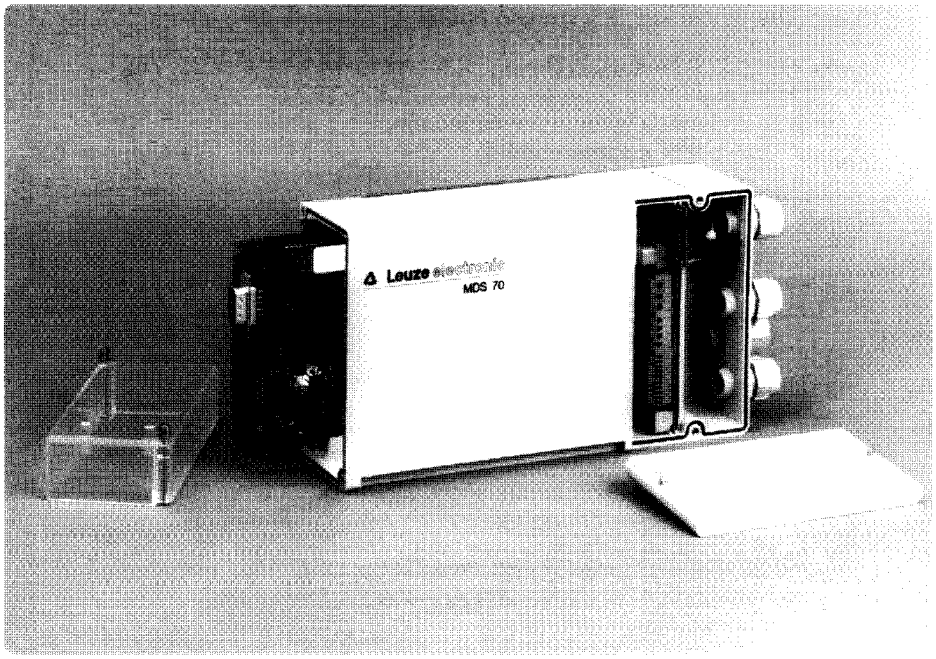
Modular Decoder System MDS 70



Master/ Slave

autoControl

18..36 VDC

1000 Scans/s Realtime

Modular

The modular Decoder System allows the connection of the compact, extremely small scanning heads of the BCL 5 and BCL 7 family. Heart of the system is the powerful Barcode Decoder DE 70. The DE 70 receives the reflected signals from the scanning head, after decoding the data is made available for the Host in form of a data telegram. Beside the Decoder the complete system MDS 70 includes a optional backplate on which all connections can be done. The rugged, robust plastic housing makes possible an easy mounting and offers the protection class IP 64. Alternatively the Decoder can be integrated as an independent unit, space-saving in a 19" racks, switch cabinets or other housings. The dimensions of the decoder corresponds to the European format card, the connection is done on the rearside by means of a 64-pin board.

Special features

- Due to the modular architecture the system can be adapted to individual requirements.
- By means of different interface versions the physical connection to all usual PC or PLCs is possible.
- Up to 32 barcode readers can be interlinked via the Leuze network multiNet Plus without using an additional network card.
- Two scanning heads are connectable to only one decoder, using IM 46 or IM 47.
- SMD-Technique and the use of an ASIC assures powerful decoder functions and parameter setups despite small dimensions. For example several labels, also with different codes, can be simultaneously read and decoded in real time.
  Up to 1000 real time decoding processes per second.
- By separating the optics and electronic system the connectable scanning heads can be extremely small. Thus the system can be used for special applications which normally could not have been realized due to the dimensions of the machinery concept. Other reasons to separate scanning head and decoder are: Easy maintenance by exchanging one component, whereas the corresponding decoder can be mounted and parameterized. If necessary one scanning head can be exchanged without impairment of other scanners in the network. The connection of the decoder to the network can be maintained.
- Low power consumption: 5VA; operating voltage for decoder and scanning heads: 18..36 VDC.
- autoControl for the detection of dirty or damaged barcodes.

Specifications — Decodersystem MDS 70

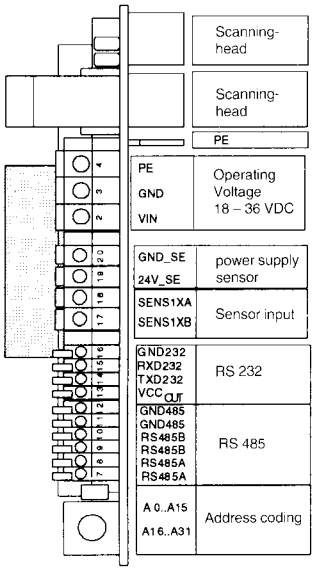
Operating voltage	18 – 36 VDC; for both decoder and scanning head
Power consumption	approx. 5 VA; incl. 1 scanning head approx. 7 VA; incl. 2 scanning heads
Connections / Interfaces Connections on the backplate (compare ordering information)	1x RS 232, 9 pins. Sub-D plug (X2, on the front side of DE 70) Connector plug for scanning heads: BCL 5, BCL 7 Supply voltage, interface combinations, switching ports, address coding
Pin Assignment of auxiliary interface X2 RS 232, 9 pins. Sub-D plug	Transmit Data TXD 3 Receive Data RXD 2 Request to send RTS 7 Clear to send CTS 8 Ground Gnd 5
Baud Rate	110..115.200 Bd
Number of data bits	7, 8 bit
Parity	even, odd, none
Stop bit(s)	1 or 2
Protocol	RTS CTS; ACK NAK; multiNet Plus; 3964(R),RK 512(R); XON XOFF; others on request
Code-types	Code 39, Family Code 2/5, Pharma-Code, UPC A/E, Codabar, Code 128, EAN, EAN Addendum, EAN 128, others on request
Real time decoding speed	1000 Scans/s real time
LED Display	4 LED's red 1: Sensor port active (besides LED green) red 2: Decoding active (besides LED yellow) green: the microprocessor is carrying out the program yellow: Error/Warning additional functions are displayed by flashing of the LED
RESET Button	The RESET Button on front of the DE 70 board allows you to make a Hardware RESET (or Software RESET, using decoder Software V 44.xx or higher)
Hardware RESET	Loads default Software from 40 pin EPROM ***Warning:*** all customer specific parameter settings will be lost!
Software RESET	Restarts the actual decoder software with customer specific parameter settings
Software up to V 43.xx	*Hardware RESET:* switch off power supply, push the RESET button and keep it pushed, switch on power supply again, then release RESET button
Software V 44.xx or higher	*Software RESET:* push RESET button >1s and <4s *Hardware RESET:* push RESET button >4s
DIP Switch 2 Auxiliary interface X2	Turn DIP switch 2 in position "ON" to activate the auxiliary RS 232 interface (X2) on front side of the decoder DE 70. Change-over of the DIP switch to position "OFF" returns to normal operation.
Remark:	The data transmission parameters of the auxiliary interface corresponds to the default values: Baudrate: 9600 Bd; Databits: 8; Parity: none; Stopbit: 1
Parameterization/SetUp	Via Terminal or PC resp.. PG 675/685/750; Parameter download via PC or PLC
General Specifications	Operating temperature: 0..50°C Storage temperature: -20..60°C Protection class MDS 70 (with housing) IP 64
Dimensions	DE 70: European Format Card 160 x 100 mm; 4 TE MDS 70 Housing 250 x 120 x 60
Weight	DE 70 appr. 150 g MDS 70 (incl. housing) appr. 1050 g

Connections

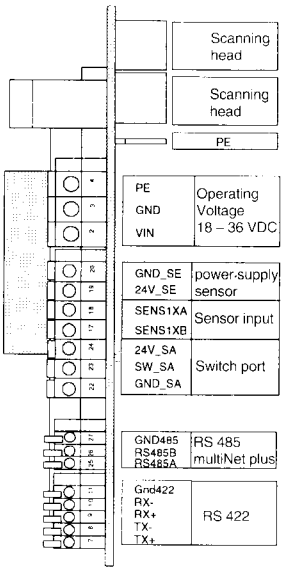
For the use of the modular decoder system (incl. housing) a optional backplate (IM XX) is necessary. On this backplate the whole cabling for the interfaces, the ports and scanning heads will be done.

*** Backplate versions**

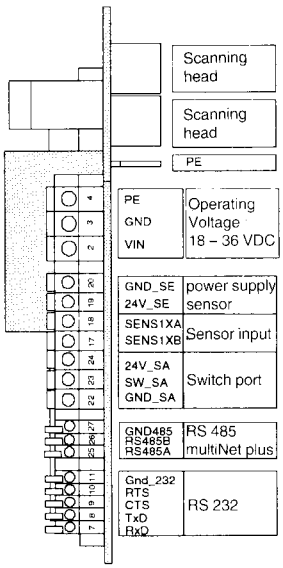
IM 40



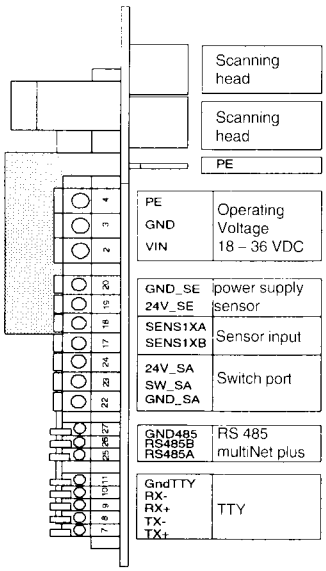
IM 41



IM 43

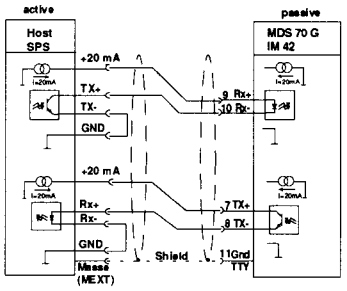


IM 42

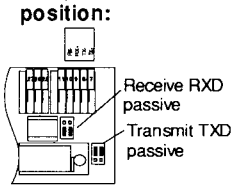


Connection of the TTY-Interface (IM 42)

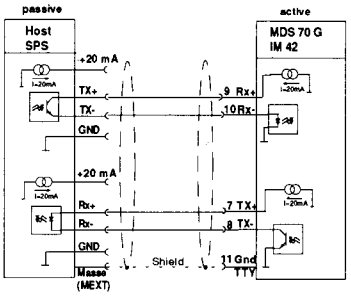
a) MDS 70 passive



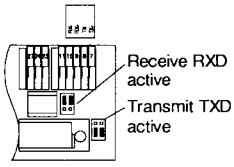
Jumper position:



b) MDS 70 active



Jumper position:



Master backplates for Host connections IM 41, IM 42, IM 43

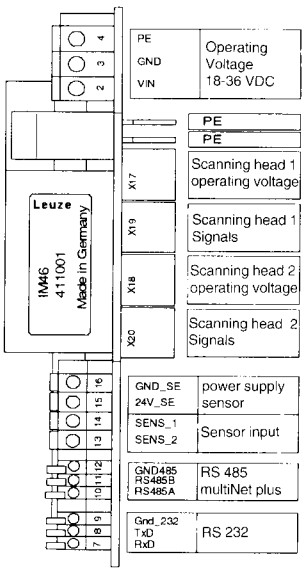
To connect host and decoder a certain master backplate is necessary. This backplate has to be choosen according to the host interface. Besides this interface a second one, as RS 485, is available to interlink further decoders within the Leuze multiNet plus network.

Slave backplate IM 40 for Leuze network multiNet plus

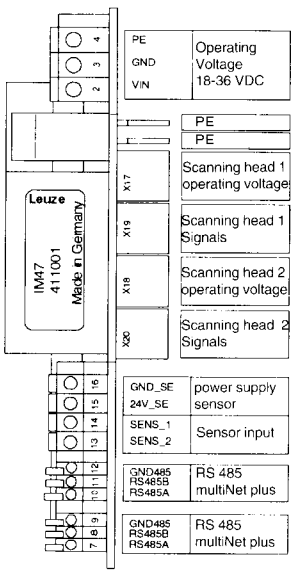
All slave decoders within the network are connected via the backplate IM 40. On this interface card the address coding for each slave decoder has to be done. The IM 40 has two times a RS 485 interface (incoming, outgoing), to loop through the decoder in the network.

Backplates for the Duplex Mode

IM 46 with RS 232 Hostinterface



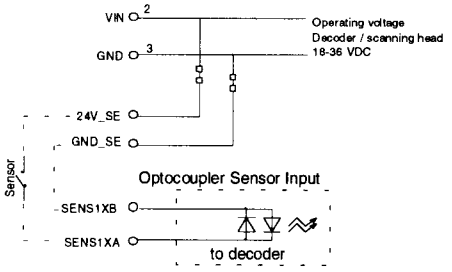
IM 47 with RS 485 for multiNet plus



By use of the backplates IM 46 and IM 47 it is possible to connect two scanning heads onto one decoder.
Default mode is multiScan. This means both scanning heads will be activated at the same time via one sensor input (SENS_1) and both will be deactivated after decoding of one barcode, read by either scanning head 1 or 2.
In the second operating mode it is possible to activate both scanning heads separate and to transmit two reading results. In this mode the scanrate will be reduced to approx. half of the standard scanrate of the used scanning heads.
The backplate IM 46 is used to connect host and decoder; IM 47 to interlink the decoders within the Leuze multiNet plus network.

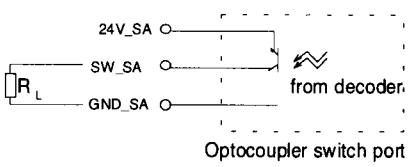
Sensor input

The sensor input is galv. isolated. The operating voltage and ground can either be taken from Pin 24V_SE, GND_SE, or from externally. On IM 46 and IM 47 two sensors can be connected, ground is already internally bridged.



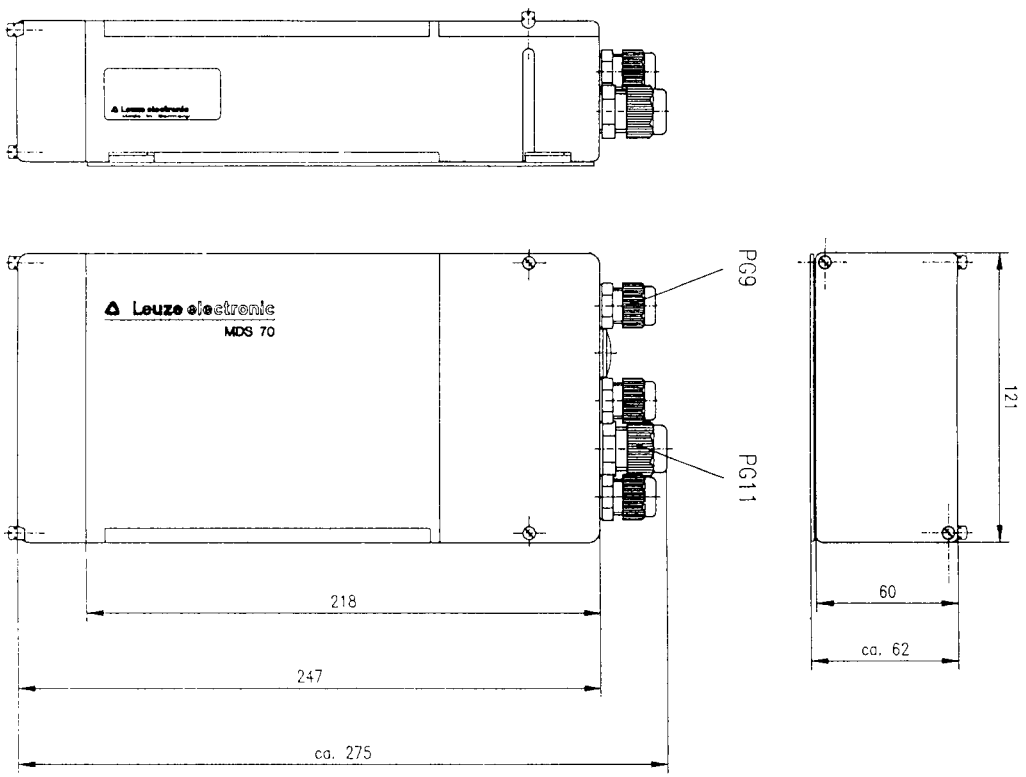
Switch Port

The switch port is galv. isolated. A operating voltage of 24 VDC must be connected on Pin 24V_SA.
The permissible load of the switch port is 100mA.

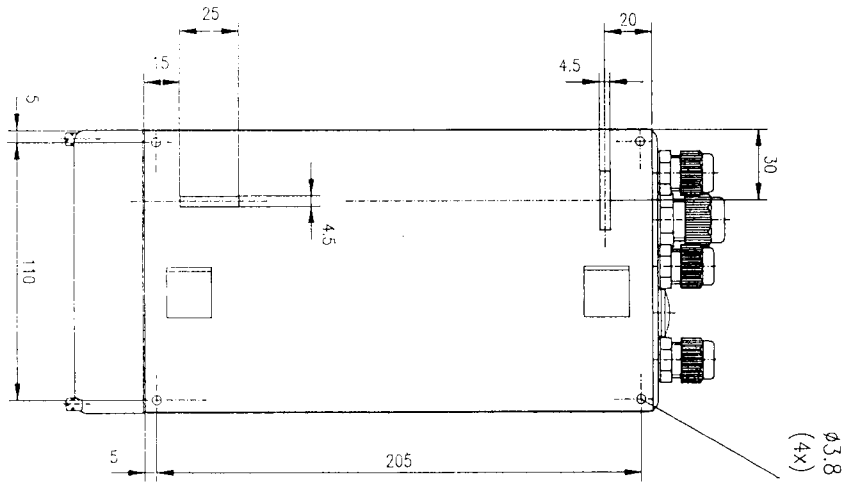


Dimensions (mm)

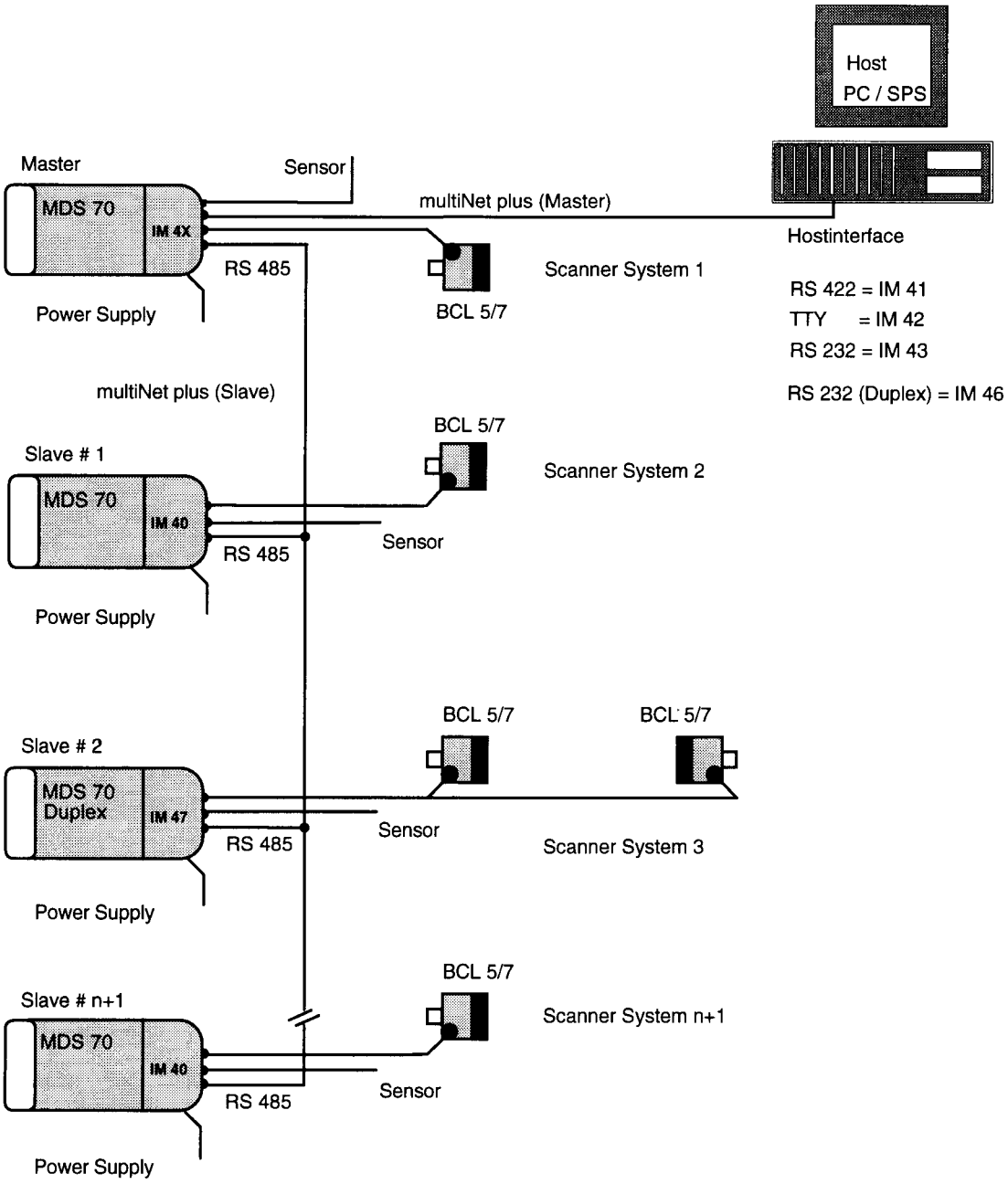
MDS 70



MDS 70 with Mounting kit



MDS 70 network configuration Leuze multiNet plus



Ordering Information modular Decodersystem MDS 70

Ordering Information	Function	
Decoder incl. housing/backplate*	**Host-Interface**	**multiNet Plus connection**
DE 70 G-IM 40		RS 485 Slave + Address coding
DE 70 G-IM 41	RS 422	RS 485 Master
DE 70 G-IM 42	TTY	RS 485 Master
DE 70 G-IM 43	RS 232	RS 485 Master
DE 70 G-IM 46 Duplex	RS 232	RS 485 Master
DE 70 G-IM 47 Duplex		RS 485 Slave + Address coding
optional: Display F1		

To choose the right scanning head according the reading field dimensions, modul-width of the barcode and other important parameters, please ask for the seperate data sheets of BCL 5 and BCL 7. For connecting the DE 70 without backplate, please use the additional data sheet of the DE 70 with the complete pin assignment of the 64 pole connector.