



BCL 34

PROFIBUS Inside



- PROFIBUS transmission rate max. 12 MBd
- Easy commissioning
- Parameterisation via standard planning tool
- 49 modules are available which are transmitted depending on the application
- Scanning rate 1000 scans/s
- "autoRefIAct" automatic reflector activation
- Reference code
- Simple mounting and fastening
- J Optics for ink-jet applications
- Devices with integrated heating

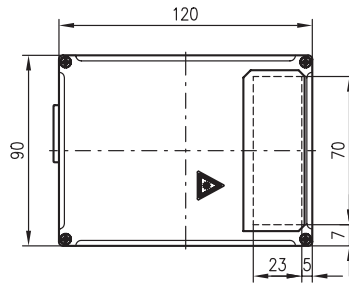


Accessories:

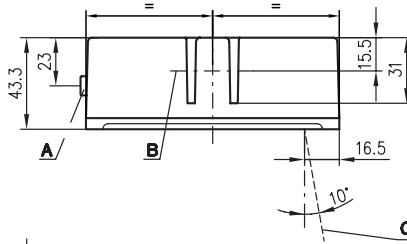
(available separately)

- Modular hood with integrated connectors PWR, DP IN, DP OUT (MS 34 103)
- Modular hood with integrated connectors PWR, DP IN, DP OUT, SW IN/OUT and MSD (MS 34 105)
- Modular Service Display (MSD 1 101)
- Connection cables between MS 34 105 and MSD 1 101 (KB 034-2000)

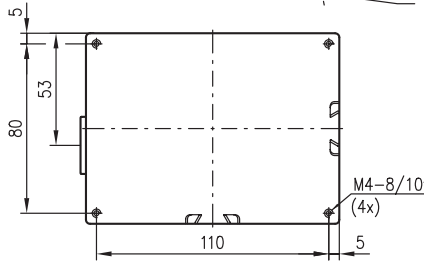
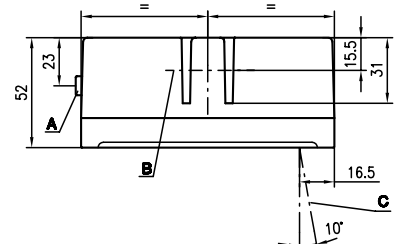
Dimensioned drawing



BCL 34 ... 100



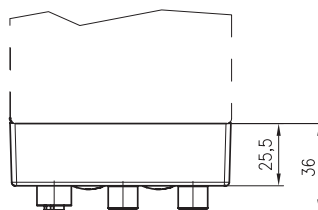
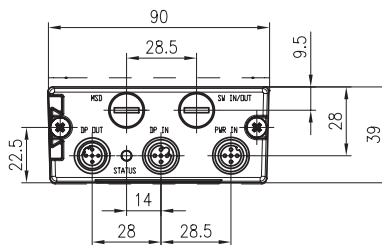
BCL 34 ... 100 H



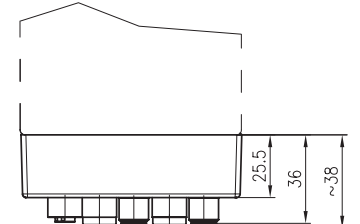
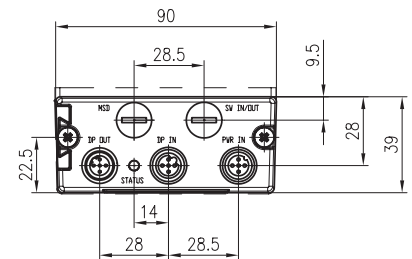
- A** 15-pin plug
- B** Position - centre of the BT 56
- C** Scanning beam - line scanner
Scanning beam - raster scanner
Raster aperture depending on various distances:

Scanner distance [mm]	50	100	200	300	400	450	700
Raster line spacing [mm]	15	21	32	44	55	61	84

MS 34 103



MS 34 105



We reserve the right to make changes • bcl34_e.fm



Specifications

Optical data

Light source	laser diode 650nm
Laser safety class	2 acc. to IEC 60825-1
Laser warning notice	see remark
Scanning rate	BCL with M optics: 1000 scans/s BCL with F optics: 800scans/s BCL with L optics: 800 scans/s BCL with J optics: 1000 scans/s
Resolution	BCL 3x xM 100: m = 0.2mm ... 0.5mm BCL 3x xF 100: m = 0.3mm ... 0.8mm BCL 3x xL 100: m = 0.35 mm ... 0.8mm BCL 3x xJ 100: m ≥ 0.5mm
Reading distance	see reading curves

Software

Code types	all common code types
Software features	selectable output format, autoControl, reference code comparison, multiple read, real time decoding, adjustment mode, diagnosis, reading gate control, control of switching inputs and switching outputs, etc.

Electrical data

Interface type	PROFIBUS DP
Baud rate	9600Bd ... 12MBd
Service interface	only in conjunction with the devices MS 34 105 and MSD RS 232 with fixed data format, 8 data bits, no parity, 1 stop bit
Baud rate	9.6 kBd
Ports	1 switching output, 1 switching input
Operating voltage	without heating: 10 ... 30VDC with heating: 22 ... 26VDC
Power consumption	without heating: max. 5W with heating: max. 30W (of which window heating accounts for 1.5W)

Indicators (at MS 34...)

LED green	a LED red/green indicates the state of the PROFIBUS device initialisation, establishing PROFIBUS communication data operation error on PROFIBUS, error can be resolved by a reset error on PROFIBUS, error cannot be resolved by a reset SERVICE operation active
LED green flashing	
LED green, continuous light	
LED red, flashing	
LED red, continuous light	
LED orange, continuous light	

Mechanical data

Protection class	IP 65	
Weight	BCL 34: without heating: 405g with heating: 480g	MS 34: 160g
Dimensions (WxHxD)	without heating: 120 x 90 x 43mm with heating: 120 x 90 x 52mm	38x90x39mm
Housing	diecast aluminium	diecast zinc

Environmental data

Ambient temp. (operation/storage)	without heating: 0°C ... +40°C/-20°C ... +60°C with heating: -35°C ... +30°C/-20°C ... +60°C
Air humidity	max. 90% rel. humidity, non-condensing
Vibration	IEC 60068-2-6, Test Fc 10 ... 55Hz, 0.35mm
Shock	IEC 60068-2-27, Test Ea 15g/11ms
Repeated shock	IEC 60068-2-29, Test Eb 10g/16ms
Electromagnetic compatibility	EN 61326-1, IEC 61000-4-2, -3, -4 and -6



Notice!

The warm-up time before devices with integrated heating are ready for operation is approx. 30min. (depending on the environmental conditions).

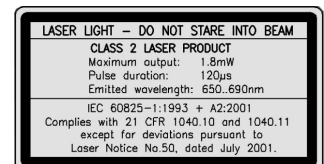
Tables

Diagrams

Remarks

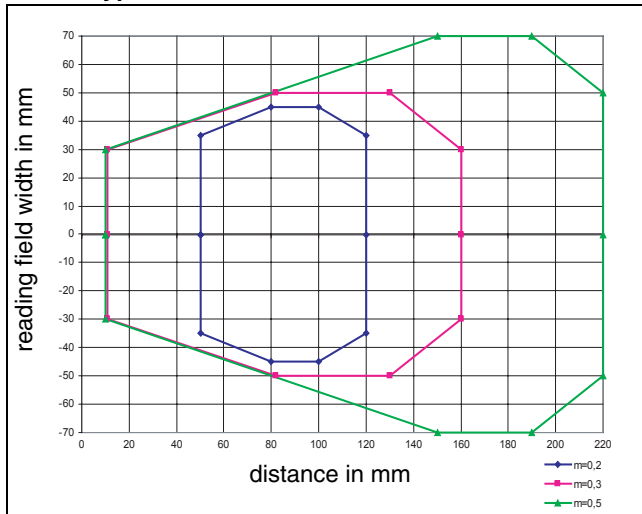


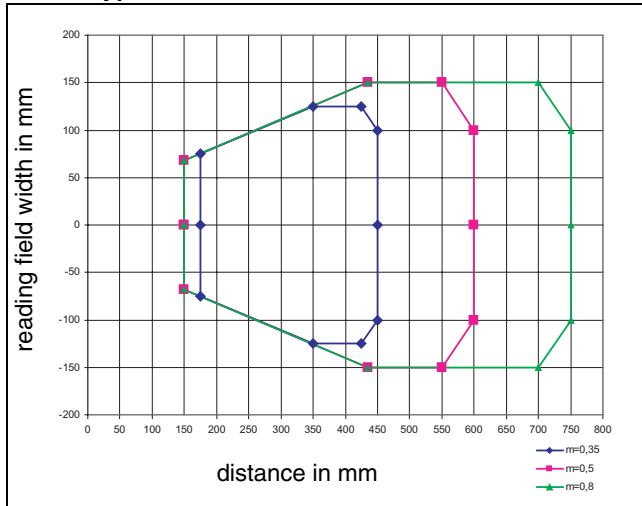
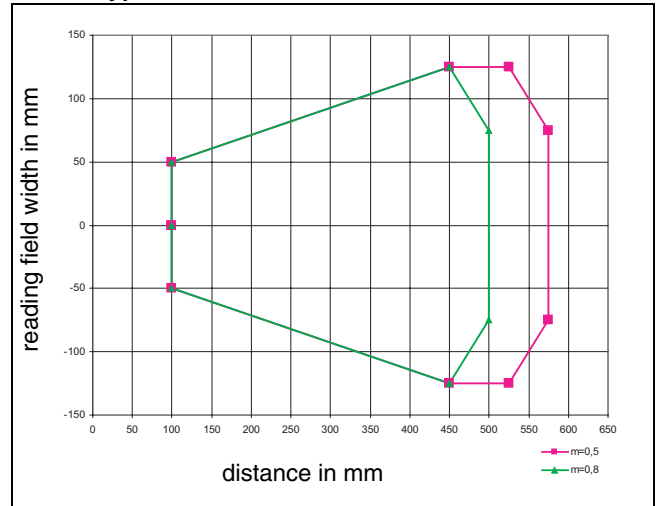
AVOID EXPOSURE - LASER LIGHT IS EMITTED FROM THIS APERTURE
CAUTION: LASER LIGHT WHEN OPEN
DO NOT STARE INTO BEAM



BCL 34

Reading curves for devices without heating

BCL 34 type M with 1000scans/s

BCL 34 type F with 800scans/s

BCL 34 type L with 800scans/s

BCL 34 type J with 1000scans/s ¹⁾


1) The specified reading curve applies to the standard case: black on white, sharp contours, homogeneously printed code.

The actual reading field for an ink-jet application must be checked for the respective application.

Description

The bar code reader BCL 34 is a high-speed scanner with integrated decoder for all bar codes currently in use, e.g. 2/5 Interleaved, EAN, etc. A special bar code reader with optics version J is available for all ink-jet applications. This reader has been optimised for low contrast bar codes that generally feature gaps.

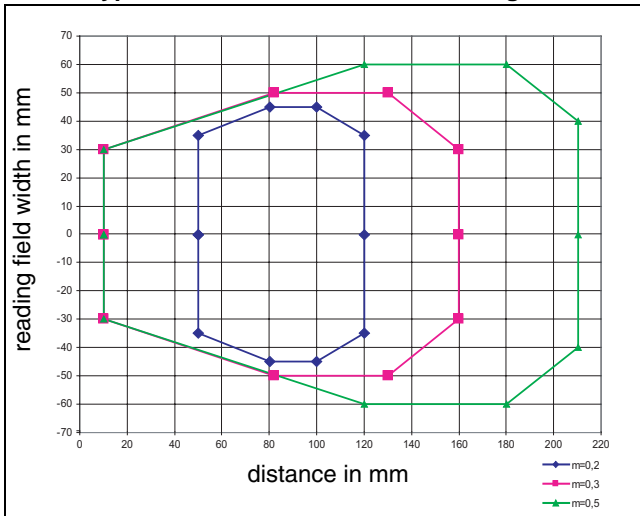
The **integrated PROFIBUS DP** allows for a great variety of device configuration possibilities via PROFIBUS module parameters, thus making possible adaptation to manifold reading tasks.

Parameterisation takes place without additional software, using the controller's own planning tool. **12 Mbd** is the max. attainable transmission rate.

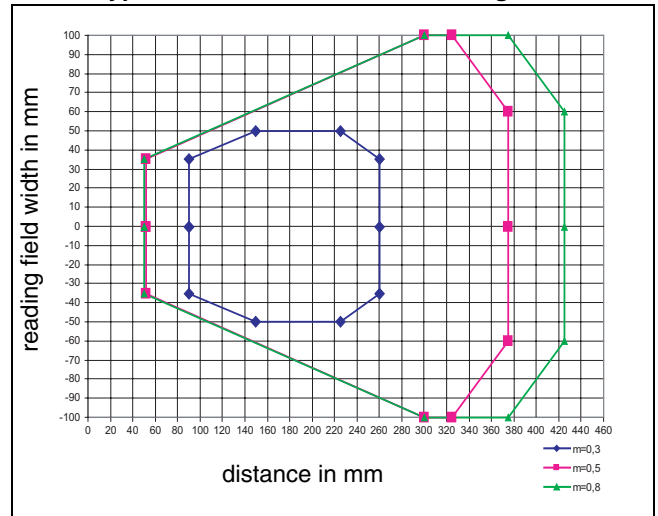
Due to the **small dimensions** of the unit and the short minimum reading distance, the BCL 34 may also be used in highly constrained spaces. The scanners are provided with various methods of activation. These include, for example, the switching inputs for external sensors, the activation via PROFIBUS DP or the new and patented **autoRefIAct**.

Reading curves for devices with heating

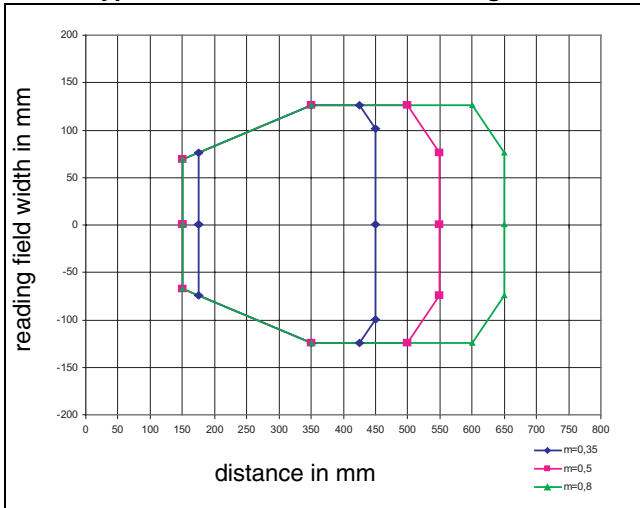
BCL 34 type M with 1000scans/s with heating



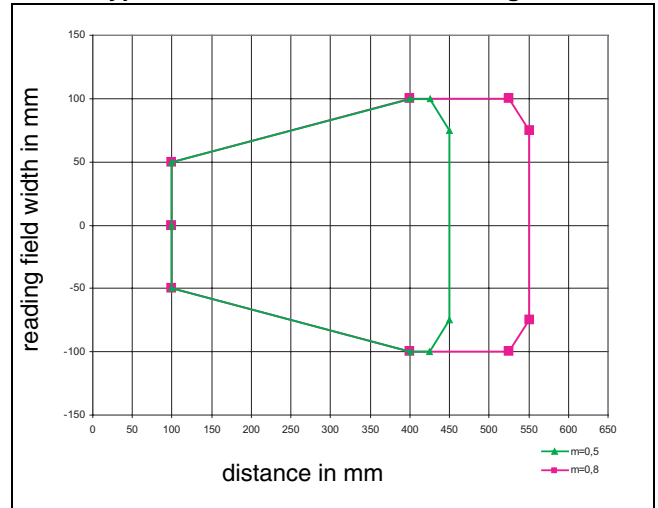
BCL 34 type F with 800scans/s with heating



BCL 34 type L with 800scans/s with heating



BCL 34 type J with 1000scans/s with heating 1)



1) The specified reading curve applies to the standard case: black on white, sharp contours, homogeneously printed code.

The actual reading field for an ink-jet application must be checked for the respective application.

Description

autoReflAct stands for automatic reflector activation and makes possible **activation without additional sensors**. This is achieved by directing the scanner with reduced scanning beam towards a reflector mounted behind the conveyor path. As long as the scanner is targeted at the reflector, the read gate remains closed. If, however, the reflector is blocked by an object such as a container with a bar code label, the scanner activates the read procedure, and the label on the container is read. When the path from the scanner to the reflector has cleared, the read procedure has completed and the scanning beam is reduced and again directed onto the reflector. The read gate is closed.

The available **heating devices** are optimally suited for use in outdoor and refrigeration applications. The device's regulated body heating brings the device to the required operating temperature, and the window heating prevents condensing air humidity from fogging the window.

Decisive advantages of the Leuze bar code reader BCL 34 with the first directly integrated PROFIBUS DP interface are:

- direct fast communication
- a cost-efficient device concept
- very easy parameterisation
- easy installation and device exchange within seconds



BCL 34

Modules available

Module	Description	Module no.	Parameter	Output data	Input data
Code table extension 1	Extension of the existing code table	1	X		
Code table extension 2	Extension of the existing code table	2	X		
Code table extension 3	Extension of the existing code table	3	X		
Code table extension 4	Extension of the existing code table	4	X		
Multilabel	Output of several barcodes per reading gate	5	X	X	X
Reading gate control	Extended control of the reading gate	6	X		
Check digit	Processing of the barcode checksum	7	X		
EAN designator	Search for an EAN 128 designator	8	X		
Laser control	Start/stop position of the laser.	9	X		
Pharmacode	Definitions for Pharmacode readings	10	X		
Code type properties	The module permits changing the muted zones as well as the line-gap-ratios	11	X		
Data formatting	Specification for formatting the data output	12	X		
Switching input	Switching input properties	13	X		X
Switching output	Switching output properties	14	X	X	
AutoRefIAct	Automatic reflector reading activation	15	X	X	X
AutoControl	Automatic monitoring of the reading properties	16	X		X
Reference code	Activation of reference code comparison and specification of the mode of operation	17	X	X	X
Activation	Control bits for activation of the standard reading operation	18		X	
Activation with ACK	Control bits for activation of the reading operation with acknowledged data transmission	19		X	
Decoder state	Device state during standard reading operation	20			X
Decoding result 1	Bar code information max. 4 bytes	21			X
Decoding result 2	Bar code information max. 8 bytes	22			X
Decoding result 3	Bar code information max. 12 bytes	23			X
Decoding result 4	Bar code information max. 16 bytes	24			X
Decoding result 5	Bar code information max. 20 bytes	25			X
Decoding result 6	Bar code information max. 24 bytes	26			X
Decoding result 7	Bar code information max. 28 bytes	27			X
	Reserved	28-33			
Fragmented reading result	Transmission of the reading results in the fragmented mode	34	X	X	X
Reading gate activations	Number of reading gate activations since system start-up	35			X
Reading gate number	Number of the reading gate since system start-up	36			X
Number of scans per reading gate	Number of the scans in the reading gate	37			X
Code position	Relative position of the barcode label in the scanning beam	38			X
Reading reliability	Number of redundant pieces of information for the barcode	39			X
Number of scans per barcode	Number of scans between the first and the last time of detecting the barcode	40			X
Scans with info	Number of scans with processed information	41			X
Decoding quality	Quality of the reading result	42			X
Code direction	Orientation of the barcode	43			X
Number of digits	Number of digits in the barcode	44			X
Code type	Barcode type	45			X
Alignment mode 1	Function for device positioning	46		X	X
Service	Set all parameters to the factory settings	47		X	X
Alignment mode 2	Function for device positioning (output in %)	48		X	X
Switching output expansion	Defines additional parameters for the switching output (use only in combination with module 14).	49	X		X



Order guide

Type	Description	Part No.
BCL 34 S M 100	Single line scanner, integrated PROFIBUS, M optics	500 37229
BCL 34 S F 100	Single line scanner, integrated PROFIBUS, F optics	500 37228
BCL 34 S L 100	Single line scanner, integrated PROFIBUS, L optics	500 41381
BCL 34 S J 100	Single line scanner, integrated PROFIBUS, J optics for ink-jet applications	501 04023
BCL 34 R1 M 100	Raster scanner, integrated PROFIBUS, M optics	500 37227
BCL 34 R1 F 100	Raster scanner, integrated PROFIBUS, F optics	500 37226
BCL 34 R1 L 100	Raster scanner, integrated PROFIBUS, L optics	500 41382
BCL 34 R1 J 100	Raster scanner, integrated PROFIBUS, J optics for ink-jet applications	500 41801
BCL 34 S M 100 H	Single line scanner, integrated PROFIBUS, M optics, with heating	500 39129
BCL 34 S F 100 H	Single line scanner, integrated PROFIBUS, F optics, with heating	500 39128
BCL 34 S L 100 H	Single line scanner, integrated PROFIBUS, L optics, with heating	501 01903
BCL 34 R1 M 100 H	Raster scanner, integrated PROFIBUS, M optics, with heating	500 39130
BCL 34 R1 F 100 H	Raster scanner, integrated PROFIBUS, F optics, with heating	500 39127
BCL 34 R1 L 100 H	Raster scanner, integrated PROFIBUS, L optics, with heating	501 01901
BCL 34 R1 J 100 H	Raster scanner, integrated PROFIBUS, J optics for ink-jet applications, with heating	501 01902

Order guide for accessories

Type	Description	Part No.
MS 34 103	Modular hood with integrated connectors without connectors for switching input/output and MSD	500 37230
MS 34 105	Modular hood with integrated connectors with connectors for switching input/output and MSD	500 37231
MSD 1 101	Modular Service Display, only with MS 34 105	500 37232
KB 034-2000	Cable for electrical connection between MS 34 105 and MSD 1 101	500 37543
BT 56	Dovetail rod mounting set	50027375
KD 02-5-BA	Connector for PROFIBUS IN	50038538
KD 02-5-SA	Connector for PROFIBUS OUT	50038537
KD 095-5-A	Connector for supply voltage	50020501
TS 02-4-SA	Terminating resistor (necessary if the BCL is the last device on the PROFIBUS)	50038539

Interface connection cable axial Plug - open cable end ¹⁾

KB PB-2000-SA	Ready-made PROFIBUS cable, M12 plug - open cable end, 2m	50104188
KB PB-5000-SA	Ready-made PROFIBUS cable, M12 plug - open cable end, 5m	50104187
KB PB-10000-SA	Ready-made PROFIBUS cable, M12 plug - open cable end, 10m	50104186
KB PB-15000-SA	Ready-made PROFIBUS cable, M12 plug - open cable end, 15m	50104185
KB PB-20000-SA	Ready-made PROFIBUS cable, M12 plug - open cable end, 20m	50104184
KB PB-25000-SA	Ready-made PROFIBUS cable, M12 plug - open cable end, 25m	50104183
KB PB-30000-SA	Ready-made PROFIBUS cable, M12 plug - open cable end, 30m	50104182

Interface connection cable axial Socket - open cable end ¹⁾

KB PB-2000-BA	Ready-made PROFIBUS cable, M12 socket - open cable end, 2m	50104181
KB PB-5000-BA	Ready-made PROFIBUS cable, M12 socket - open cable end, 5m	50104180
KB PB-10000-BA	Ready-made PROFIBUS cable, M12 socket - open cable end, 10m	50104179
KB PB-15000-BA	Ready-made PROFIBUS cable, M12 socket - open cable end, 15m	50104178
KB PB-20000-BA	Ready-made PROFIBUS cable, M12 socket - open cable end, 20m	50104177
KB PB-25000-BA	Ready-made PROFIBUS cable, M12 socket - open cable end, 25m	50104176
KB PB-30000-BA	Ready-made PROFIBUS cable, M12 socket - open cable end, 30m	50104175

Interface connection cable Plug - Socket, axial ¹⁾

KB PB-1000-SBA	Ready-made PROFIBUS cable, M12 plug - M12 socket, 1m	50104096
KB PB-2000-SBA	Ready-made PROFIBUS cable, M12 plug - M12 socket, 2m	50104097
KB PB-5000-SBA	Ready-made PROFIBUS cable, M12 plug - M12 socket, 5m	50104098
KB PB-10000-SBA	Ready-made PROFIBUS cable, M12 plug - M12 socket, 10m	50104099
KB PB-15000-SBA	Ready-made PROFIBUS cable, M12 plug - M12 socket, 15m	50104100
KB PB-20000-SBA	Ready-made PROFIBUS cable, M12 plug - M12 socket, 20m	50104101
KB PB-25000-SBA	Ready-made PROFIBUS cable, M12 plug - M12 socket, 25m	50104174
KB-PB-30000-SBA	Ready-made PROFIBUS cable, M12 plug - M12 socket, 30m	50104173

1) Special lengths can be created on request