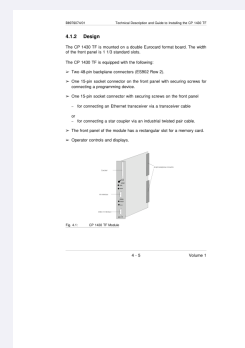


FIELD INSTALLATION QUICK GUIDE

Installation Instructions

6GK1143-0TB01

Industrial Ethernet communication processor



PRODUCT	6GK1143-0TB01
FAMILY	SIMATIC S5 CP 1430 TF Extended
FUNCTION	Industrial Ethernet communication processor
SOURCE	Siemens SIMATIC S5 CP 1430 TF Extended manufacturer documentation; applicable pages 102, 103, 104, 105, 106, 107, 133, 134, 135

01 OFFICIAL MOUNTING AND WIRING

- Identify the extended CP 1430 TF, supported rack and documented power connections.
- Install the processor and connect the Industrial Ethernet and programming interfaces using the original manufacturer pin assignments.
- Configure the communication resources and verify the affected controller connections before returning the system to service.

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- The connection to SINEC H1 is via a transceiver cable to a SINEC H1 transceiver or via an industrial twisted pair to a twisted pair module of a star coupler.
- The connection to SINEC H1FO is via a transceiver cable to a SINEC H1FO optical transceiver.

Caution When Working on the CP 1430 TF

The CP 1430 TF contains electrostatically sensitive devices (ESD). Please keep to the ESD guidelines when working with the CP 1430 TF.



Never remove or insert the CP 1430 TF module with the power supply switched on.



Never insert or remove memory cards from the CP when the power supply to the CP is on.

4.1.2 Design

The CP 1430 TF is mounted on a double Eurocard format board. The width of the front panel is 1 1/3 standard slots.

The CP 1430 TF is equipped with the following:

- Two 48-pin backplane connectors (ES902 Row 2).
- One 15-pin socket connector on the front panel with securing screws for connecting a programming device.
- One 15-pin socket connector with securing screws on the front panel
 - for connecting an Ethernet transceiver via a transceiver cable
- or
 - for connecting a star coupler via an industrial twisted pair cable.
- The front panel of the module has a rectangular slot for a memory card.
- Operator controls and displays.

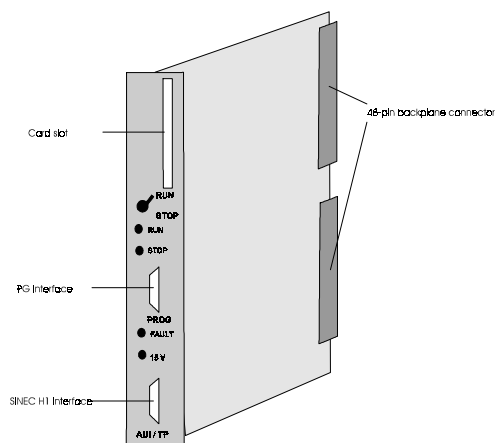


Fig. 4.1: CP 1430 TF Module

4.1.3 Displays and Controls

The CP 1430 TF has the following displays and controls (Fig. 4.2:)

Controls:

RUN/STOP mode selector:

Using the mode selector, you can switch the CP 1430 TF from the RUN to the STOP mode (see above). If no other STOP condition exists, you can also switch the CP from the STOP to RUN mode using the mode selector.

Displays:

RUN

Signals the "interface to SINEC H1/H1FO in operation" status.

The green RUN LED can only light up when the mode selector is set to RUN.

STOP

Signals the "interface to SINEC H1/H1FO not operational" status.

The red STOP LED can also be lit when the mode selector is set to RUN.

FAULT

Indicates that the available memory area has been exceeded (flashing) or a hardware fault (lit permanently).

15V

Indicates that the 15V power supply for the transceiver is functioning correctly.

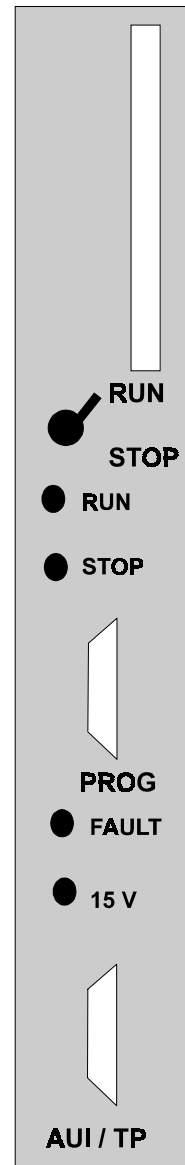


Fig. 4.2: Front Panel

4.1.4 Memory Card Slot

Memory cards can be inserted in the CP 1430 TF slot. These memory cards are used to save a CP database created with the NCM COM 1430 TF configuration tool. The following memory cards are available:

➤ RAM Cards:

- 256 Kbytes order no.: 6ES5 374-2AH21
- 512 Kbytes, order no.: 6ES5 374-2AJ21^{*1}
- 1 Mbyte, order no.: 6ES5 374-2AK21^{*1}
- 2 Mbytes, order no.: 6ES5 374-2AL21^{*1}

^{*1}= up to 256 Kbytes can be used for configuration data. The remainder is available as DRAM memory expansion.

➤ Flash EPROM Card:

- 128 Kbytes, Order no.: 6ES5 374-2FG21
- 256 Kbytes, Order no.: 6ES5 374-2FH21
- 512 Kbytes, Order no.: 6ES5 374-2FJ21^{*2}
- 1 Mbyte, Order no.: 6ES5 374-2FK21^{*2}
- 2 Mbytes, Order no.: 6ES5 374-2FL21^{*2}
- 4 Mbytes, Order no.: 6ES5 374-2FM21^{*2}

^{*2}= up to 256 Kbytes can be used for configuration data. EPROM cards with more memory than 256 Kbytes bring no advantage.

4.1.5 Settings on the CP 1430 TF

In contrast to the previous CPs (CP 535 and CP 143 TF) no DIP switch or jumper settings are necessary on the CP 1430 TF.

The type of connection to SINEC H1/H1FO (AUI connection or industrial twisted pair) is recognized by the CP 1430 TF automatically.

4.1.6 Installing the CP 1430 TF in the PLC Rack

The CP 1430 TF can be installed in any PLC slot that is allowed for CP operation (slot label: CP). With PRIO 0 jobs, the CP 1430 TF triggers an interrupt to the CPU of the PLC at the receiving side. Since not all CP slots have interrupt lines, you must select a slot with an interrupt line if you intend to use jobs with priority PRIO 0.

For more information about PLC slots, please refer to the PLC manual.

4.1.7 Connecting the CP 1430 TF to the SINEC H1/H1FO Network

The CP 1430 TF can be connected to the SINEC H1 network as follows:

- With a transceiver using an AUI connection

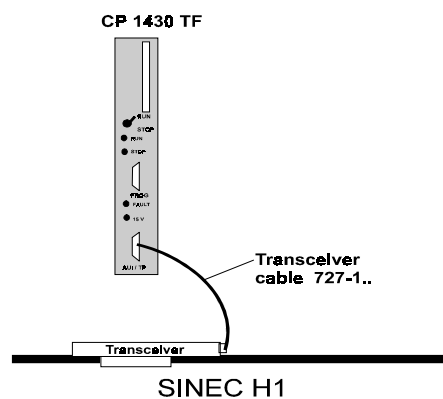


Fig. 4.3: Connecting a CP 1430 TF to SINEC H1 with AUI / Transceiver

The CP 1430 TF generates and supplies the 15 V power required by the transceiver.

➤ Industrial twisted pair connection for example via a transceiver or hub.

When using the SINEC H1 twisted pair as shown in the diagram, the CP 1430 TF automatically recognizes and adjusts itself to the twisted pair. Information about the pinouts can be found at the end of this chapter.

Using industrial twisted pairs, cable lengths of up to 100 m can be implemented.

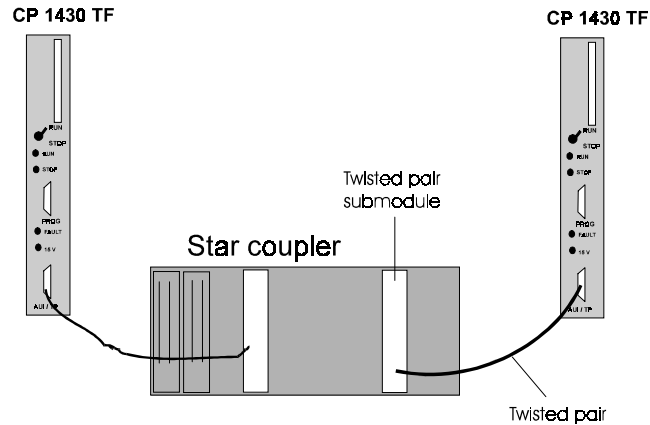


Fig. 4.4: Connecting the CP 1430 TF to SINEC H1 with TP/Star Coupler or Hub

4.5 Pinouts

Backplane Connector

The CP 1430 TF has two 48-pin Row 2 backplane connectors with which the module is connected to the bus board of a SIMATIC PLC rack. The pinouts of these backplane connectors is shown in the following tables.

Backplane connector 1

	d	b	z
2	-	Ground	+ 5 V
4	UBATT	-	-
6	ADB 12	ADB 0	CPKL
8	ADB 13	ADB 1	/MEMR
10	ADB 14	ADB 2	/MEMW
12	ADB 15	ADB 3	/RDY
14	/IR A	ADB 4	DB 0
16	/IR B	ADB 5	DB 1
18	/IR C	ADB 6	DB 2
20	/IR D	ADB 7	DB 3
22	-	ADB 8	DB 4
24	-	ADB 9	DB 5
26	-	ADB 10	DB 6
28	/DSI	ADB 11	DB 7
30	-	-	-
32	-	Ground	-

Backplane connector 2

	d	b	z
2	-	Ground	+ 5 V
4	-	-	-
6	-	-	-
8	-	-	-
10	-	-	-
12	-	-	-
14	-	-	-
16	-	-	-
18	-	-	-
20	-	-	-
22	TxDs	/STOPPA	-
24	-	-	-
26	-	/RxDs	-
28	-	-	-
30	-	-	Ground for 24 V
32	-	Ground	+ 24 V

Connector of the Serial Interface (AS 511 Interface)

On the front panel, there is a 15-pin D SUB female connector with screw securing mechanism for connecting a programming device. The pinout of this interface is shown in the following table.

Serial interface

1	MEXT (external ground)
2	TTY IN - (current output)
3	-
4	+ 24 V
5	Ground (internal ground)
6	TTY OUT + (current input)
7	TTY OUT - (current output)
8	MEXT (external ground)
9	TTY IN + (current input)
10	Ground for 24 V
11	20 mA current source of sender
12	Ground (internal ground)
13	20 mA current source of receiver
14	Master query
15	Ground (internal ground)

Connector for H1/H1FO (AUI/TP Female Connector)

On the front panel of the CP 1430 TF, there is a 15-pin D SUB female socket (pinout complying with Ethernet standard IEEE 802.3) with a slide securing mechanism for connection of a transceiver cable. The pinout of the connectors is shown below for the AUI connection and the twisted pair connection.

	AUI	TP
1	Electronic ground	-
2	CLSN (collision +)	-
3	RMT (transmit +)	RMT (transmit +)
4	Electronic ground	-
5	RCV (receive +)	RCV (receive +)
6	Ground for 15 V	(Jumper to 7)
7	Not used	(Jumper to 6)
8	Electronic ground	-
9	CLSN (collision -)	-
10	TRMT (transmit -)	TRMT (transmit -)
11	Electronic ground	-
12	/RCV (receive -)	/RCV (receive -)
13	+ 15 V	-
14	Electronic ground	-
15	Not used	Not used