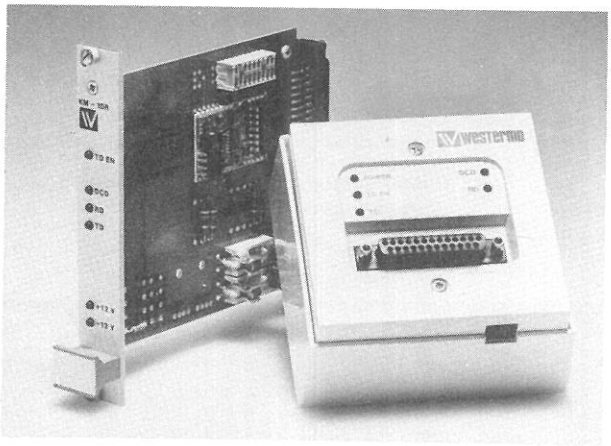
westermo ACCESS

MA-14/MA-19 SHORT HAUL MODEM



- Asynchronous transmission
- Full duplex
- Any rate 0-38,400 bits per second
- EIA RS-232C/CCITT V.24/V.28
- Code independent
- Status signals in both directions
- 2- or 4-wire
- Distances up to 18km
- Lightning/transient protected
- Optical isolation
- 5 LED indicators
- Suitable for 65 mm wall box
- Low cost

ACCESS MA-14/MA-19

The MA-14/MA-19 are short haul modems in Westermo's new Access series. Access is a series of modems designed using modern techniques resulting in high operational reliability, good performance, and are low priced and easy to manage.

The MA-14/MA-19 are designed for data transmission over distances of up to 18 km and at any rate up to 38,400 bps. Transmission is provided with full duplex. On the terminal side the MA-14/MA-19 are designed according to RS-232C/V.24/V.28 specifications.

Transmission is provided by a balanced tri-state current loop. It is a well-tested Westermo technique ensuring error free transmission, and in addition permits the transmission of a status signal in both directions.

The status signal can be used for example, to transmit alarm signals from a printer when the paper has run out, or when the buffer is full.

Signal state is indicated by 5 wide-angle LED's on the front panel, which are visible even when viewed from an angle.

The MA-14/MA-19 are code independent. They can consequently transmit all popular protocols, codes, word lengths, bit formats and parities.

The MA-14/MA-19 are available either as a wall box suitable for a standard 65 mm installation box, or also as a plug-in card (MA-19) for rack mounting.

The MA-14/MA-19 can be connected to other asynchronous modems in the Westermo Access series: the MA-12 (table top/wall model), the MA-14 (in wall box) and the MA-19 (plug-in card).

The MA-14/MA-19 are also compatible with Westermo's earlier asynchronous modems (KM-1, KM-1D, KM-1DR, KM-4, LS-01/-02) and can be connected to them.

WESTERMO ACCESS – A MODERN MODEM SERIES

The modems in the Acces series are highly reliable and have a long life expectancy. The Westermo Access series employs modern components such as hybrid circuits and specially designed cards.

Built-in transient protection (MA-14) protects against lightning or electrical disturbances in heavy industry environments.

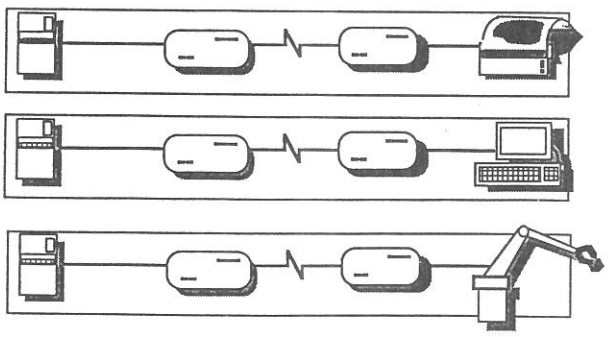
Lightning protection makes Access modems a worthwhile investment. It not only protects the modem itself, but can also protect the expensive terminals and computers connected to it.

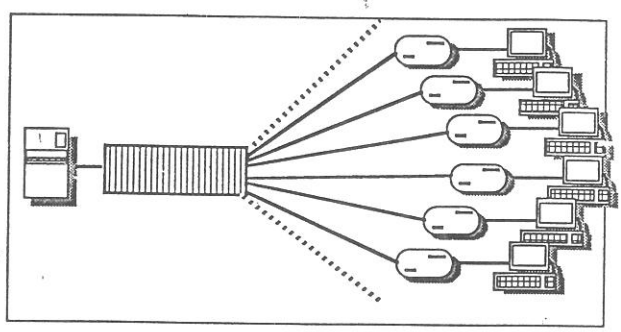
Additionally, the terminal and line sides of the modem are electrically isolated from each other, providing extra protection against disturbances and voltage differences in the system.

The Westermo Access modem series has a modern and practical design. The wall unit is easy to mount and connect and is also designed to fit a 65 mm installations wall box.

The Westermo Access modems provide many excellent features. Prices are nevertheless low. Modern techniques and rational production yield high quality at low cost.

APPLICATIONS





SPECIFICATIONS

Transmission	Asynchronous, full/half duplex or simplex
Interface no. 1	EIA RS-232C, CCITT V.24/V.28 25-pin D-sub connector, female
Interface no. 2	±10mA tri-state balanced current loop. Simplex (one twisted pair) Full/half duplex (two twisted pairs) Connection to screw terminal block
Speed	Any rate from 0 to 38,400 bps, no strapping required
Indicators	Power, TD, RD, RTS, DCD
Isolation	Electrical separation with opto-coupler (data transmission) and transformer (supply)
Isolation Voltage	1500V rms
Overvoltage protection	Interface no. 2: Built-in transient protection in MA-14. Breakdown voltage 15V for transmitter, and receiver 5.8V. Surge capacity 0.4kW during 1ms
Power	Alt. 1: External supply ±20VDC ±25%, Alt. 2: (MA-14) from terminal pins 9 and 10 ±12VDC ±5% Alt. 3: (MA-14) 220VAC ±10% 48-62Hz via PS-3 battery eliminator
Power consumption	Alt. 1: +20V 60mA, −20V 40mA Alt. 2: +12V 50mA, −12V 30mA Alt. 3: max 6VA with 220V
Mains adapter	PS-3 (removable) with 2m cable
Temperature range	5-50°C
Humidity	0-95%RH, non-condensing
Dimensions	MA-14: 92.5x92.5x44.8 mm MA-19: appr. 100x100 mm PS-3 : 60x45x38 mm
Weight	MA-14: 0.2 kg MA-19: 0.1 kg PS-3 : 0.3 kg
Mounting	Wall unit with mounting frame, or on standard 65mm installation box (MA-14). MA-19 occupies 1 card slot in rack RV-01
Option	Terminal cable (to order)

DTE CONNECTION (INTERFACE No. 1)

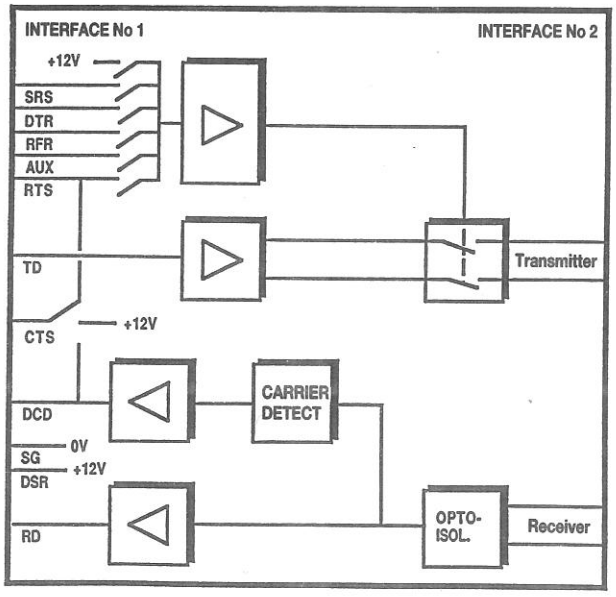
Direction	Pin. No.	CCITT V. 24 Designation	Mnemonic/Signal name
→	2	103	TD/Transmitted Data
←	3	104	RD/Received Data
→	4	105	RTS/Request To Send
←	5	106	CST/Clear To Send
←	6	107	DSR/Data Set Ready
↔	7	102	SG/Signal Ground
←	8	109	DSD/Data Carrier Detect
→	11	—	AUX/Auxiliary
→	19	120	SRS/Secondary Request To Send
→	20	108/2	DTR/Data Terminal Ready
→	25	133	RFR/Ready For Receiving

TRANSMISSION DISTANCES (INTERFACE No. 2)

Cable characteristics	Speed bit/s						
	600	1200	2400	4800	9600	19200	38400
0,3 mm² 42 p F/m	18000 m	12000 m	8000 m	5000 m	2500 m	10000 m	500 m

Use twisted pair cable. Transmission distance is reduced if cable with higher capacitance and decreased area is used. Use shielded cable in heavy industrial/interference environments.

BLOCK DIAGRAM



SETTINGS

- ○ Constant CARRIER, or CARRIER activated by DTR, RTS, AUX, SRS or RFR
- ○ CTS activated by RTS, DCD or constantly High

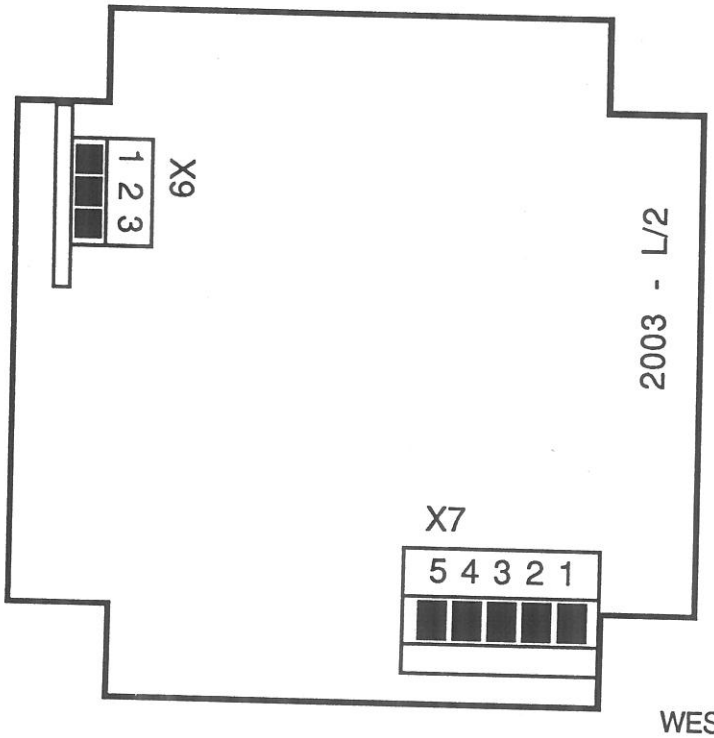
westermo

WESTERMO TELEINDUSTRI AB
S-640 40 ST. SUNDBY, SWEDEN
Tel: +46 16-612 00 Telex:461 17
Telefax: +46 16-611 80

1988-03-14

MA - 14 FR.O.M. SN. 112

UNDERIFRÅN



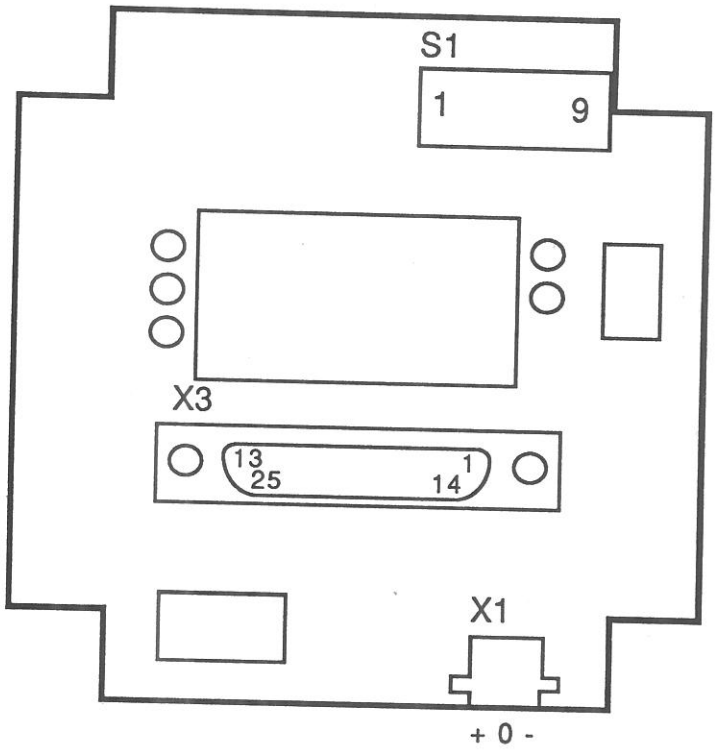
ANSLUTNINGAR

X7.1 R+
X7.2 R-
X7.3 T+
X7.4 T-
X7.5 SKÄRM/PE

X9.1 +15....+20V
X9.2 0V
X9.3 -15....-20V

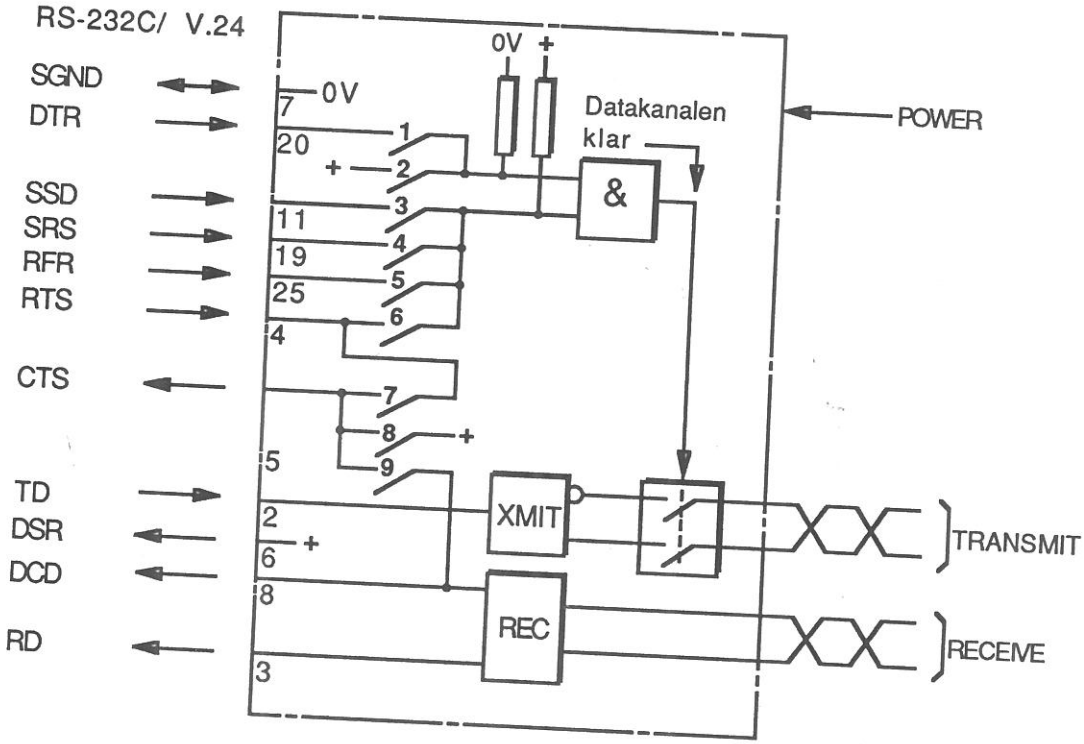
WESTERMO'S BATTERIELIMINATOR
PS - 3 ANSLUTS TILL X1

OVANIFRÅN



1988-03-14

INSTÄLLNINGAR PÅ MA-14



DIP-SWITCHNUMMER						"DATAKANALEN KLAR" styrs av:
1	2	3	4	5	6	
	▒					Alltid "TILL"
	X	X				SSD (stift 11)
	X		X			SRS (stift 19)
	X			X		RFR (stift 25)
	X				X	RTS
X		X				DTR och SSD
X			X			DTR och SRS
X				X		DTR och RFR
X					X	DTR och RTS

DIP SWITCH NUMMER			CTS (stift 5) styrs av:
7	8	9	
			Alltid "FRÅN"
▒			RTS
	X		Alltid "TILL"
		X	DCD

X = ON

Tom ruta = OFF

▒ = inställn. från fabrik