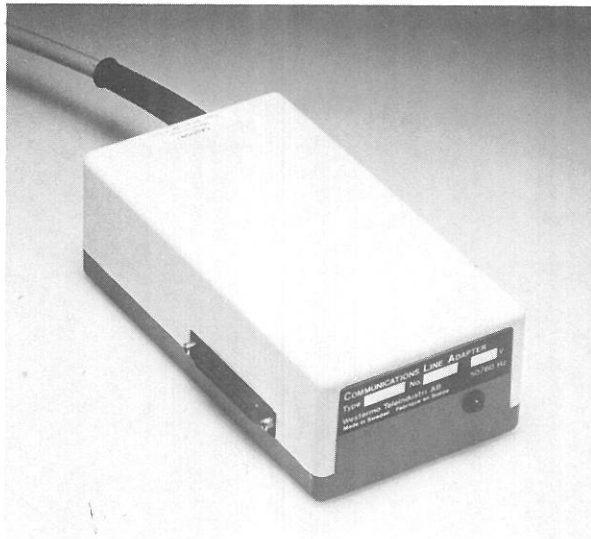




KM-1A CURRENT LOOP CONVERTER



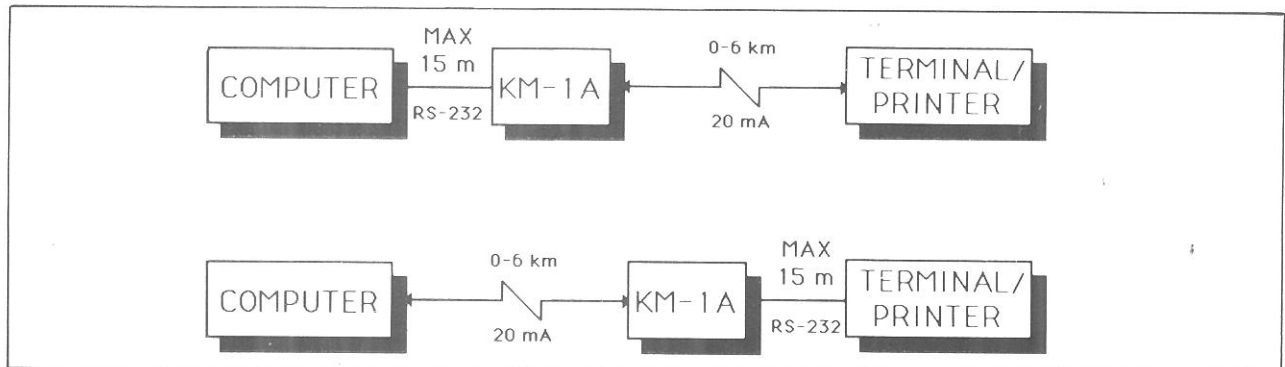
The KM-1A is a converter between 20 mA Current Loop and EIA RS232-C or CCITT V.24 and V.28. The unit can be used when equipment with different interfaces are to be connected.

It can also be used as the transmission device in local communications links over distances up to 6 km.

The KM-1A has full duplex capability, which means that transmission and receiving can occur simultaneously. Any transmission rate from 0 to 9600 bits per second is accepted, and no strapping is necessary.

The KM-1A is available as a table top/wall mount model or as a plug-in card (KM-1AR) for the Westermo 19" rack system type RV.

TYPICAL SYSTEMS APPLICATION



TRANSMISSION LINE CONNECTION

The line is connected to screw terminals in the KM-1A. The current is either supplied by the terminal or by the KM-1A. The appropriate alternative is selected either when connecting the line to the screw terminals (KM-1A), or by switch settings (KM-1AR). See reverse side. Four alternatives are possible:

1. KM-1A is the current source
2. The terminal (or computer) is current source
3. KM-1A sources only the transmit loop
4. KM-1A sources only the receive loop

Only alternative # 2 offers true isolation between terminal and KM-1A. For all other alternatives isolation is achieved only if the terminal, which is mostly the case, has isolated interfaces.

FEATURES

- ☐ Asynchronous transmission
- ☐ Full duplex
- ☐ 0-9600 bits per second (any rate)
- ☐ EIA RS232/CCITT V.24/V.28
- ☐ 20 mA Current Loop
- ☐ Opto-Coupler isolation
- ☐ Local links up to 6 km
- ☐ Easy to use
- ☐ Small size
- ☐ Low cost

SPECIFICATIONS

Interface	1. According to EIA RS232-C or CCITT V.24/V.28 2. 20 mA Current Loop Receiver I _{max} = 80 mA Transmitter U _{max} = 35V Transmitter I _{max} = 80 mA	Isolation Test Voltage Power	Opto-coupler 1500V 110/220 VAC ± 10% 50/60 Hz (Factory option), Other supplies on request (KM-1A) + 20V and -20V (KM-1AR)
Transmission	Asynchronous, full duplex	Indicator	Power on (Red LED)
Speed	Any speed from 0 to 9600 bits per second. No straps necessary.	Dimensions	80×150×50 mm (KM-1A), appr. 100×100 mm (KM-1AR)
Line	Simplex: One twisted pair Full duplex: Two twisted pairs Max line resistance: 150 ohms	Weight	0.5 kg (KM-1A), 90 g (KM-1AR)
Max distance	9600 4800 2400 1200 600 bits per second 0.4 0.8 1.5 3 6 km	Mounting	Wall-mounted/table-top (KM-1A) or plug-in card (KM-1AR)
		Temperature Range	5 - 50°C
		Humidity	0 - 95% RH, non-condensing

DTE CONNECTION (To DB25S Connector)

Pin No	Mnemonic/Signal Name	CCITT V.24 Designation	RS-232C Designation
1	PG/Protective Ground	101	AA
2	TD/Transmitted Data	103	BA
3	RD/Received Data	104	BB
7	GND/Signal Ground	102	AB
4	RTS/Request To Send	105	CA
5	CTS/Clear To Send	106	CB
6	DSR/Data Set Ready	107	CC
8	DCD/Carrier On	109	CF
20	DTR/Data Terminal Ready	108/2	CD

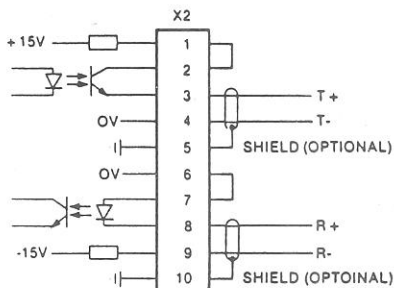
Note: RTS looped back to CTS. DTR looped back to DSR and DCD. PG connected to GND.

TRANSMISSION LINE CONNECTION

KM-1A

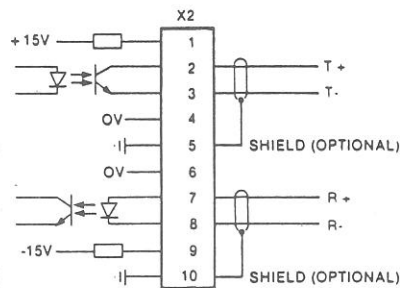
ALTERNATIVE 1.

KM-1A=CURRENT SOURCE



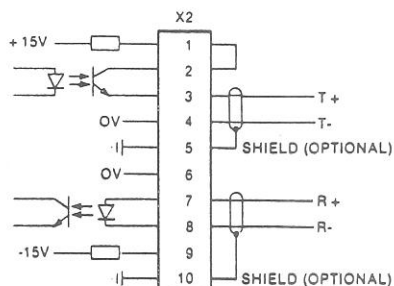
ALTERNATIVE 2.

TERMINAL=CURRENT SOURCE



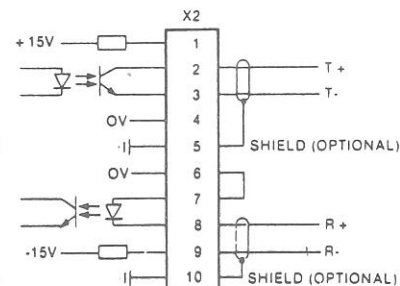
ALTERNATIVE 3.

KM-1A=TRANSMIT LOOP SOURCE



ALTERNATIVE 4.

KM-1A=RECEIVE LOOP SOURCE



Note: If shielded cable is used just connect the shield at one end of the transmission line.

KM-1AR

Connections

Screw Terminal No (on mother board)	Signal	
	Ser. no 1 - 1000	Above ser.no 1000
1	T+	R+
2	T-	R-
3	R+	T+
4	R-	T-
5	Shield (if used)	

Settings

Switch settings	Effect
S1 in Pos. 1	Transmitter is passive
S1 in Pos. 2	Transmitter is active (Transmit loop source)
S2 in Pos. 1	Receiver is passive
S2 in Pos. 2	Receiver is active (Receive loop source)



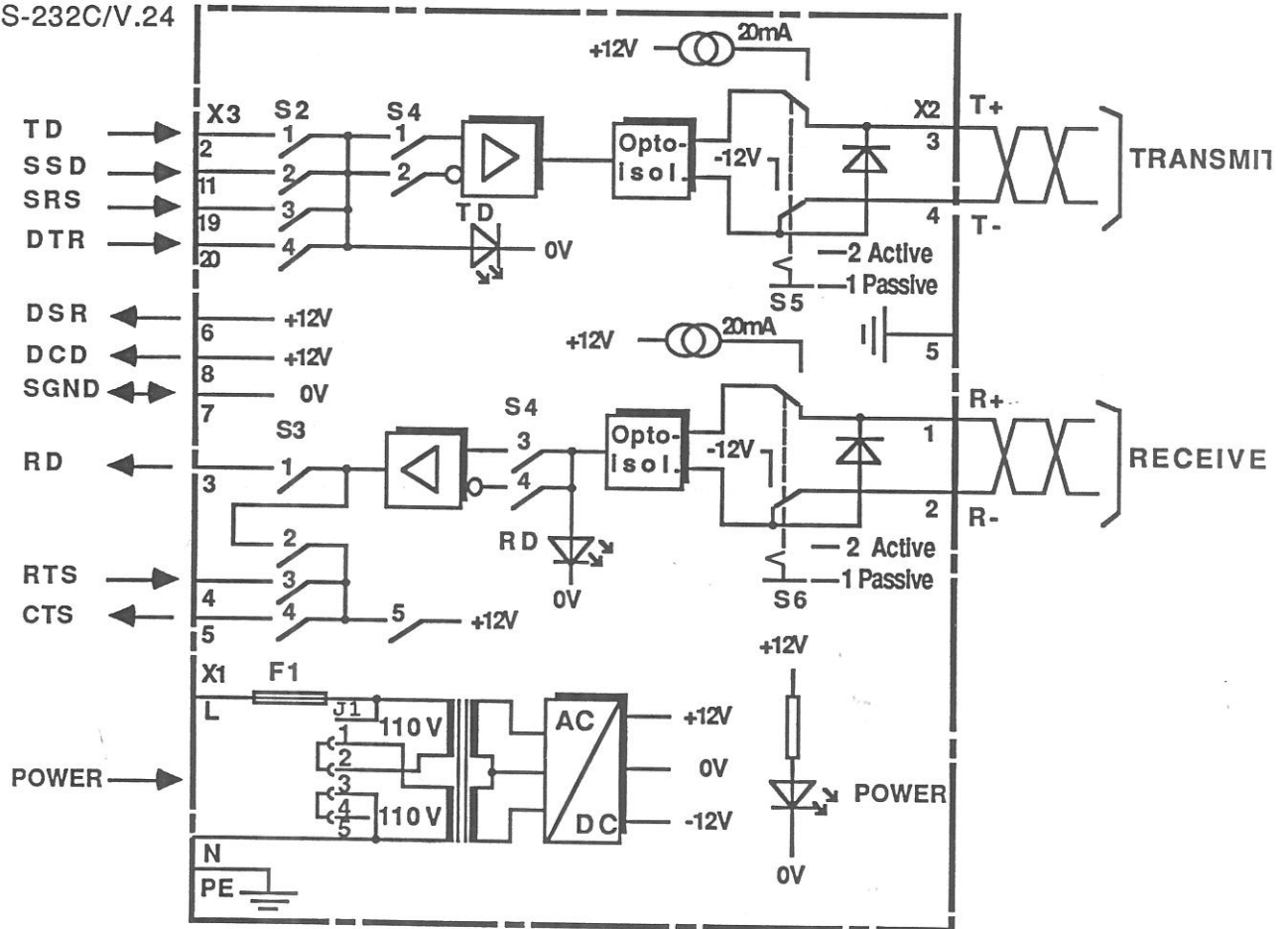
WESTERMO TELEINDUSTRI AB
S-640 40 ST. SUNDBY SWEDEN

We reserve the right to change specifications without prior notice.

DESCRIPTION KM - 1A

1986-09-04

RS-232C/V.24



TRANSMIT SECTION

S2	1	2	3	4	Transmit Data from pin
<input checked="" type="checkbox"/>					2 TD
	<input checked="" type="checkbox"/>				11 RDY/BUSY
		<input checked="" type="checkbox"/>			19 SRS
			<input checked="" type="checkbox"/>		20 DTR

TRANSMIT / REC. - POLARITY

S4	1	2	3	4	POLARITY
<input checked="" type="checkbox"/>					Transmit
	<input checked="" type="checkbox"/>				Normal
		<input checked="" type="checkbox"/>			Inverted
			<input checked="" type="checkbox"/>		Receive
				<input checked="" type="checkbox"/>	Normal
				<input checked="" type="checkbox"/>	Inverted

POWER SUPPLY CONN.

J1	1	2	3	4	5	Voltage
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		220 V
	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		110 V

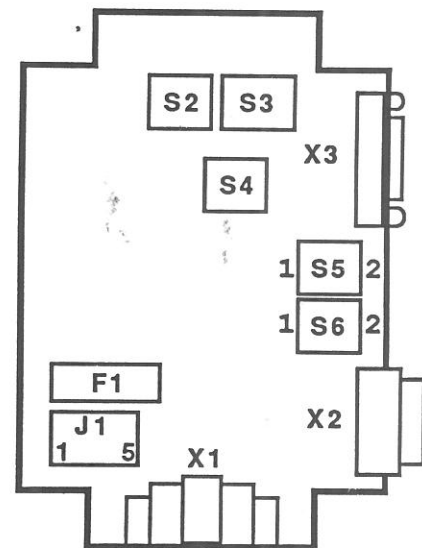
RECEIVE SECTION

S3	1	2	3	4	5	Receive Data to pin	CTS (pin 5) controlled by
<input checked="" type="checkbox"/>						3 RD	Always OFF
<input checked="" type="checkbox"/>						3 RD	Always ON
<input checked="" type="checkbox"/>						3 RD	RTS
	<input checked="" type="checkbox"/>					5 CTS	Received signal

✕ = ON

EMPTY BOX = OFF

■ = FACTORY SETTING



KM-1A/KM-1AR

All the KM - 1A with serial no above 8000 and KM-1AR with serial no above 1500 have the following new features, as compared to the previous version.

- True 20mA current generator
- Up to 6 KM - 1A/KM-1AR can be connected in series on the same transmission line
- Current source selection on switches
- Three LED's : Power, TD, RD
- Transmit/ Receive line polarity is switch selectable
- If data is only transmitted in one direction, the remaining twisted pair can be used for status signalling. This feature is ideally suited for remote printers
- Detachable power cable and Appliance Inlet according to IEC 320/ VI (KM-1A).
- Line connection to detachable screw terminal connector outside the box (KM-1A)