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**INTEGRATED RADIOTELEX SYSTEM
T-BUS/CENTRONICS INTERFACE H1285
REFERENCE MANUAL**



A/S S. P. RADIO · AALBORG · DENMARK

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SYSTEM SPECIFICATIONS

T-BUS Interface: CCITT V.10 (RS-423) half duplex coaxial line.

Centronics Interface: 36-wire parallel interface, TTL-level, 10mA / 0.8V max low level.

T-BUS Data Format: Modified MIL-STD-1553B.

Data Rate: 2400 bit per second.

Address select: 32 device addressable.

Interconnect Cable: Single coaxial cable with BNC connection.

Power Supply: +23V half-wave, 40 mA and -10V, 250 mA.

Dimension: 122(W) x 82(H) x 20(D) mm.

Weight: Approx. 0.25 Kg.

INTRODUCTION

This manual provides instruction for configuring, installing and operating the H1285 T-BUS/Centronics Interface.

Service informations are covered by the last part of the manual.

For general information regarding the T-BUS standard, please refer to the Reference Manual " T-BUS, Internal Time Division Command/Response Multiplex Data Bus ".

H1285 T-BUS/CENTRONICS INTERFACE

DESCRIPTION

The H1285 T-BUS/Centronics Interface provides the interface conversion between the H1240 remote control T-BUS and hard-copy printers conforming to the Centronics interface standard.

Up to 4 printers may be connected in parallel to the T-BUS via separate interfaces, enabling dedicated addressing of print information.

The H1285 T-BUS/Centronics Interface is powered from the hard-copy printer via the 36-pole Centronics connector.

CONFIGURATION

Before installation of the T-BUS/Centronics Interface, the interface unit should be configured for the actual use.

The configuration switch is located inside the interface unit.
remove the four screws on the interface unit top cover and carefully disassemble the unit.

NOTE

If only one printer is used, always use address No. 1.
Address No. 1 is loaded as the default address during
power-up of the H1240 Radiotelex Modem.

Switch Position	Function
S1-6 ---- S1-1	
0 0 0 0 0 1	Printer 1 Address
0 0 0 1 0 0	Printer 2 Address
0 0 0 1 0 1	Printer 3 Address
0 0 0 1 1 0	Printer 4 Address
1 1 1 1 1 1	Self Test

Table 1. Configuration Selection
Factory Settings

H1285 T-BUS/CENTRONICS INTERFACE

INSTALLATION

The H1285 T-BUS/Centronics Interface may be fastened to e.g. the rear side of the printer by means of four screws, separated 83 x 62 mm from each other.

The interface unit mounting holes are exposed when the cabinet cover is removed.

The interface unit is powered via the 36-pole Centronics connector, pin-16/17/19/33 for ground, pin-34 for +10V and pin-36 for +23V half-sinus.

If these power supply connections are not supported by the printer in question, +10V supply may be applied to Test-Point 1 and -10V to test-Point 2 located on the H1285 PC-board. Pin-34 and pin-36 in the Centronics connector should then be left unused to avoid any damage to the power-supply circuits.

The coaxial T-BUS interface cable schematic is enclosed in Appendix A to this manuals.

H1285 T-BUS/CENTRONICS INTERFACE

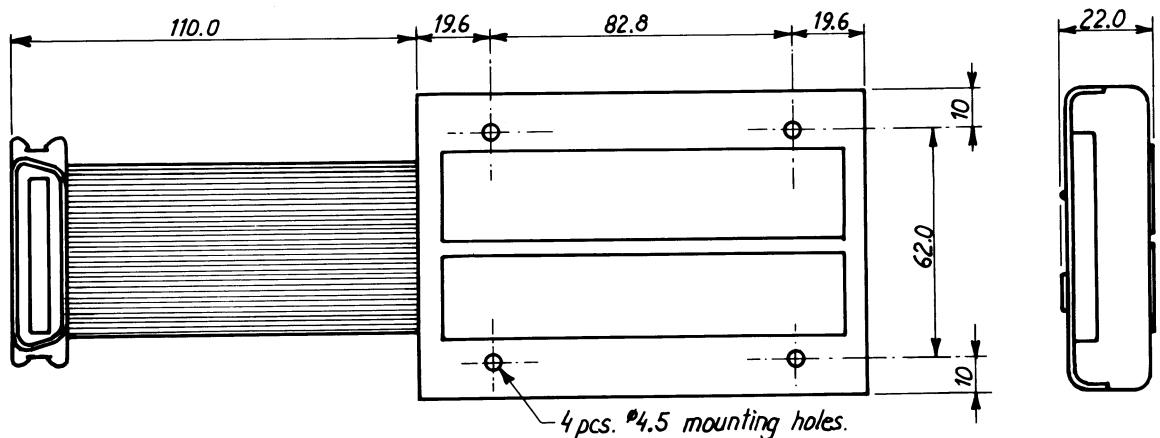


Figure 2. Physical dimensions in mm

OPERATION

INTRODUCTION

The following section describes the additional operational commands introduced with the H1285 T-BUS/Centronics Interface.

NOTE

When operating the H1240 Radiotelex Modem together with the H1285 interface, the H1240 system generation should include the setting of the 'Remote Control' to ON and the 'Remote/printer port mode' to 2400,0,8,1.

PRINTER SELECTION

After power-up, printer No. 1 is automatically selected as the default printer. To change the printer in use, tupe:

Use LPT1 (cr) (to select printer 1)

Use LPT2 (cr) (to select printer 2)

Use LPT3 (cr) (to select printer 3)

Use LPT4 (cr) (to select printer 4)

SERVICE

FAULT DIAGNOSIS

If a malfunction in a system has been traced down to the H1285 T-BUS/Centronics Interface, a simple fault diagnosis may be carried out by the operator as follows:

Trouble	Probable cause
The H1240 Radiotelex Modem displays the text 'Errors on printer indicates that it may be off-line. Please check it'.	Printer with address selection No. 1 is absent, the printer is not powered / out of paper or the T-BUS interface cable open- or short circuit.
No error text displayed and no print-out.	The H1240 has not been configured to remote control = ON or the T-BUS cable is not connected to the H1240 X4 socket.

Disconnect the T-BUS cable and perform the H1285 self-test (by selecting switch position 111111). The self-test will print the program version and the alphabet characters in small and capital letters if no test errors are detected.

During self-test, the H1285 should generate a 818.0 - 818.2 Hz three-state waveform +/0/- (the T-BUS line should be loaded with 50 ohm during this test).

If the error message "T-BUS I/O error, invalid negative voltage level" is printed, the output driver is unable to supply negative test voltage to the T-BUS, or the receiver is unable to detect the negative test signal.

If the error message "T-BUS I/O error, invalid positive voltage level" is printed the output driver is unable to supply positive test voltage to the T-BUS, or the receiver is unable to detect the positive test signal.

If a malfunction cannot be located, the H1285 T-BUS/Centronics Interface should be examined by qualified service personnel.

CIRCUIT DESCRIPTION

The following part of the manual will give a brief description of the circuit principles in the H1285 referring to the circuit schematic and component lists, H1285 included at the back of this manual.

T-BUS/CENTRONICS INTERFACE, CIRCUIT SCHEMATIC 93-100105

The power supply circuit in the interface unit is realized as a standard +5V series regulator U9 with a polarization diode CR1 and a -5V series regulator U8, AC-coupled to the +23V half-sinus by means of the diodes CR2 and CR3.

The T-BUS remote interface is a 2-wire half-duplex connection with three-state driver Q1-Q2-Q3 controlled by the CPU circuit U2. By means of the two diodes CR4 and CR5, the output stage is left in the high impedance state during power-off.

The T-BUS receiver U1 converts the nominal +/- 3V receive signal to TTL-level for the CPU circuit.

The resistor R1 limits the maximum voltage level on the T-BUS to approx. +/- 18V, and L1-L2-C1 decouples any RF-signal introduced on the interface cable.

The converted T-BUS signals are handled in an 8-bit singlechip processor U2 running at a clock frequency of 6 MHz (Intel type 8035).

The system program memory is stored in EPROM U3 (4k Byte), while the workspace memory is integrated in U2 as part of the single-chip processor.

The 8 lower EPROM address lines are latched by U4 and the remaining 4 address lines derived from the aux. I/O port P2.

The Centronics parallel output data is latched by the buffer U6, the strobe outputs buffered by U7, and the status inputs read by the three-state buffer U5.

An activity LED detector DS1 indicates the presence of a valid address on the T-BUS (not necessary to the present device).

The configuration settings defined by switch S1 are loaded into the aux. I/O port P1 of the CPU.

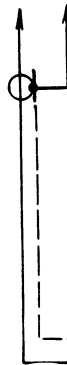
		TITEL		STYKLISTE	
		H1285			
		T-BUS / CENTRONICS INTERFACE		PARTS LIST	
REF DES	PART NO	NOMENCLATURE OR DESCRIPTION		MFR CODE	QTY
FIND NO					
1	TT37-100105	PRINTED WIRING BOARD		T&T	1
2	TT93-100105	ELECTRICAL SCHEMATIC DIAGRAM		T&T	R
3		COMPONENT LOCATION DRAWING		T&T	R
C1	SR215E103KAA	CAPACITOR, CER 10n/63V		AVX	1
C2	C-400-100p	CAPACITOR, CER 100p/400V		FER	1
C3	C-400-10p	CAPACITOR, CER 10p/400V		FER	1
C4	C-400-22p	CAPACITOR, CER 22p/400V		FER	1
C5	25 TW 100 MS	CAPACITOR, ELCT 100u/25V		RUB	1
C6	TW-L 1u	CAPACITOR, ELCT 1u/50V-L		RUB	3
C7	SR215E104ZAA	CAPACITOR, CER 100n/63V		AVX	2
C8	50 TW 47 MS	CAPACITOR, ELCT 47u/50V		RUB	3
C9	50 TW 47 MS	CAPACITOR, ELCT 47u/50V		RUB	
C10	50 TW 47 MS	CAPACITOR, ELCT 47u/50V		RUB	
C11	TW-L 1u	CAPACITOR, ELCT 1u/50V-L		RUB	
C12	SR215E104ZAA	CAPACITOR, CER 100n/63V		AVX	
C13	TW-L 1u	CAPACITOR, ELCT 1u/50V-L		RUB	
CX	MD015E104ZAA	CAPACITOR, CER 100n/64V		AVX	6
CR1	1N4007	DIODE, SI 1N4007		PHI	3
CR2	1N4007	DIODE, SI 1N4007		PHI	
CR3	1N4007	DIODE, SI 1N4007		PHI	
CR4	1N4148	DIODE, SI 1N4148		PHI	2
CR5	1N4148	DIODE, SI 1N4148		PHI	
DS1	ESBR 3431	DIODE LED, RED		STA	1
H1	9101 3x5 UHMX N	SCREW, M3x5		HFC	4
H2	9101 3x8 UHMX N	SCREW, M3x8		HFC	4
H3	9102 3x8 PHMX N	SCREW, M3x8		HFC	1
H4	307788	STAY NUT, M3x5		RAD	4
H5	307794	STAY NUT, M3x10		RAD	4
H6	1813 M3-A2	SQUARE NUT, M3		HFC	1
J1	82 BNC-50-0-1	CONNECTOR PCB, 50 OHM COAX		SUN	1
J2	609-3653	CONNECTOR PCB, 36 POLE		ANS	1
L1	68u IM2	DECOUPLING COIL, 68u		DALE	2
L2	68u IM2	DECOUPLING COIL, 68u		DALE	
MP1	TT41-100105	CABINET, CENTRONICS INTERFACE		T&T	1
REV STATUS OF SHEETS	LTR A	NEXT ASSY			
		USED ON			
APPROVAL PT	DATE 840523	REV. APPROVAL AND DATE		CODE IDENT	PL 91-100105
		REV A		SHEET	1 of 2

COMPONENT LOCATION FOR H1285 T-BUS/CENTRONICS INTERFACE

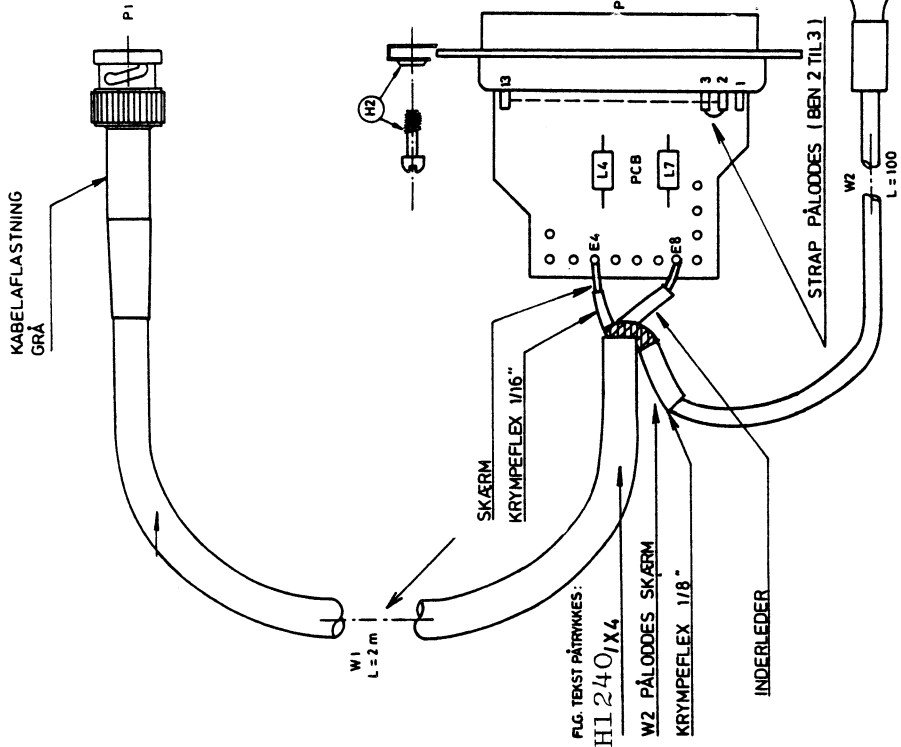
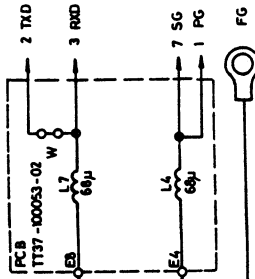
H1285 T-BUS/CENTRONICS INTERFACE

WIRING DIAGRAM

H1285
(T-BUS/CENTRONICS/INTERFACE)



H1240
(X4)



UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLI- METERS AND TOLERANCES ARE IN ACCORDANCE WITH DS 2075		TITLE H1240 to H1285 CABLE ASSEMBLY (25 POLE SOURIAU HOUSE)	
DR. <i>Kinder</i>	8.0619	SIZE A 3	CODE IDENT NO 37 - 100111
CH.		SCALE	SHEET 1 OF 1
AP.		FIRST ANGLE PROJECTION	
MATERIAL		USED ON	
APPLICATION			

OKI MICROLINE 80 INTERFACE

This Appendix contains information for adapting the Model OKI Microline 80 Hard-Copy Printer to the H1285 T-BUS/Centronics Interface. For general information regarding the printer, please refer to the enclosed Microline 80 Operation Manual.

Note: When you order an OKI Printer H1252 from S. P. Radio, the following set-up is done by us.

CONFIGURATION OF THE PRINTER

Before installation, the Microline 80 printer should be configured for the correct operation, the configuration straps located inside the printer cabinet set to correct position, and the national character PROM installed.

DISASSEMBLY PROCEDURE

- a. Remove the two screws located underneath the printer top cover retaining the two cabinet parts.
- b. Remove the platen knob and carefully disassemble the two cabinet parts by tilting the upper part backwards.

It may be necessary to push the small front plate holding the power lamp and the print switch slightly to release the upper cabinet part.

- c. To reassemble the cabinet, reverse the preceding steps.

The printer PC-board is located next to the rear panel of the printer.

INSTALL JUMPERS AS FOLLOWS:

Jumper pos.	Function
S1-A	Character set
S2-A	
S3-A	Character set
S4-A	CR only after line

INSTALLATION OF NATIONAL CHARACTER PROM:

The printer is supplied with a standard character PROM. To change this PROM to a national PROM, carefully remove the PROM circuit located in a socket at the centre of the PC-board and reinstall the national character PROM.

Removing original PROM may be facilitated by carefully releasing the PROM from the socket by keying a screwdriver in between the PROM and the socket.

When installing the new PROM, pay attention to that the chipleads have been located properly in the socket and that the PROM is mounted with the orientation notch facing to the right (when viewed from the rear side of the printer).

INSTALLATION OF THE H1285 T-BUS/CENTRONICS INTERFACE

The H1285 Interface unit may be mounted convenient on the left side of the rear panel (when viewed from the rear side of the printer), by means of four screws. Carefully drill the enclosure, and secure the H1285 to the rear panel.

Reassemble the printer enclosure, the H1285 top cover and connect the Centronics cable running from the interface unit to the printer.

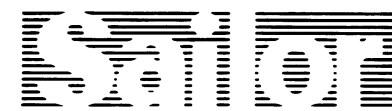
MOUNTING OF THE PRINTER

The Hard-Copy Printer including the Roll Paper Holder may be fixed to e.g. a table by means of the mounting hardware included as part of the H1250 Mounting Kit.

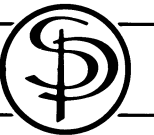
NOTE

Before operating the printer, please observe that the cable running from the Roll Paper Hardware is connected to the printer, that the Print switch located on the front panel of the printer is switched to ON, that the Mains switch located on the rear side of the printer is switched to ON, that the printer is connected to the Radiotelex Modem, and that paper is installed in the printer.

The Microline 80 includes two paper low switches. Operation of the printer is stopped when paper-low conditions are detected.

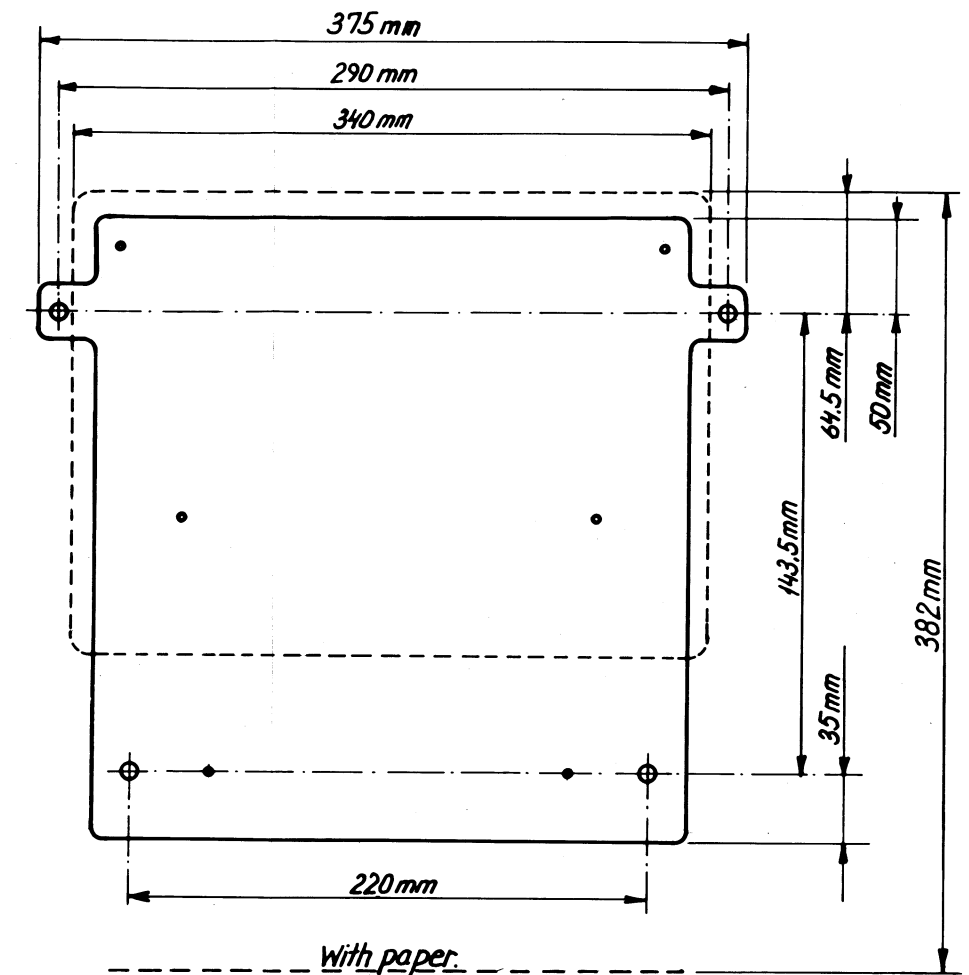
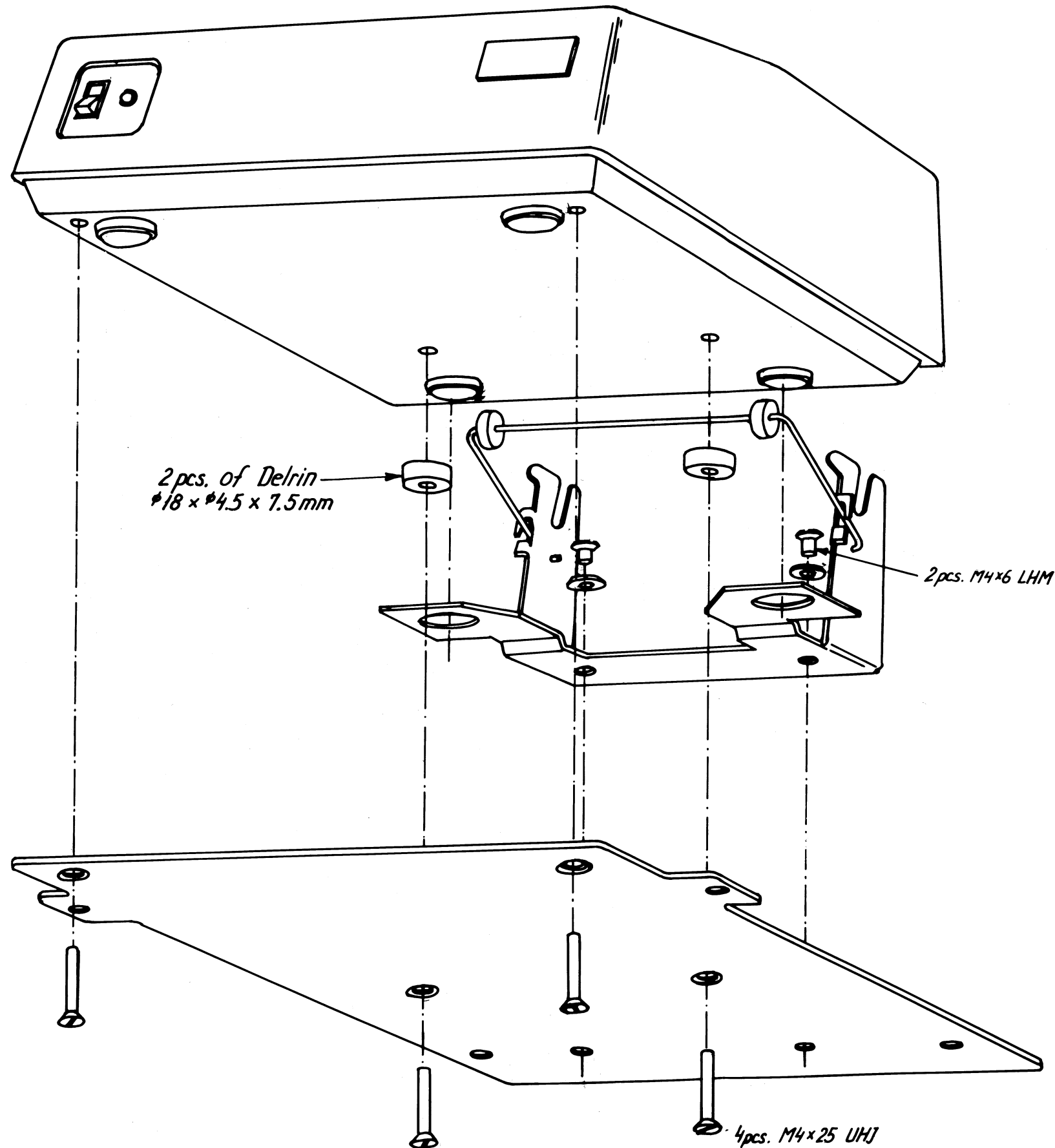


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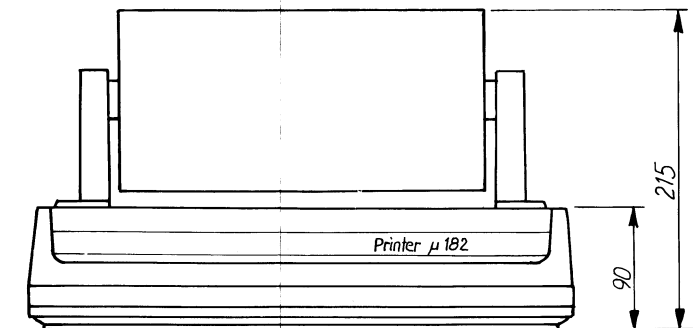
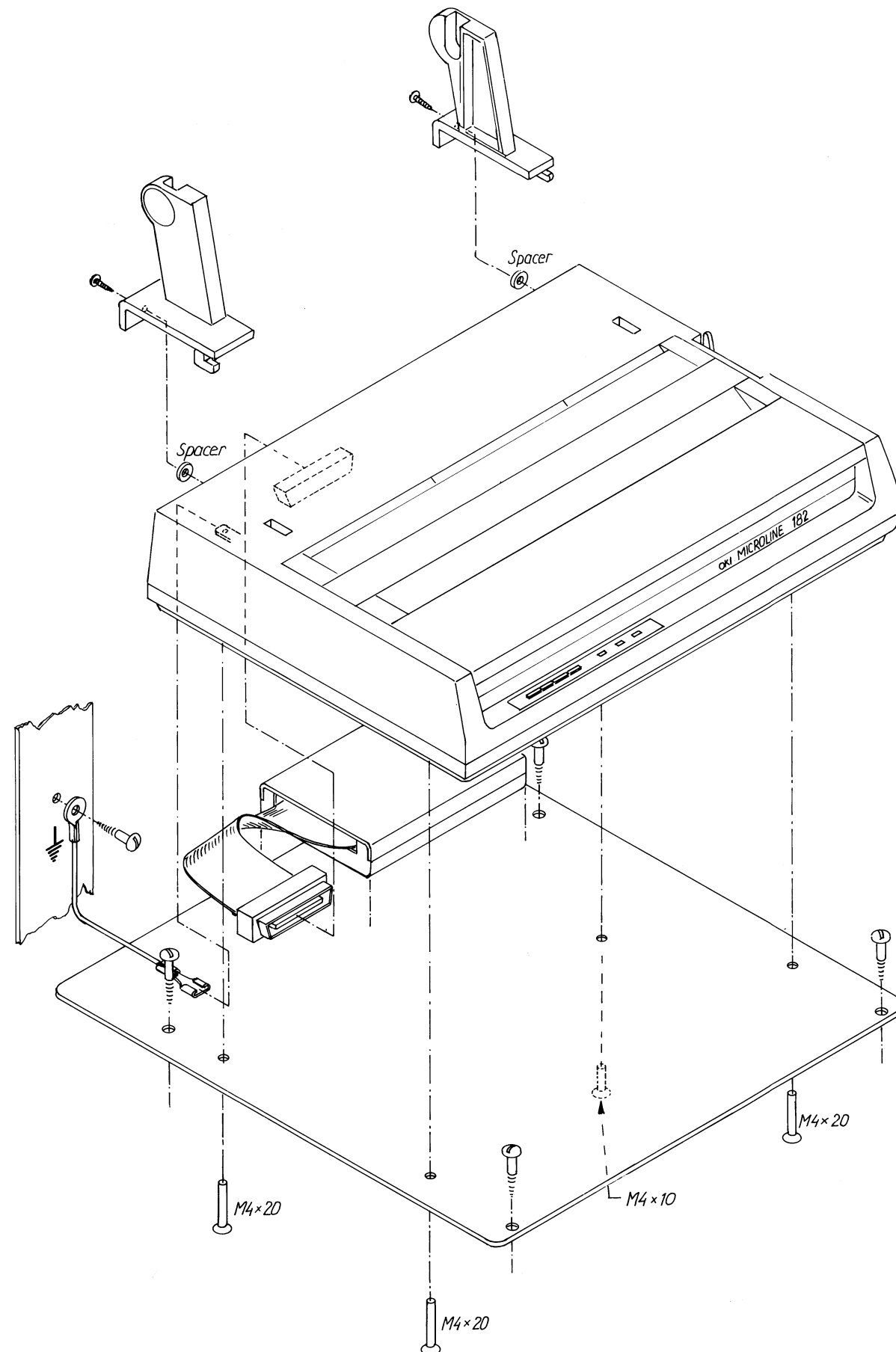
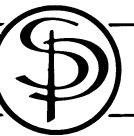
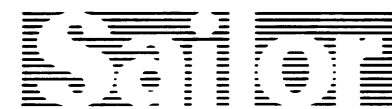
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TELEX MOUNTING INSTRUCTION
4-0-23771A



Dimensional drawing for OKI Electric printer,
Microline 80 with S.P. Radio mounting kit H1250

The high with paper roll is 176 mm



Drillingplan for OKI printer Microline 182, SAILOR H1252,
with SAILOR mounting kit H1250

Dimensions in mm.

