

# BC 58

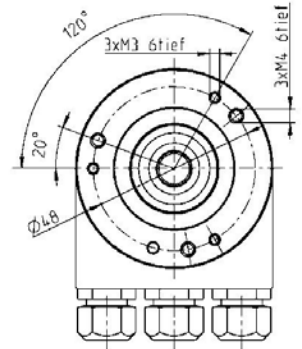
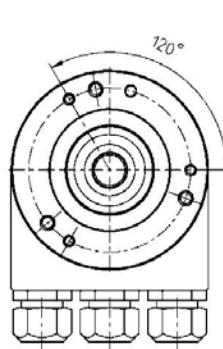
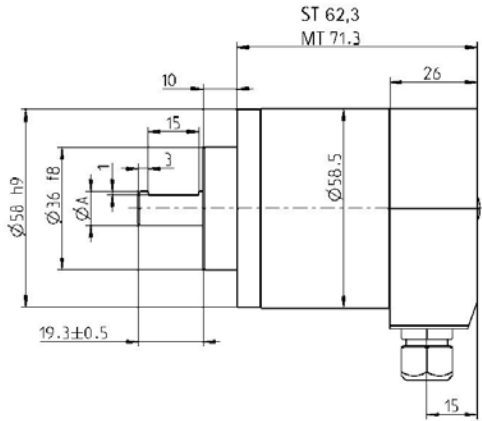
Singleturn / Multiturn  
 short circuit-proof  
 Parallel, SSI, Profibus DP,  
 Interbus (K2) (K3) DeviceNet, CAN, CANopen,



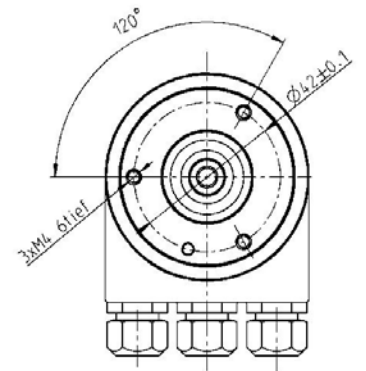
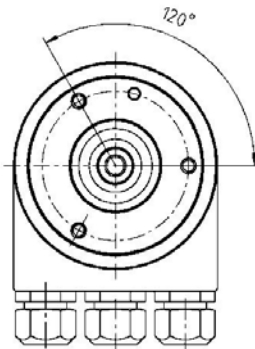
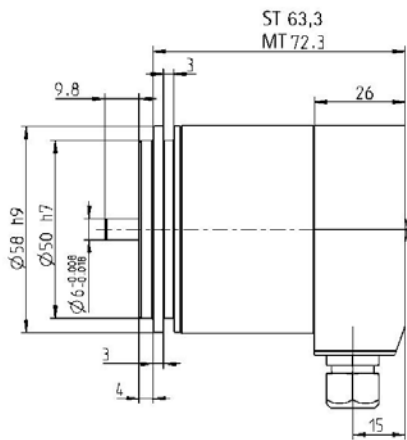
## Mechanical Specifications:

Shaft	6 mm (Synchronus flange)
	10 mm (Clamp flange)
	10 / 12 mm (Plug shaft)
Shaft load capacity	axial 20 N, radial 40 N (6 mm Shaft)
	axial 40 N, radial 60 N (10, 12 mm Shaft)
Operating speed	10 000 min <sup>-1</sup>
Operating torque	< 0,5 Ncm
Inertia moment of the rotor	Synchronus flange: 14 gcm <sup>2</sup>
	Clemp flange: 20 gcm <sup>2</sup>
	Plug shaft: 20 gcm <sup>2</sup>
Protection shaft	IP 64 oder IP 67
Protection enclosure	IP 67
Declaration of confirmiy	DIN EN 61010 protection class III
Operating temperature	- 40 ... 100 ° C
Storage temperature	- 40 ... 85 ° C
Vibration resistance DIN EN 60068-2-6	100 m/s <sup>2</sup> (10 ... 2000 Hz)
Thermal shock resistance DIN EN 60068-2-27	1000 m/s <sup>2</sup> (6 ms)
Connection	axial or radial
Enclosure	S = Synchronus flange, K= Clamp flange
	F = Plug- shaft
Start-torque	< 0,01 Nm
Wight	Singleturn ca. 260 g
	Multiturn ca. 310 g

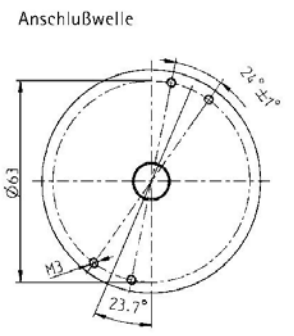
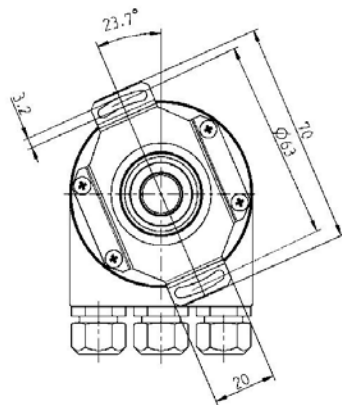
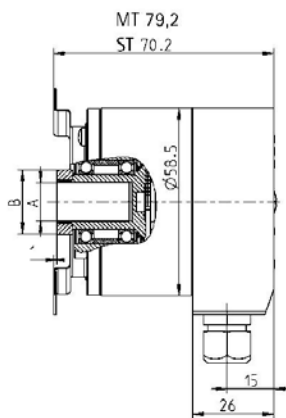
### Clamp flange („K“)



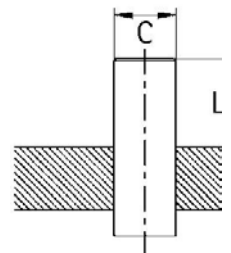
### Synchronus flange („S“)



### Plug-shaft („F“)



	Mass		Einheit
Hohlwellen- $\varnothing A$	10 <sup>+0.012</sup>	12 <sup>+0.012</sup>	mm
Anschlusswellen- $\varnothing C$	10 <sub>07</sub>	12 <sub>07</sub>	mm
Klemmring- $\varnothing B$	18	20	mm
L min.	15	18	mm
L max.	20	20	mm
Wellen-Code	"2"	"7"	



## BC 58 with parallel interface: Singleturn

Parallel interface with cable:				
color (PVC)	10 Bit	12 Bit	13 Bit	14 Bit
grey/pink	N.C.	N.C.	N.C.	S0 (LSB)
brown/yellow	N.C.	N.C.	S0 (LSB)	S1
brown/grey	N.C.	S0 (LSB)	S1	S2
red/blue	N.C.	S1	S2	S3
violet	S0 (LSB)	S2	S3	S4
white/brown	S1	S3	S4	S5
white/green	S2	S4	S5	S6
white/yellow	S3	S5	S6	S7
white/grey	S4	S6	S7	S8
white/pink	S5	S7	S8	S9
white/bleu	S6	S8	S9	S10
white/red	S7	S9	S10	S11
white/black	S8	S10	S11	S12
brown/green	S9 (MSB)	S11 (MSB) Tristate	S12 (MSB)	S13 (MSB)
yellow	Tristate S0...S9	S0... S11 Latsch	Tristate S0...S1	Tristate S0...S13
pink	Latsch (only binär)	Latsch (only binär)	Latsch (only binär)	Latsch (only binär)
green	Direction	Direction	Direction	Direction
Black	0 V	0 V	0 V	0 V
red	5V/10..30VDC	5 V/10..30VDC	5V/10..30VDC	5V/10..30VDC
brown	Alarm	Alarm	Alarm	Alarm

Parallel interface with connector, 17 pins				
Pin	10 Bit	12 Bit	13 Bit	14 Bit
1	S0 (LSB)	S0	S12 (MSB)	S13 (MSB)
2	S1	S1	S11	S12
3	S2	S2	S10	S11
4	S3	S3	S9	S10
5	S4	S4	S8	S9
6	S5	S5	S7	S8
7	S6	S6	S6	S7
8	S7	S7	S5	S6
9	S8	S8	S4	S5
10	S9 (MSB)	S9	S3	S4
11	N.C.	S10	S2	S3
12	Tristate S0..S9	S11 (MSB) Latsch	S1	S2
13	Latsch (only binär)	Latsch (only binär)	S0 (LSB)	S1
14	Direction	Direction	Direction	S0 (LSB)
15	0 V	0 V	0 V	0 V
16	5V/10..30VDC	5 V/10..30VDC	5V/10..30VDC	5V/10..30VDC)
17	Alarm	Alarm	Alarm	Alarm

## BC 58 with parallel interface: Multiturn

Cabel (PVC) Color	Cabel(PVC) Configuration	Cabel (PVC) Color	Cabel (PVC) Configuration	Cable (PVC) Color	Color(PVC) Configuration
brown	S 0	yellow/brown	S 11	grey/green	M 10 (2)
green	S 1	wite/grey	M 0	Yellow/grey	M 11 (2)
yellow	S 2	grey/brown	M 1	pink/green	<u>Alarm</u>
grey	S 3	white/pink	M 2	yello/pink	<u>Direction</u>
pink	S 4	yello/brown	M 3	green/blue	Latsch
Violet	S 5	white/blue	M 4 (1)	yellow/blue	Tristate
grey/pink	S 6	brown/blue	M 5 (1)	red (0,5 mm <sup>2</sup> )	10..30 V DC
red/bleu	S 7	white/red	M 6 (1)	white (0,5mm <sup>2</sup> )	10..30 V DC
white/green	S 8	brown/red	M 7 (1)	blue (0,5 mm <sup>2</sup> )	0 V
brown/green	S 9	white/black	M 8 (2)	black (05 mm <sup>2</sup> )	0 V
white/yellow	S 10	brown/black	M 9 (2)		

- 1) N.C. about 16 Bit
- 2) N.C. about 16 or 20 Bit

Electrical Specification	
Power supply	10-30 V
Max. current consumption ST / MT	200 mA /300 mA
Interface	Parallel
Output Code	Binär, Gray, Gray-Excess
Resolution Singleturn	10-14 Bit , 12 Bit at MT Variante
	Gray Excess: 360, 720 Steps
Resolution Multiturn	12 Bit
Linearity	+/- ½ LSB
Permissible load/ per Bit	30 mA, Short circuit proof outputs
Programmable funktions	<u>Latsch</u> , <u>Direction</u> , <u>Tristate</u> by ST ; Tristate by MT
Connection	Cable or Connector 17 pins. axial oder radial, Sub D-37 pins

## Order No:

**BC 58 / 1212 E K.42 PB B**

Resolution	Supply voltage	Flange	Protection	Shaft	Interface	Connection
<b>0010</b> 10 Bit ST	E= 10-30 V	<b>S.41</b> Sychro	IP 64	6 mm	<b>PB</b> = Parallel	<b>A</b> = Cable axial
<b>0012</b> 12 Bit ST		<b>S.71</b> Sychro	IP 67	6 mm	Binär	<b>B</b> = Cable radial
<b>0013</b> 13 Bit ST		<b>K.42</b> Clamp	IP 64	10 mm	<b>PG</b> = Parallel	<b>W</b> = Connector 17 pins. axial
<b>0014</b> 14 Bit ST		<b>K.72</b> Clamp	IP 67	10 mm	Gray	<b>Y</b> = Connector 17pinsl. radial
<b>0360</b> 360 ST		<b>F.42</b> Plug-shaft	IP 64	10 mm H-shaft		<b>A-A1-F</b> = 0,1 m Cable /axial
<b>0720</b> 720 St		<b>F.47</b> Plug-shaft	IP 64	12 mm H-shaft		+ 37 pins connector
<b>1212</b> 12 MT+12 S					<b>B-A1-F</b> = 0,1 m Cable/ radial	
						+ 37 pins connector

---

## BC 58 with SSI Interface

### Synchronous-serial transfer (SSI):

Synchronous readout of the encoder data is according to the clock rate given by the SSI-counterpart. The number of clock rates is determined by the type of encoder and the configuration of the special bits as defined.

For multiple transactions (the stored value is readout several times successively) a fixed clock rate per transaction must be kept (for singleturn 13 resp. 14 clocks, for multiturn 25 resp. 26 clocks). In the rest position, when the last clock brush has passed by more than 30 µm, the data outputs is logically at "1".

With the first descending clock edge the encoder data and the special bits are loaded in the shift register of the encoder interface. With each ascending clock edge the data bits are serially readout, beginning with the MSB. At the end of the data transfer the data output is set to logically "0" for approx 20 µs.

### Recommended data transmission rate for SSI:

The maximum data transmission rate depends on the cable length.

Cable length	Baud rate
< 50 m	< 400 KHz
< 100 m	< 300 KHz
< 200 m	< 200 KHz
< 400 m	< 100 KHz

### Pin Configuration SSI Interface:

Cable	Connector	Signal
brown (0,5mm <sup>2</sup> )	1	0 V (Supply voltage)
pink	2	Data
yellow	3	Takt
		N.C.
blue	5	Direction
	6	N.C.
	7	N.C.
white (0,5 mm <sup>2</sup> )	8	10 ... 30 V DC
	9	N.C.
		Data
green	11	Takt
	12	0 V- Signal Output

## BC 58 with SSI Interface

Electrical Specification	
Power supply	5V or 10-30 V
Max. current consumption ST / MT	50 mA / 100 mA
Interface	SSI
Output Code	Binär or Gray
Resolution Singleturn	10-17 Bit , max. 13 Bit in MT Variante
	Gray Excess: 360, 720 Steps
Absolut Linearity	+/- 35 ''
Revers Linearity	+/- 7 ''
Status LED	Green = ok; Red = Alarm
Steuereingänge	Direction
Programmable funktions	Resolution, Cods, Direction, Warning, Alarm
Resettaste	stop per Parametrierung
Connection	Cable or Connector axial or radial

### Order No:

**BC 58 / 1212 E K.42 SB B**

<b>Resolution</b>	<b>Supply voltage</b>	<b>Flange</b>	<b>Protection</b>	<b>Shaft</b>	<b>Interface</b>	<b>Connection</b>
<b>0010</b> 10 Bit ST	<b>A</b> = 5 V <b>E</b> = 10-30 V	<b>S.41</b> Sychro	IP 64	6 mm	<b>SB</b> = SSI	<b>A</b> = Cable axial
<b>0012</b> 12 Bit ST		<b>S.71</b> Sychro	IP 67	6 mm	Binär	<b>B</b> = Cable radial
<b>0013</b> 13 Bit ST		<b>K.42</b> Clamp	IP 64	10 mm	<b>SG</b> = SSI	<b>C</b> = Connector 12 pins axial
<b>0014</b> 14 Bit ST		<b>K.72</b> Clamp	IP 67	10 mm	Gray	<b>D</b> = Connector 12 pins radial
<b>0017</b> 17 Bit ST		<b>F.42</b> Plug-shaft	IP 64	10 mm H-Shaft		
<b>1212</b> 12 MT+ 12 S		<b>F.47</b> Plug-shaft	IP 64	12 mm H-Shaft		
<b>1213</b> 12 MT+13 S						

## BC 58 with Profibus DP Interface

Electrical Specifications	
Supply Voltage	11- 30 V DC
Max. current consumption ST / MT	220mA / 250 mA
Interface	Profibus- DP , Encoder Profil
Certifiziert	PNO
Programmable funktions	Class 2 : Resolution, Preset, Direction
Output Code	Binär
Baud rat	9,6 K Baud- 12 M Baud
Resolution Singleturn	10 – 14 Bit
Resolution Mutltiurn	12 Bit
Integratet Funktion	Speed, Turn-speed, worktime
Connection	Enclosure with 2 x connector, Encolure with 3 x PG
Mechanical Spezifikationen	
Permissible temp. range	- 40 ° C bis + 85 ° C
Weight ca, ST/ MT	350 g / 400 g

Preset only for the bus, no switsches

### Order No:

**BC 58 / 1212 E K.42 DP Z**

<b>Resolution</b>	<b>Supply voltage</b>	<b>Flange</b>	<b>Protection</b>	<b>Shaft</b>	<b>Interface</b>	<b>Connection</b>
0010 10 Bit ST	E = 10-30 V	S.41 Sychro	IP 64	6 mm	DP =Profibus DP	I = 2 x 12 pins Connector
0012 12 Bit ST		S.71 Sychro	IP 67	6 mm		
0013 13 Bit ST		K.42 Clamp	IP 64	10 mm		
0014 14 Bit ST		K.72 Clamp	IP 67	10 mm		
1212 12 MT+ 12 S		F.42 Plug-shaft	IP 64	10 mm H-shaft.	Z = 3 x PG Bus Terminal	
1213 12 MT+ 13 S		F.47 Plug-shaft	IP 64	12 mm H-shaft.		
1214 12 MT + 14 S						

## BC58 with Interbus Interface

<b>Electrical Specifications</b>	
Supply voltage	11- 30 V DC
Max. current consumption ST / MT	220mA / 250 mA
Interface	Interbus, ENCOM Profil K 3 (programable), K 2
DÜ format	Sypi Adresse 0123, Byte Nr. 3210
Programmable funktions	Direction, Skalierungsfaktor, Preset, Offset
Output Code	32 Bit Binär
Baud rate	500 Kbaud ENCOM
Resolution Singleturn	10 – 17 Bit , 12 Bit MT Variante
Resolution Mutltiurn	12 Bit
ID.Code K 3	37H (055 dezimal)
Connection	Enclosure with 2 x connector, Encolure with 3 x PG
<b>Mechanical Specifications</b>	
Permissible temp. range	- 40 ° C bis + 85 ° C
Weight ca, ST/ MT	350 g / 400 g

### Order No:

**BC 58 / 1212 E K.42 I3 I**

<b>Resolution</b>	<b>Supply voltage</b>	<b>Flange</b>	<b>Protection</b>	<b>Shaft</b>	<b>Interface</b>	<b>Connection</b>
0010 10 Bit ST	E = 10-30 V	S.41 Sychro	IP 64	6 mm	I2 Interbus K2	I = 2 x 12 pins Connector
0012 12 Bit ST		S.71 Sychro	IP 67	6 mm	I3 Interbus K 3	Z = 3 x PG Bus Terminal
0013 13 Bit ST		K.42 Clamp	IP 64	10 mm		
0014 14 Bit ST		K.72 Clamp	IP 67	10 mm		
1212 12 MT+ 12 S		F.42 Plug-shaft	IP 64	10 mm H-shaft		
		F.47 Plug-shaft	IP 64	12 mm H-shaft		

## BC58 with DeviceNet Interface

<b>Electrical Specifications</b>	
Supply voltage	11- 30 V DC
Max. current consumption ST/ MT	220mA / 250 mA
Schnittstelle	CAN-Highspeed ISO/DIS 11898, CAN- Spezifikation 2.0 B
Profil	Customer spezial. Profil, Encoder profil - DeviceNet
Programmable funktions	Class 2; Resolution, Preset, Direction
Output Code	Binär
Baud rate	125,250,500 KBAud
Resolution Singleturn	10 – 14 Bit , 12 Bit MT Variante
Resolution Mutltiurn	12 Bit
Transfermodus	Pollmodus, Change of State. Zyklisch with programable Zyklustimer
Connection	Enclosure with 2 x connector, Encolure with 3 x PG
<b>Mechanical Spezifications</b>	
Permissible temp. range	- 40 ° C bis + 85 ° C
Weight ca, ST/ MT	350 g / 400 g

### Order No:

**BC 58 / 1212 E K.42 VD Z**

Resolution	Supply voltage	Flange	Protection	Shaft	Interface	Connection
<b>0010</b> 10 Bit ST	E = 10-30 V	<b>S.41</b> Sychro	IP 64	6 mm	VD =DiviceNet	I = 2 x 12 pins Connector Z = 3 x PG Bus Terminal
<b>0012</b> 12 Bit ST		<b>S.71</b> Sychro	IP 67	6 mm		
<b>0013</b> 13 Bit ST		<b>K.42</b> Clamp	IP 64	10 mm		
<b>0014</b> 14 Bit ST		<b>K.72</b> Clamp	IP 67	10 mm		
<b>1212</b> 12 MT+ 12 S		<b>F.42</b> Plug-shaft	IP 64	10 mm H-shaft.		
<b>1213</b> 12 MT+ 12 S		<b>F.47</b> Plug-shaft	IP 64	12 mm H-shaft		
<b>1214</b> 12 MT + 12 S						

## BC58 with CANopen / CAN Layer 2 Interface

<b>Electrical Spezifications</b>	
Supply voltage	11- 30 V DC
Max. current consumption ST/ MT	220mA / 250 mA
Schnittstelle	CAN-Highspeed ISO/DIS 11898, Basic- and Full-CAN CAN- Spezifikation 2.0 B (11 and 29 Bit Identifier)
Profil	CANopen Profil DSP 406, with programable Funktion
Programmable funktions	CANopen: Direction, Resolution, Preset, Offset, Maximale: CAN L2: Direction, Maximale, Binär
Output Code	Binär
Baud rate	programmable 10 - 1.000 KBAud
Basisidentifizier	DIP Switches
Integratet funktionen	speed, Turn-speed, Maximale only CANopen
Resolution Singleturn	10 – 14 Bit , 12 Bit MT Variante
Resolution Mutltiurn	12 Bit
Transfermodus	Pollmodus, Change of State Zyklisch with programmable Zyklustimer
Connection	Enclosure with 2 x connector, Encolure with 3 x PG
<b>Mechanical Spezifications</b>	
Permissible temp. range	- 40 ° C bis + 85 ° C
Weight ca, ST/ MT	350 g / 400 g

### Order No:

**BC 58 / 1212 E K.42 OL Z**

<b>Resolution</b>	<b>Supply voltage</b>	<b>Flange</b>	<b>Protection</b>	<b>Shaft</b>	<b>Interface</b>	<b>Anschluss</b>
<b>0010</b> 10 Bit ST	E = 10-30 V	<b>S.41</b> Sychro	IP 64	6 mm	<b>OL</b> = CANopen	<b>D</b> = 1 x 12 pins Connector
<b>0012</b> 12 Bit ST		<b>S.71</b> Sychro	IP 67	6 mm	<b>CL</b> = CAN L2	<b>I</b> = 2 x 12 pins Connector
<b>0013</b> 13 Bit ST		<b>K.42</b> Clamp	IP 64	10 mm		<b>Z</b> = 3 x PG Bus Terminal
<b>0014</b> 14 Bit ST		<b>K.72</b> Clamp	IP 67	10 mm		
<b>1212</b> 12 MT+ 12 S		<b>F.42</b> Plug-shaft	IP 64	10 mm H-shaft.		
<b>1213</b> 12 MT+ 12 S		<b>F.47</b> Plug-shaft	IP 64	12 mm H-shaft		
<b>1214</b> 12 MT + 12 S						