

Low-cost tag Ver. comply with ISO15693!!

Low-cost tag Ver.

BIS M series

- Flush-mountable Data carrier
- Comply with ISO15693
- 4 selectable interfaces
 - MELSEC-Q bus
 - CC-Link
 - DeviceNet
 - RS-232C

ID processor for DeviceNet



ID processor for CC-Link



ID reader/writer for RS-232C



ID processor for MELSEC-Q bus



Mifare Data carrier

Memory : 752bytes

Mount in metal type

BIS M-125-01/L

□ 30x30



- Flush-mountable to metal
- Read/Write distance 15mm under flush-mounted condition
- Memory capacity: 752 bytes

Non-metal mount type

BIS M-101-01/L

φ 30



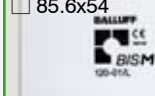
BIS M-102-01/L

φ 50



BIS M-120-01/L

□ 85.6x54



Data carrier comply with ISO15693

Memory : 2000bytes

Mount in metal type

BIS M-122-02/A

φ 10



- Flush-mountable to metal
- Read/Write distance 6mm under flush-mounted condition
- Memory capacity: 2000 bytes

Non-metal mount type

BIS M-110-02/L

φ 20



BIS M-111-02/L

φ 30

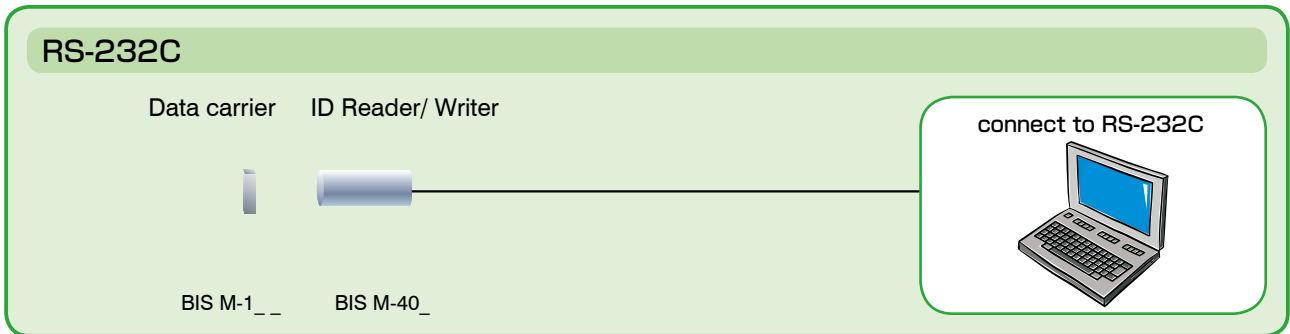
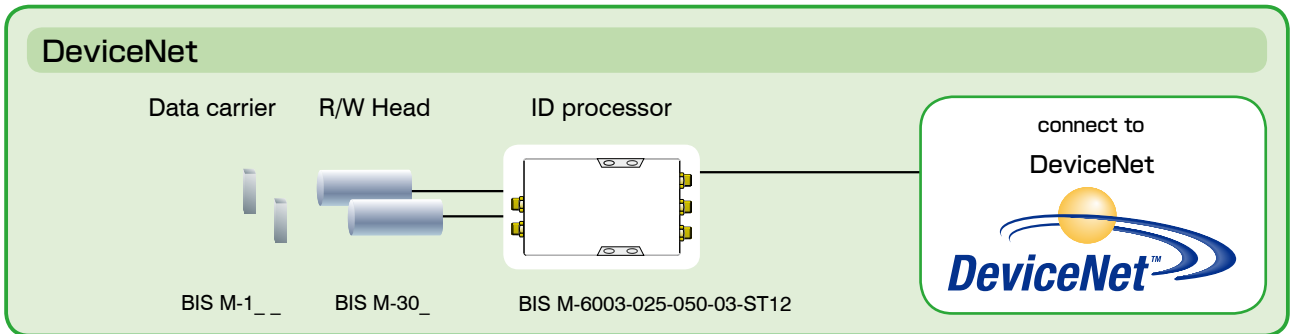
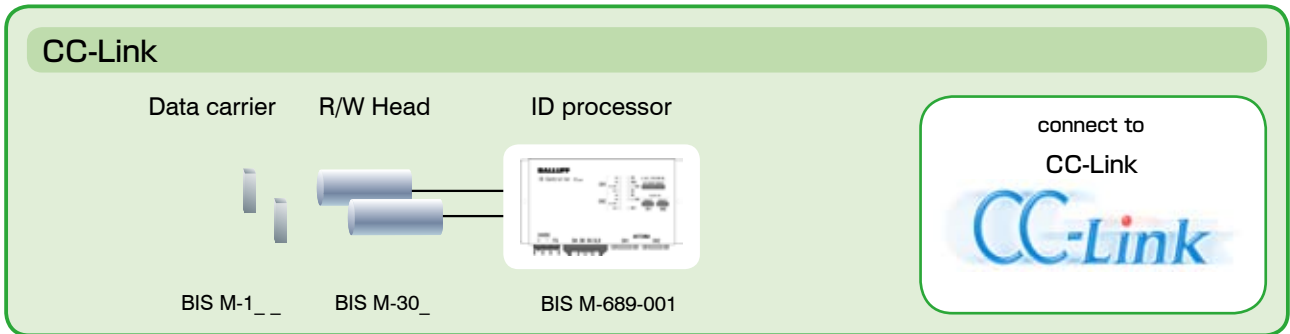
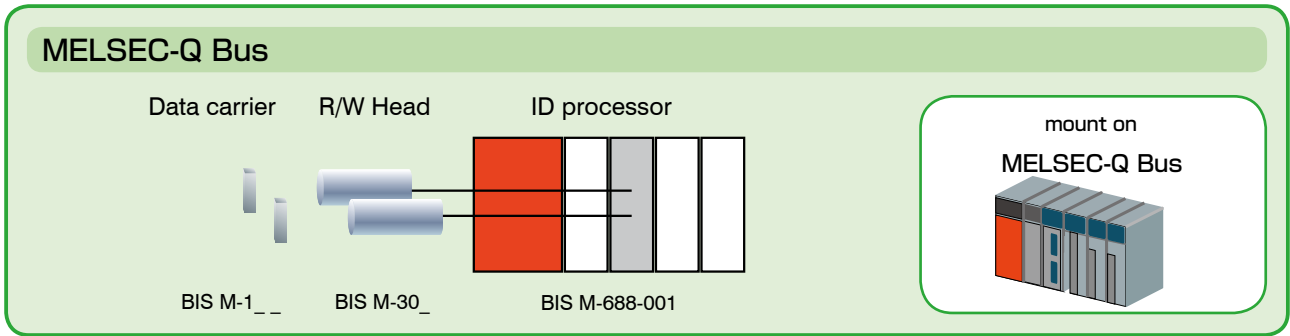


BIS M-112-02/L

φ 50



System configuration






Handy system




BIS M-810-0-006

Data reading and writing with data carrier, or data editing are possible with ID Handy system.

Data carrier

Figure	Size	Type code	Mount in metal	Memory/page unit	Note
	φ 30 x 1.6	BIS M-101-01/L	NG	752bytes/16bytes	Mifare
	φ 50 x 1.6	BIS M-102-01/L	NG	752bytes/16bytes	Mifare
	85.6 x 54 x 0.76	BIS M-120-01/L	NG	752bytes/16bytes	Mifare
	30 x 30 x 6	BIS M-125-01/L	OK	752bytes/16bytes	Mifare
	φ 10 x 4.5	BIS M-122-02/A	OK	2000bytes/16bytes	comply with ISO15693
	φ 20 x 2.5	BIS M-110-02/L	NG	2000bytes/16bytes	comply with ISO15693
	φ 30 x 2.5	BIS M-111-02/L	NG	2000bytes/16bytes	comply with ISO15693
	φ 50 x 3	BIS M-112-02/L	NG	2000bytes/16bytes	comply with ISO15693

R/W Head

Connection type	Type code	Applicable Data carrier	Note
	Tubular M30 x 83	BIS M-300-001-S115	BIS M-101/102/125 BIS M-110/111/112
	Large housing 80 x 80 x 40	BIS M-301-001-S115	BIS M-101/102/120/125 BIS M-110/111/112
	Tubular M18 x 92.5	BIS M-302-001-S115	BIS M-101/102 BIS M-110/111/112/122

ID processor

Interface	Type code	Number of connectable r/w head	Note
MELSEC-Q bus	BIS M-688-001	2CH	
CC-Link	BIS M-689-001	2CH	
DeviceNet	BIS M-6003-025-050-03-ST12	2CH	

ID Reader/ Writer

Interface	Type code	Applicable Data carrier	Note
Serial RS-232C	Tubular M30 x 83	BIS M-400-007-001-00-S115	BIS M-101/102/125 BIS M-110/111/112
Balluff protocol/ German version			
	Large housing 80 x 80 x 40	BIS M-401-007-001-00-S115	BIS M-101/102/120/125 BIS M-110/111/112

Antenna cable(R/W Head ⇔ Host PLC)

Figure	Type code	Note
MELSEC	Straight	BKS-S115-PU-__
	Angle	BKS-S116-PU-__
CC-Link	Straight	BKS-S115-DM-PU-__
	Angle	BKS-S116-DM-PU-__
DeviceNet	Straight	BKS-S117-00
	Straight	BIS Z501-PU1-_/A
	Angle	BIS Z502-PU1-_/A

IF cable and connector

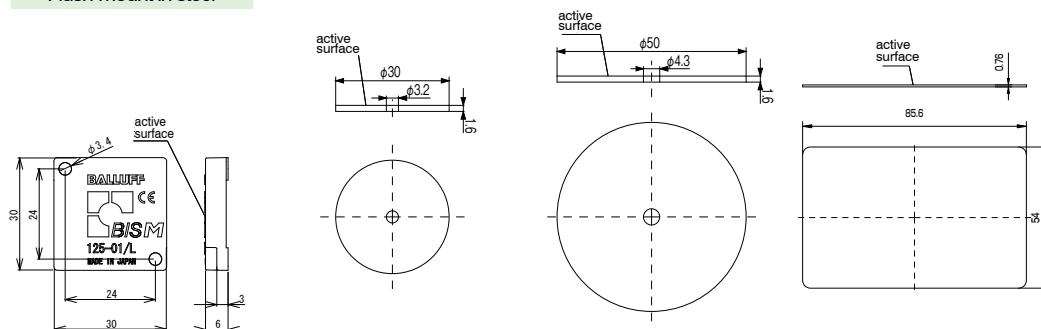
Figure	Type code	Note
DeviceNet	Straight	BKS-S 79-00
		BKS-S 92-00
		BKS-S 94-00
		BKS-S 94-R01
Serial	Straight	BIS Z-AK-001-PU1-03
		BIS C-703-A

Handy unit

Figure	Type code	Note
Control unit	BIS M-810-0-006	

Mifare				
Size	30 x 30 x 6	φ 30 x 1.6	φ 50 x 1.6	85.6 x 54 x 0.76
Housing material	PBT	EP	EP	PVC
Weight	≤ 7g	≤ 1.6g	≤ 2.5g	≤ 5.8g

Flush-mount in steel



Type code	BIS M-125-01/L	BIS M-101-01/L	BIS M-102-01/L	BIS M-120-01/L
Memory type	752bytes/ EEPROM	752bytes/ EEPROM	752bytes/ EEPROM	752bytes/ EEPROM
Operating temperature	-25... +70°C	-25... +70°C	-25... +70°C	-25... +70°C
Storage temperature	-40... +85°C	-40... +85°C	-40... +85°C	-25... +70°C
Protection class	IP67	IP67*1	IP67*1	IP60

Life time	Read	unlimited	unlimited	unlimited	unlimited
	Write	100,000 times	100,000 times	100,000 times	100,000 times
	Data retention	10 years	10 years	10 years	10 years

Flush-mount	Non-metal		Non-metal		Non-metal		Non-metal
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max. r/w distance with;	BIS M-300	0-15mm	0-20mm	-	0-22mm	-	0-32mm	-	-
	BIS M-301	-	0-28mm	-	0-34mm	-	0-45mm	-	0-50mm
	BIS M-302	-	-	-	0-16mm	-	0-20mm	-	-
	BIS M-400	0-15mm	0-20mm	-	0-20mm	-	0-28mm	-	-
	BIS M-401	-	0-27mm	-	0-28mm	-	0-45mm	-	0-50mm

Tightening torque : 1Nm

Tightening torque : 1Nm

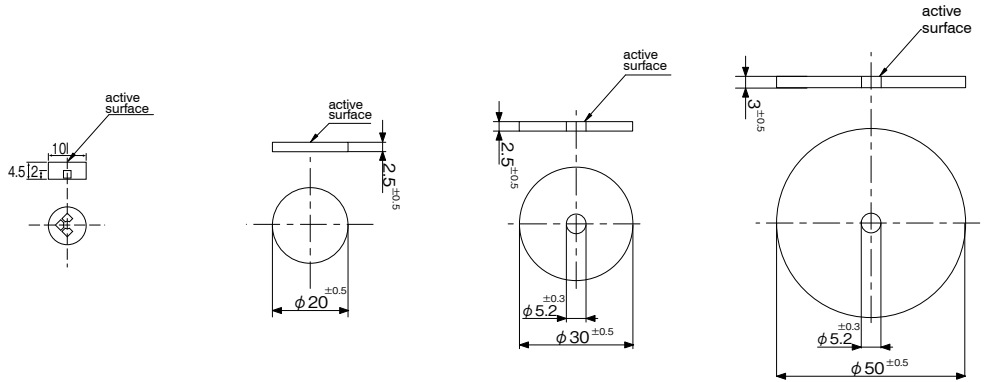


*1 : BIS M-101-01/L and BIS M-102-01/L will be swollen on exposure to water.

+20 degree C for 6 days : 0.3%

+70 degree C for 3 days : 3.0%

ISO15693				
Size	$\phi 10 \times 4.5$	$\phi 20 \times 2.5$	$\phi 30 \times 2.5$	$\phi 50 \times 3$
Housing material	PA12	PA6	PA6	PA6
Weight	$\leq 1.5g$	$\leq 1.3g$	$\leq 3g$	$\leq 9.5g$



Type code		BIS M-122-02/A	BIS M-110-02/L	BIS M-111-02/L	BIS M-112-02/L	
Memory type		2000bytes/ FRAM	2000bytes/ FRAM	2000bytes/ FRAM	2000bytes/ FRAM	
Operating temperature		-25... +70°C	-25... +70°C	-25... +70°C	-25... +70°C	
Storage temperature		-25... +85°C	-25... +85°C	-25... +85°C	-25... +85°C	
Protection class		IP67	IP67*1	IP67*1	IP67*1	
Life time	Read	unlimited	unlimited	unlimited	unlimited	
	Write	10 billion times	10 billion times	10 billion times	10 billion times	
	Data retention	10 years	10 years	10 years	10 years	
		Flush-mount	Non-metal	Non-metal	Non-metal	
max. r/w distance with;	BIS M-300	-	-	0-22mm	-	0-44mm
	BIS M-301	-	-	0-32mm	-	0-70mm
	BIS M-302	0-6mm	0-9mm	0-16mm	0-20mm	0-30mm
	BIS M-400	-	-	0-20mm	0-28mm	0-38mm
	BIS M-401	-	-	0-30mm	0-40mm	20-60mm

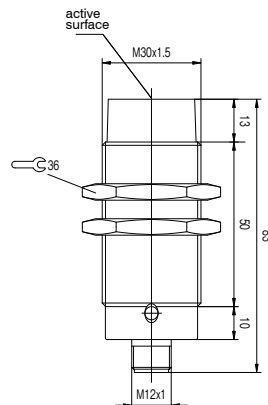
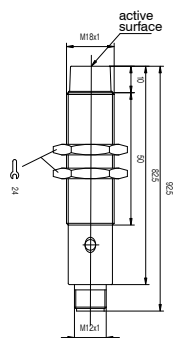
Tightening torque : 1Nm Tightening torque : 1Nm



*1 : BIS M-101-01/L and BIS M-102-01/L will be swollen on exposure to water.

+20 degree C for 6 days : 0.3%
+70 degree C for 3 days : 3.0%

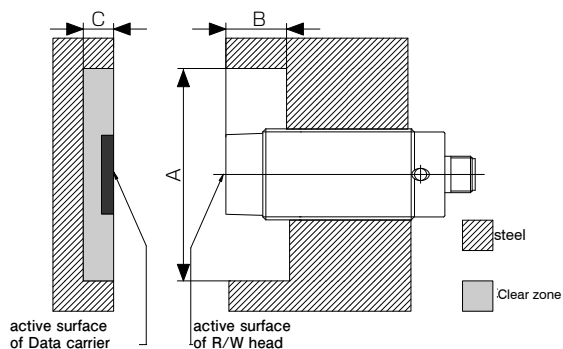
Size	M18	M30
Housing material	Nickel plated brass	Nickel plated brass
Weight	52g	100g



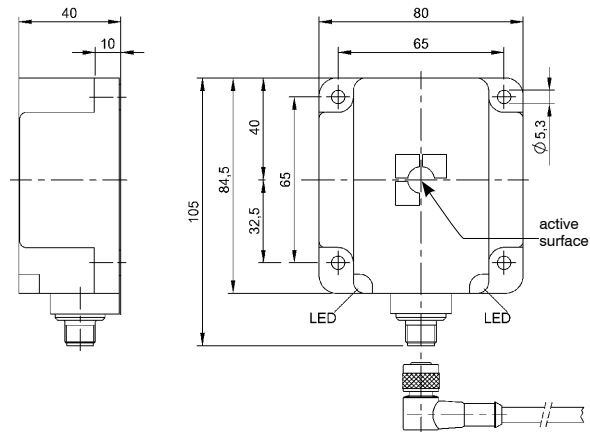
Type code	BIS M-302-001-S115	BIS M-300-001-S115
Mounting in steel	Non-flush	Non-flush
Operating temperature	0... +70°C	0... +70°C
Storage temperature	-20... +85°C	-20... +85°C
Protection class	IP67	IP67
Connection to connector cable	ID processor Depending on ID processor	ID processor Depending on ID processor
Cable length	5m, 10m (Max.25m)	5m, 10m (Max.25m)

Applicable Data carrier	compliance	ISO14443(Mifare)						ISO15693							
		Type code		Type code		Type code		Type code		Type code		Type code			
Clear zone	A	>60	>60	>60	>60	>60	>60	>60	>60	>100	>150	>100	>100	>100	
	B	>30	>30	>20	>20	>30	>30	>30	>30	>30	>30	>30	>30	>30	
	C	>25	>50	>0	>10	>25	>25	>50	0	>16	>25	>50	>25	>25	>50
Writing distance in mm		0-16	0-20	0-6	0-9	0-16	0-20	0-30	0-15	0-20	0-22	0-32	0-22	0-28	0-44
Reaing distance in mm		0-16	0-20	0-6	0-9	0-16	0-20	0-30	0-15	0-20	0-22	0-32	0-22	0-28	0-44
Offset in mm	5mm	±10	±18	±2	±3	±8	±12	±20	±9	±12	±15	±20	±14	±16	±25
	10mm	±8	±14			±6	±10	±18	±7	±10	±15	±20	±12	±14	±24
	15mm	±7	±12			±4	±10	±18	±5	±10	±15	±20	±12	±14	±24
	20mm		±4				±5	±16		±5	±12	±20	±10	±14	±24
	25mm							±8				±14			±22
	30mm											±10			±22
	35mm														±16
	40mm														±16
	45mm														
	50mm														
60mm															
70mm															

Clear zone



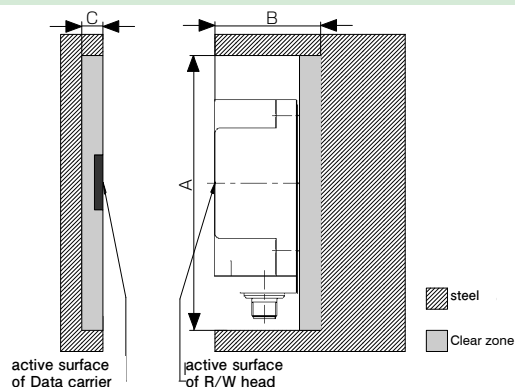
Size	84.5 x 80 x 40
Housing material	PBT + ASA
Weight	190g



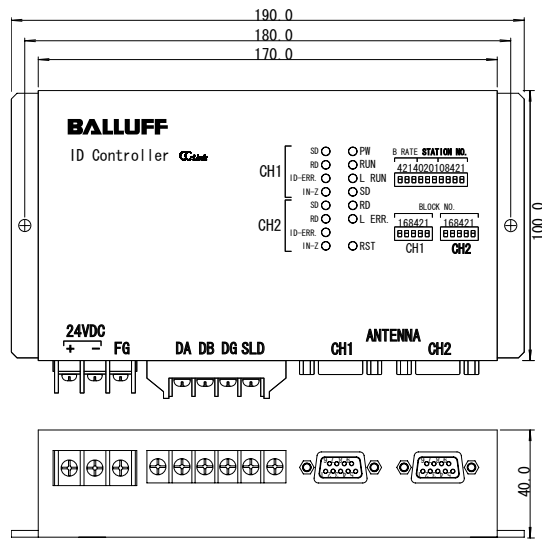
Type code	BIS M-301-001-S115
Mounting in steel	Non-flush
Operating temperature	0...+70°C
Storage temperature	-20...+85°C
Protection class	IP67
Connection to connector cable	ID processor
Cable length	Depending on ID processor
	5m , 10m (Max.25m)

Applicable Data carrier	compliance Type code	ISO14443(Mifare)				ISO15693		
		BIS M-125	BIS M-101	BIS M-102	BIS M-120	BIS M-110	BIS M-111	BIS M-112
Clear zone A		>200	>200	>200	>250	>200	>200	>200
Clear zone B		>70	>70	>70	>70	>70	>70	>70
Clear zone C		>40	>50	>50	>80	>50	>50	>50
Writing distance in mm		0-28	0-34	0-45	0-50	0-32	0-45	0-70
Reading distance in mm		0-28	0-34	0-45	0-50	0-32	0-45	0-70
Offset in mm	5mm	±25	±22	±30	±30	±24	±32	±40
	10mm	±25	±22	±30	±30	±24	±32	±40
	15mm	±25	±22	±30	±30	±24	±32	±40
	20mm	±24	±22	±30	±30	±24	±32	±40
	25mm	±20	±15	±24	±28	±12	±25	±40
	30mm		±15	±24	±28	±12	±25	±40
	35mm			±15	±18		±20	±40
	40mm			±15	±18		±20	±40
	45mm				±4			±35
	50mm				±4			±35
60mm							±20	
70mm							±20	

Clear zone



Number of connectable r/w head	2CH
Interface	CC-Link



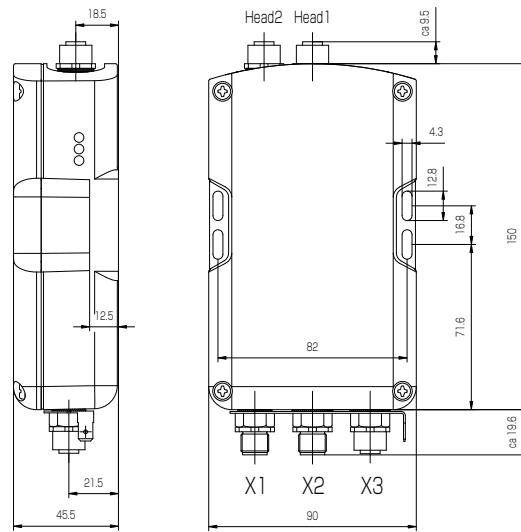
Type code	BIS M-689-001
Supply voltage	24V DC \pm 10%
Current consumption	0.8A
Operating temperature	0...+55°C
Connection to R/W Head	BKS-S115-DM-PU-__ / BKS-S116-DM-PU-__
Connection to Host PLC	CC-Link cable
Remarks	

■ Please request the instruction manual for details about specifications.



Number of connectable r/w head
 Interface

2CH
 DeviceNet



Type code

BIS M-6003-025-050-03-ST12

Supply voltage

24V DC \pm 20%

Current consumption

\leq 0.4A

Operating temperature

0...+50°C

Connection to R/W Head

connector cable : BIS Z-501-PU1-_/A / BIS Z-502-PU1-_/A

Connection to: Power supply
 Control unit

X1 : BKS-S 79-00

X2 (DeviceNet input) : BKS-S 92-00

X3 (DeviceNet output) : BKS-S 94-00/BKS-S 94-R01

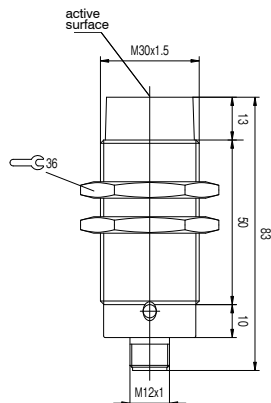
Remarks

EDS file included

■ Please request the instruction manual for details about specifications.



Size	M30
Housing material	Nickel plated brass
Weight	100g

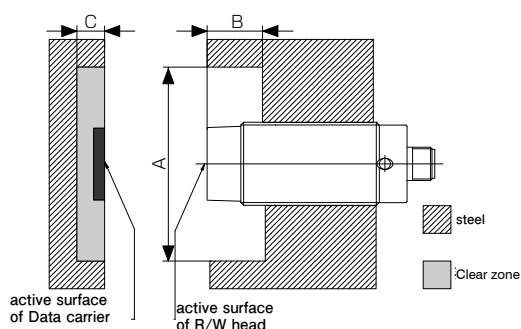


Type code	BIS M-400-007-001-00-S115
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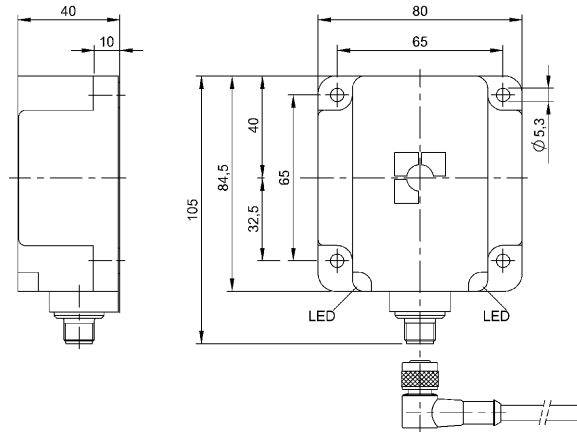
Mounting in steel	Non-flush
Operating temperature	0... +70°C
Supply voltage	24V DC + 10% / -20%
Current consumption	0.05A
Protection class	IP67
Connection To	RS-232C device
IF cable	BIS Z-AK-001-PU1-03
Cable length	80cm

Applicable Data carrier	Compliance Type code	ISO14443(Mifare)			ISO15693			
		BIS M-125	BIS M-101	BIS M-102	BIS M-110	BIS M-111	BIS M-112	
Clear A		>60	>60	>100	>150	>100	>100	>150
Zone B		>30	>30	>30	>30	>30	>30	>30
C		0	>16	>50	>50	>25	>25	>50
		flush						
Writing distance in mm		0-15	0-20	0-20	0-28	0-20	0-28	0-38
Reaing distance in mm		0-15	0-20	0-20	0-28	0-20	0-28	0-38
Offset in mm	2mm	±9	±12	±14	±20	±12	±16	±22
	5mm	±9	±12	±14	±20	±12	±16	±22
	10mm	±7	±10	±10	±20	±8	±14	±20
	15mm	±5	±10	±10	±20	±8	±14	±20
	20mm		±5	±5	±15	±5	±14	±20
	25mm							±16
	30mm							±16
	35mm							±10
	40mm							
	45mm							
50mm								
55mm								
60mm								

Clear zone



Size	84.5 x 80 x 40
Housing material	PBT + ASA
Weight	190g

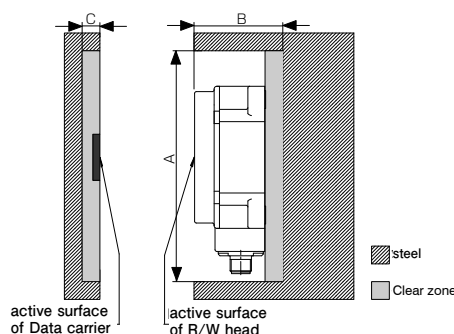


Type code	BIS M-401-007-001-00-S115
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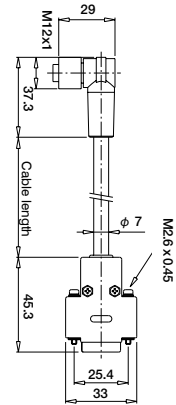
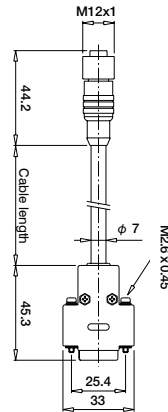
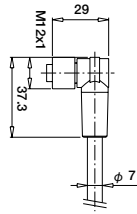
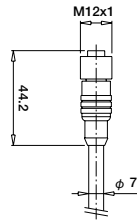
Mounting in steel	Non-flush
Operating temperature	0... +70°C
Supply voltage	24V DC + 10% / -20%
Current consumption	0.05A
Protection class	IP67
Connection to IF cable	RS-232C device BIS Z-AK-001-PU1-03
Cable length	80cm

Applicable data carrier	Compliance Type code	ISO14443(Mifare)				ISO15693		
		BIS M-125	BIS M-101	BIS M-102	BIS M-120	BIS M-110	BIS M-111	BIS M-112
Clear A		>200	>200	>200	>250	>200	>200	>250
Zone B		>70	>70	>70	>70	>50	>50	>50
C		>40	>50	>50	>80	>70	>70	>70
Writing distance in mm		0-27	0-28	0-45	0-50	0-30	0-40	20-60
Reaing distance in mm		0-27	0-28	0-45	0-50	0-30	0-40	20-60
Offset in mm	2mm	±25	±15	±30	±30	±20	±25	---
	5mm	±25	±15	±30	±30	±20	±25	---
	10mm	±25	±15	±30	±30	±20	±25	---
	15mm	±25	±15	±30	±30	±20	±25	---
	20mm	±24	±15	±30	±30	±20	±25	---
	25mm	±20		±24	±28	±10	±20	±35
	30mm			±24	±28	±10	±20	±35
	35mm			±15	±18		±15	±35
	40mm			±15	±18		±15	±35
	45mm				±4			±25
50mm				±4			±25	
55mm							±25	
60mm							±25	

Clear zone



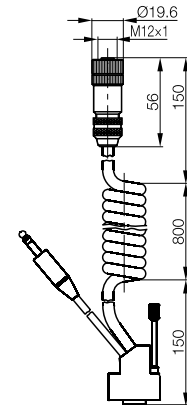
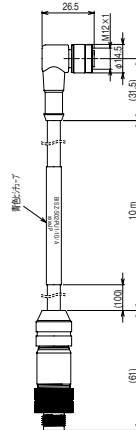
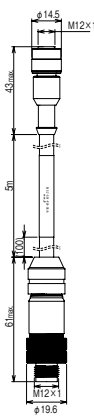
R/W Head ⇔ Processor



Type code	BKS-S115-PU_ _ for BIS M-688	BKS-S116-PU_ _ for BIS M-688	BKS-S115-DM-PU_ _ for BIS M-689	BKS-S116-DM-PU_ _ for BIS M-689
Connector R/W Head side	Round 8pin/ female	Round 8pin/ female	Round 8pin/ female	Round 8pin/ female
Connector Cable	8 x 0.25mm ² /PUR	8 x 0.25mm ² /PUR	8 x 0.25mm ² /PUR	8 x 0.25mm ² /PUR
Connector Processor side	--	--	D-sub 9 pin male	D-sub 9 pin male
Cable length	5,10,15,20,25m	5,10,15,20,25m	5,10,15,20,25m	5,10,15,20,25m
Protection class	IP67	IP67	IP40	IP40

R/W Head ⇔ ID processor

ID Reader/ Writer

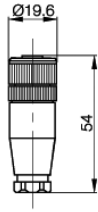


Type code	BIS Z-501-PU1_ _/A for BIS M-6003*	BIS Z-502-PU1_ _/A for BIS M-6003*	Type code	BIS Z-AK-001-PU1-03 BIS M-40 □ /Host PLC
Connector R/W head side	Round 8pin/ female	Round 8pin/ female	Connector ID processor side	Round 8pin/ female
Connector Cable	---	---	Connector Cable Host PLC side	PUR
Connector Processor side	Round 8pin/ male	Round 8pin/ male	Connector Host PLC side	D-sub 9pin female
Cable length	5, 10m	5, 10m	Cable length	80cm
Protection class	IP67	IP67	Protection class	IP40

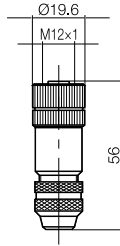
*In the case that the customer wire the Connector for ID processor, please use BKS-S115 or BKS-116 and Connector BKS-S117-00.

AC adapter
BIS C-703-A

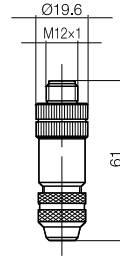
for DeviceNet



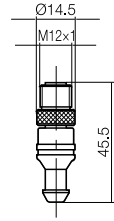
P10021



PL0026



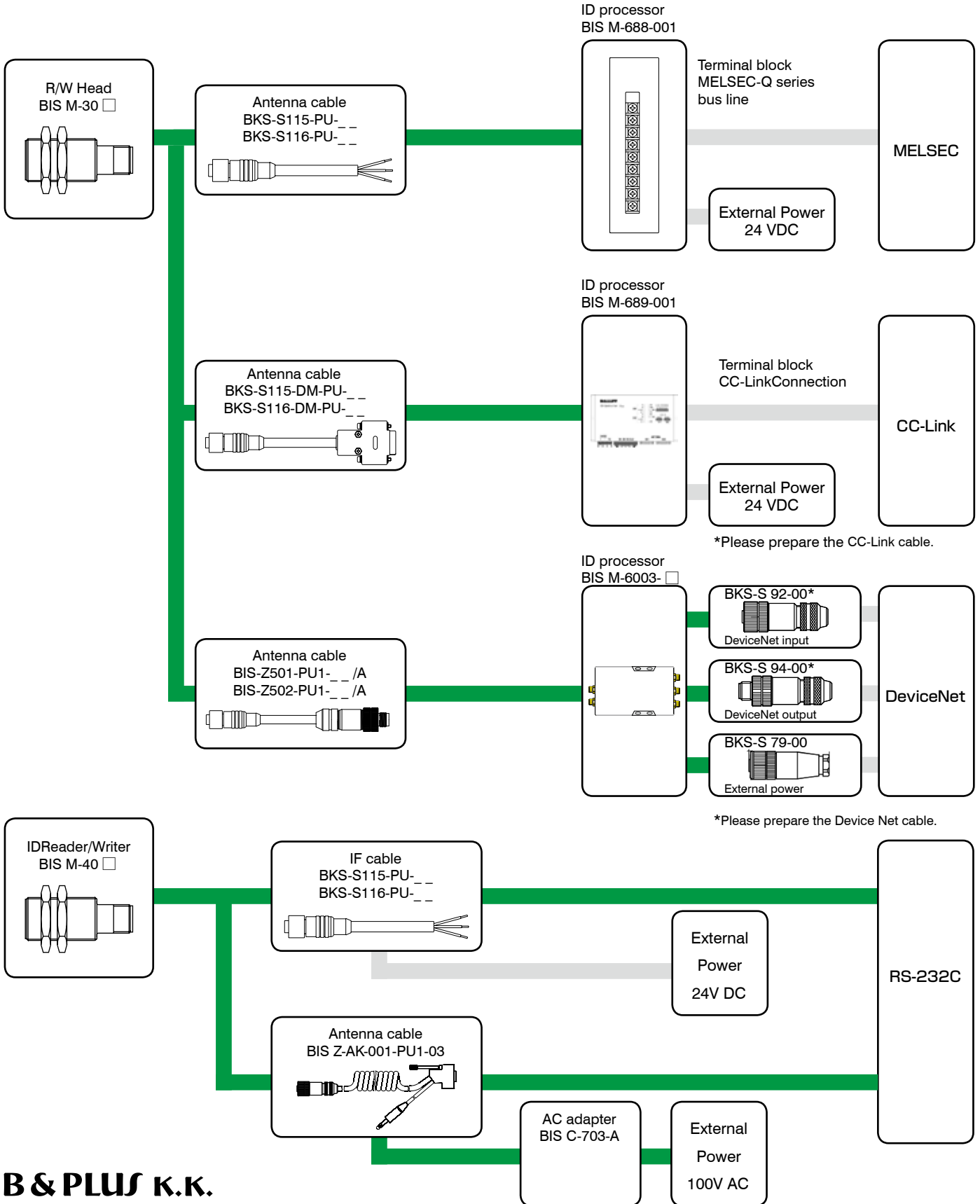
PL0029



PL0030



Type code	BKS-S 79-00	BKS-S 92-00	BKS-S 94-00	BKS-S 94-R01
	Power supply (X1)	DeviceNet input (X2)	DeviceNet output (X3)	Terminater (X3)
Connector	Round 5pin/ female	Round 5pin/ female	Round 5pin/ male	Round 5pin/ male
Processor side cable diameter	4...6mm	6...8mm	6...8mm	
Protection class	IP67	IP67	IP67	IP68



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