.1).

✔ Ground the transceiver by connecting the mounting plate using the copper grounding strap (cross section 6 mm^2) to the nearest local ground via the shortest route possible. (This step can be omitted if the device is installed directly on a grounded, conductive base).

✔ Connect the drop cable 727-1 from the data terminal equipment (DTE) to the transceiver. Secure the connection using the slider.

4.2.3 Assembling the transceiver with 2 interfaces without bus connection

You can also use the transceiver with two interfaces to connect two DTEs directly without a connection to the bus. In this case, proceed as follows:

✔ Remove the bus connector and the cover of the transceiver. To remove the cover plate, undo the two screws to the right and left of the SIEMENS emblem.

✔ Select the setting for the SQE test on the SINEC transceiver (refer to Fig. 2). When supplied, the SQE test is inactive.

✔ Insert the terminating resistor on the left or right in the single-row socket connector in the transceiver and secure the cover again (screws to the right and left of the SIEMENS emblem).
The bus connector must not be assembled in this case.

✔ Connect the drop cable 727-1 from the data terminal units (DTE) to the transceiver. Secure the connection using the slider.

☞ **If the transceiver is later connected to the bus, the resistor must first be removed before making the connection.**

5 Using the Transceiver on the Network

5.1 Points to Note

- ➢ Only use data terminal equipment (DTE) that meets the requirements of "safe electrical isolation" from the power supply (refer to DIN/VDE 0160 and DIN/IEC 435/VDE 0805).
- ➢ The drop cable 727-1 must only be connected when the transceiver is already connected to the bus via the bus connector.
- ➢ By the same token, the DTE must first be disconnected before disconnecting the transceiver from the bus.

☞ **During operation (i.e. when the cable to the DTE is connected), the transceiver must not be disconnected from the bus -> irreparable damage can result.**

5.2 How to start up the Transceiver

The SINEC transceiver is supplied with power via the drop cable 727-1. The SINEC transceiver is ready for operation when the cable to both devices, the SINEC transceiver and the DTE is plugged in and the DTE is supplying the required power.

5.3 LEDs

Only the transceiver with two interfaces is equipped with LEDs.

	LED		Meaning
PWR	Power	(green)	This LED is lit when power is supplied to the transceiver.
RX	Receive	(yellow)	This LED is lit when the transceiver is receiving data from the network or its own DTE interface.
COLL	Collision	(red)	a) This LED is lit briefly (simultaneously with LEDs TX1 or TX2) when the SQE test is active. b) This LED is lit when collisions are detected on the bus cable.
TX1, **TX2**		(green)	This LED is lit when the corresponding interface (1 or 2) is transmitting data on the network.

5.4 Taking the Transceiver out of Operation

To take the transceiver out of operation, it must be disassembled in the opposite order from which it was assembled. **Make sure that the drop cable is first disconnected from the transceiver.** General bus traffic is not interrupted if the bus connector remains connected to the bus cable. ❑