



## Specifications

	MA 2	MA 2 L
<b>Electrical data</b>		
Operating voltage $U_B$ <sup>1)</sup>	Please observe the voltage specifications of the respective Leuze identification system	
Power consumption	0,1 VA	
Switching input	Please observe the voltage specifications of the respective Leuze identification system	
Switching output	$I_{max} = 100\text{ mA}$ output voltage = operating voltage	
<b>Mechanical data</b>		
Housing	diecast aluminium	diecast aluminium
Housing cover	sheet steel	
Weight	660 g	575 g
Connection type	cable with connector KB 031	cable with connector KB 040
<b>Environmental data</b>		
Ambient temp. (operation/storage)	-10°C ... +50°C/-20°C ... +60°C	
Protection class	IP 54	
Valid standards document	IEC 801	
Air humidity	max. 90% rel. humidity, non-condensing	
<b>Indicators</b>		
LED green	switch 1	

1) Please observe the voltage specifications of the respective Leuze identification system

## Description

The MA 2 or MA 2 L is a connector unit for the BCL 21/22, BCL 31/32, VisionREADER 2300 and RF Ident devices. It significantly simplifies both the electrical installation and the commissioning and maintenance of the respective device. In addition, it permits the networking of several identification systems. The figure shows the combination of the connector unit and a BCL device.

All BCL 21/22 from software version 02.00 onwards may be connected to the MA 2. All BCL 31/32, VisionREADER und RF Ident devices with a cable length of up to 3m may be connected to the MA 2/MA 2 L. The data are coded in the BCL identifier as follows:

### BCL 21/22 XYZ

The connector type is coded at the **X** location:

**X = 2:** circuit board connector

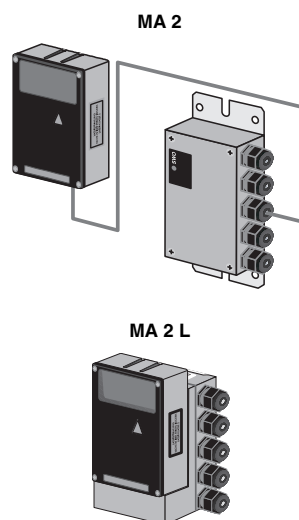
The length of the connection cable used is coded at the **Y** location:

**Y = 0:** 0.8m connection cable

**Y = 1:** 3m connection cable

The BCL 31/32 and the VR2300 are connected via KB 031 3000 to the MA 2 or directly (or with KB 040) to the MA 2 L.

RF Ident devices are connected to the MA 2 via the cable integrated into the unit.



## Tables

### Remarks

- The scanner must not be plugged in if the power is on.

## Order guide

	Type	Order code
Connector unit for BCL 21/22, BCL 31/32	MA 2	500 31256
Connector unit for VR2300, RFI, RFM	MA 2	500 31256
Connector unit for BCL 31/32, VR2300	MA 2 L	500 36186

## MA 2/MA 2 L

### Operational controls and Connection

#### Setting the network address

Rotary switch

position 0: operation with BCL 22, BCL 32, VR2300, RFI, RFM  
 position 1 to F: multiNet slave address  
 top: low address range 0 ... 15  
 bottom: high address range 16 ... 31

Jumper

#### Interface mode

DIP switch

SERV: service interface active/ host interface deactivated  
 BETR: host interface active

#### Service connector

Sub-D connector, 9 pin

RS 232 interface for service/ setup operation  
 standard data format: 9600 baud, 8 data bits, 1 stop bit, no parity  
 2=RxD, 3=TxD, 5=GND, 7=RTS, 8=CTS

#### Connector for BCL and VR2300

MA 2: circuit board connector  
 MA 2 L: 15 pin Sub-D connector

connection for BCL, VR2300, RF Ident devices  
 direct connection for BCL 31/32 through plugging onto the MA 2 L

#### RS 232 interface

Terminal 23  
 Terminal 24  
 Terminals 5-6

The RS232 interface is not floating.  
 RxD in connection with BCL 22, BCL 32, VR2300 and RF Ident  
 TxD in connection with BCL 22, BCL 32, VR2300 and RF Ident  
 GND in connection with BCL 22, BCL 32, VR2300 and RF Ident

#### RS 485 interface

Terminals 1-2  
 Terminals 3-4  
 Terminals 5-6

The RS 485 interface connections are implemented twice, for insertion.  
 The RS 485 interface is not floating.

##### Signal BCL 21, BCL 31

RS 485 A  
 RS 485 B  
 RS 485 GND

##### Signal BCL 22, BCL 32, VR2300

CTS  
 RTS  
 GND

#### Switching inputs

Terminal 7  
 Terminal 9  
 Terminal 11  
 Terminal 12

##### Signal BCL 21, BCL 31, RF Ident

RES, only 1 switching input present  
 SE1 - Switching input 1, 12 ... 30VDC  
 VDD\_SE - supply voltage, switching input, equal to V\_IN device  
 GND\_SE - switching input ground, equal to GND\_IN device, switching input asymmetric to GND

##### Signal BCL 22, BCL 32, VR2300

SE2 - switching input 2, 12 ... 30VDC  
 SE1 - Switching input 1, 12 ... 30VDC

#### Switching outputs

Terminal 13  
 Terminal 14  
 Terminal 16

##### Signal BCL 21, BCL 31, RF Ident

RES, only 1 switching output present  
 SA1 - switching output 1  
 GND\_SA - external supply voltage switching output 0VDC  
 Load must be connected asymmetrically to GND.  
 The switching voltage for the output is generated by the operating voltage V\_IN:  
 VDD\_SA = VDD\_IN  
 GND\_SA = GND\_IN

##### Signal BCL 22, BCL 32, VR2300

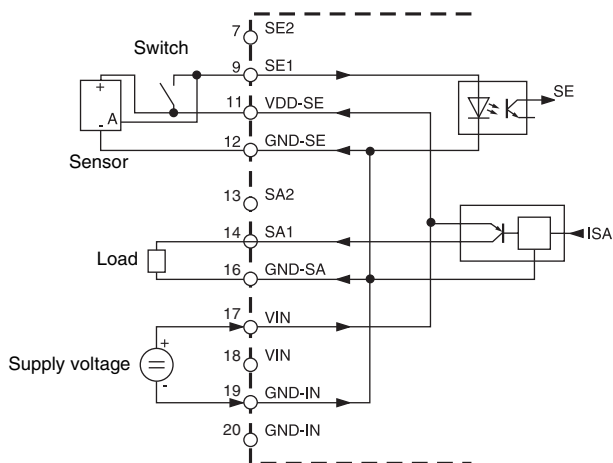
SA2 - switching output 2  
 SA1 - switching output 1

#### Operating voltage

Terminals 17-18  
 Terminals 19-20  
 Terminals 21-22

Connection terminals for the operating voltage of the MA 2/MA 2 L and for the BCL used.  
 Dual design of the voltage supply connections for insertion or for the supply of further components.  
**Attention! PE must be connected for protection against faults!**  
 V\_IN operating voltage 10 ... 30VDC  
 GND\_IN operating voltage 0VDC  
 PE protective earth, grounding

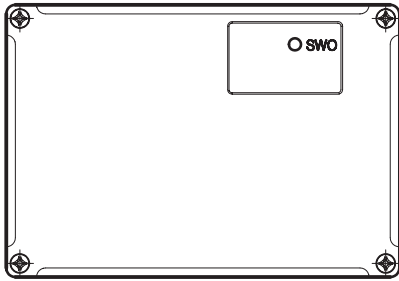
### Circuitry of the connector unit





### Indicators

A LED labelled "SWO" is located at the connector unit. It indicates the state of the switching output 1.



In the standard setting, the LED indicates the decoding of a bar code. Further states of the switching output may be found in the Technical description BCL 21/22, BCL 31/32, VisionREADER 2300 or RF Ident devices.

### Overview of the possible device combinations

