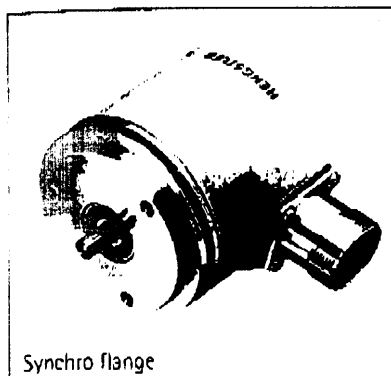


723 4491

Incremental Shaft Encoders – Industrial types

Type RI 58



Synchro flange



Clamping flange

- Universal industry standard encoder
- Up to 40,000 steps with 10,000 pulses
- High signal accuracy
- Protection class up to IP 67
- Operating temperature up to 100 °C (RI 58-T)
- Flexible due to many flange and configuration variants

- Suitable for high shock ratings
- Application e.g.: Machine tools, CNC axes, packing machines, motors/drives, injection moulding machines, sawing machines, textile machines
- For EX version, see RX 70-I

Number of pulses

RI 58-O

Other numbers of pulses available on request

1 / 2 / 3 / 4 / 5 / 10 / 15 / 20 / 25 / 29 / 30 / 35 / 40 / 50 / 60 / 64 / 70 / 72 / 80 / 100 / 117 / 120 / 125 / 127 / 128 / 136 / 144 / 150 / 180 / 200 / 226 / 230 / 250 / 256 / 280 / 300 / 314 / 350 / 356 / 360 / 375 / 400 / 460 / 480 / 500 / 512 / 600 / 625 / 635 / 720 / 750 / 889 / 900 / 942 / 1,000 / 1,024 / 1,125 / 1,200 / 1,250 / 1,270 / 1,500 / 1,600 / 1,800 / 1,885 / 1,979 / 2,000 / 2,048 / 2,400 / 2,500 / 3,000 / 3,400 / 3,480 / 3,600 / 3,750 / 3,925 / 3,958 / 3,968 / 4,000 / 4,096 / 4,445 / 4,800 / 5,000 / 5,400 / 6,000 / 6,875 / 7,200 / 7,680 / 7,854 / 8,000 / 8,192 / 9,000 / 10,000
other numbers of pulses available on request.

RI 58-T

(high temperature): as above, but only for the range from 4 ... 2,500 pulses
other numbers of pulses available on request.

Technical data

mechanical

Shaft diameter	6 mm/6.35 mm/7 mm/12 mm/10 mm/9.52 mm
Absolute max. shaft load	Ø 12 mm 180/140 N (39/30 lbs)
radial / axial	Ø 7...10 mm 160/107 N (35/24 lbs)
	Ø 6 mm/6.35 mm 110/60 N (24/13 lbs)
Absolute maximum speed	10,000 RPM
Torque	≤ 0.5 Ncm (IP 65), ≤ 1 Ncm (IP 67)
Moment of inertia	synchro flange 14 gcm ² approx. clamping flange 20 gcm ² approx.
Protection class (EN 60529)	Housing IP 50, bearings IP 40 Housing IP 65, bearings IP 64 Housing IP 67, bearings IP 67
Operating temperature	RI 58-O: -10 ... +70 °C; RI 58-T: -25 ... +100 °C
Storage temperature	RI 58-O: -25 ... +85 °C; RI 58-T: -25 ... +100 °C
Vibration proof (IEC 68-2-6)	100 m/s ² (10 ... 2000 Hz)
Shock resistance (IEC 68-2-27)	1,000 m/s ² (6 ms)
Type of connection	1.5 m cable** or connector, axial or radial
Housing	aluminium Ø 58 mm
Flange	S = synchro flange, K = clamping flange, G, Q = square flange, M = synchro clamping flange
Weight	360 g approx.
Bearing life	1 x 10 ⁹ revolutions (typ.) at 35 % of full rated shaft load 1 x 10 ⁸ revolutions (typ.) at 75 % of full rated shaft load 1 x 10 ⁶ revolutions (typ.) at 100 % of full rated shaft load for example 30,000 h at 6,000 RPM with a 13 lb radial load (10 mm or 9.52 mm shaft)

** Other cable lengths on request

Type RI 58

Technical data electrical

General design	as per DIN VDE 0160, protection class III, contamination level 2, overvoltage class II		
Supply voltage (SELV)	with RS 422 + Sense (T): 5 VDC ± 10 % with RS 422 + Alarm (R): 5 VDC ± 10 % oder 10 ... 30 VDC ¹⁾ with push-pull (K, I): 10 ... 30 VDC ¹⁾		
Power consumption	40 mA (5 VDC), 60 mA (10 VDC), 30 mA (24 VDC)		
Standard-Output versions ²⁾	RS 422 (R):	A, B, N, $\bar{A}$, $\bar{B}$, $\bar{N}$, Alarm	
	RS 422 (T):	A, B, N, $\bar{A}$, $\bar{B}$, $\bar{N}$, Sense	
	push-pull (K):	A, B, N, Alarm	
	push-pull complementary (I):	A, B, N, $\bar{A}$, $\bar{B}$, $\bar{N}$, Alarm	

1) Pole protection with supply voltage 10...30 VDC

2) Output description and technical data see section „output“

Connection diagram cable PVC

cable PVC (A, B)	Output RS 422 (R, T)	push-pull (K)	push-pull complementary (I)
Colour			
red	5/10...30 VDC=	10...30 VDC=	10...30 VDC=
yellow/red	Sense V _{CC}		Sense V _{CC}
white	Channel A	Channel A	Channel A
white/brown	Channel $\bar{A}$		Channel $\bar{A}$
green	Channel B	Channel B	Channel B
green/brown	Channel $\bar{B}$		Channel $\bar{B}$
yellow	Channel N	Channel N	Channel N
yellow/brown	Channel $\bar{N}$		Channel $\bar{N}$
black	GND	GND	GND
yellow/black	Alarm/Sense GND ¹⁾	Alarm	Alarm
Screen ²⁾	Screen ²⁾	Screen ²⁾	Screen ²⁾

1) depending on ordering code

2) connected to housing

Connection diagram cable TPE

cable TPE (E, F)	Output RS 422 (R, T)	push-pull (K)	push-pull complementary (I)
Colour			
brown/green	5/10...30 VDC=	10...30 VDC=	10...30 VDC=
blue	Sense V _{CC}		Sense V _{CC}
brown	Channel A	Channel A	Channel A
green	Channel $\bar{A}$		Channel $\bar{A}$
grey	Channel B	Channel B	Channel B
pink	Channel $\bar{B}$		Channel $\bar{B}$
red	Channel N	Channel N	Channel N
black	Channel $\bar{N}$		Channel $\bar{N}$
white/green	GND	GND	GND
violet (white) ¹⁾	Alarm/Sense GND ²⁾	Alarm	Alarm
Screen ³⁾	Screen ³⁾	Screen ³⁾	Screen ³⁾

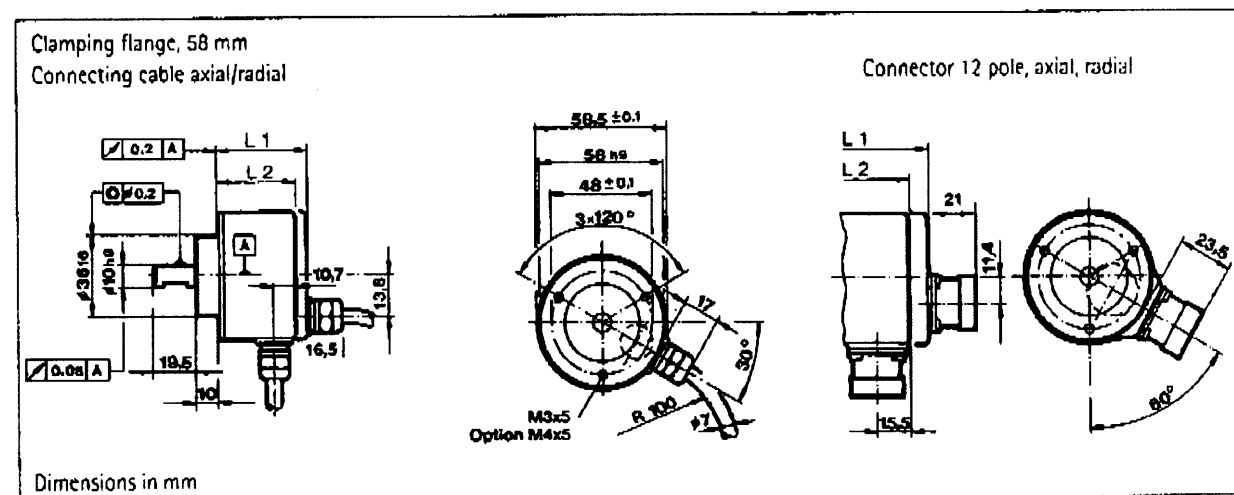
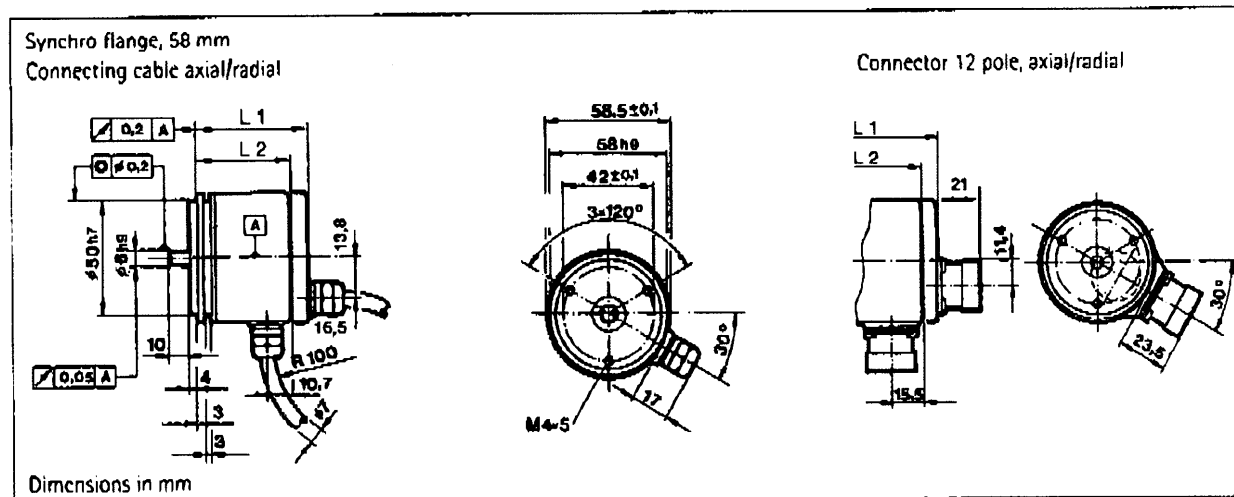
1) white for RS 422 + Sense (I)

2) depending on ordering code

3) connected to housing

Type RI 58

Dimensioned drawing



Type	Connection	Output*	axial L ₁	radial L ₂
Synchro flange, 58 mm	cable	R (with U _a = 5 V), T, K, I	51.5	41.5
		R (with U _a = 10...30 V)	56	56
	connector	R (with U _a = 5 V), T, K, I	57.5	51.5
		R (with U _a = 10...30 V)	57.5	56
Clamping flange, 58 mm	cable	R (with U _a = 5 V), T, K, I	45.5	35.5
		R (with U _a = 10...30 V)	50	50
	connector	R (with U _a = 5 V), T, K, I	51.5	45.5
		R (with U _a = 10...30 V)	51.5	50

* R = RS 422 + Alarm, T = RS 422 + Sense, K = push-pull, I = push-pull complementary

Absolute Shaft Encoders

Synchro clamping flange, 63.5 mm



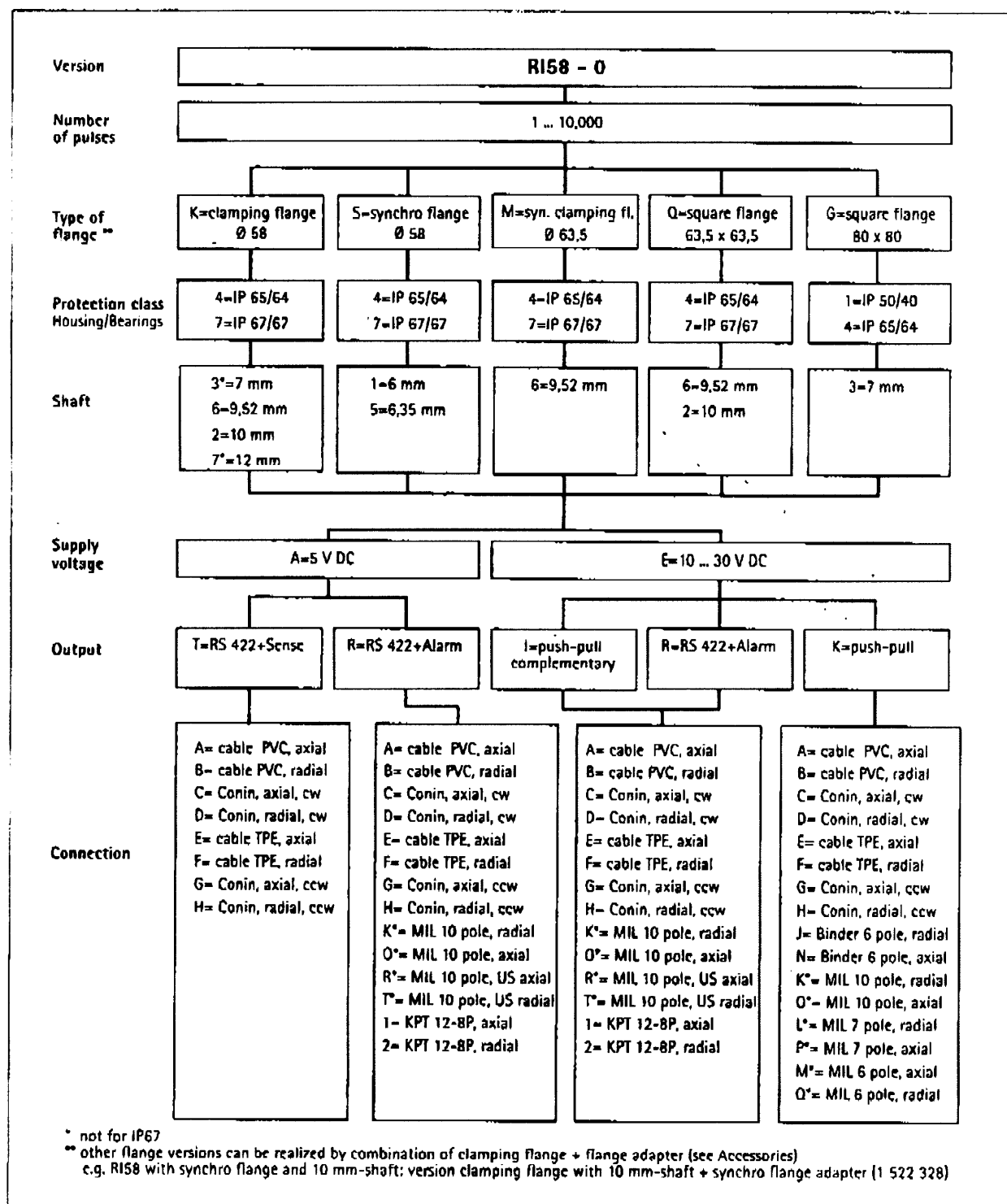
Square flange 63.5 x 63.5 mm

Square flange, 80 x 80 mm

Type RI 58

Standard versions

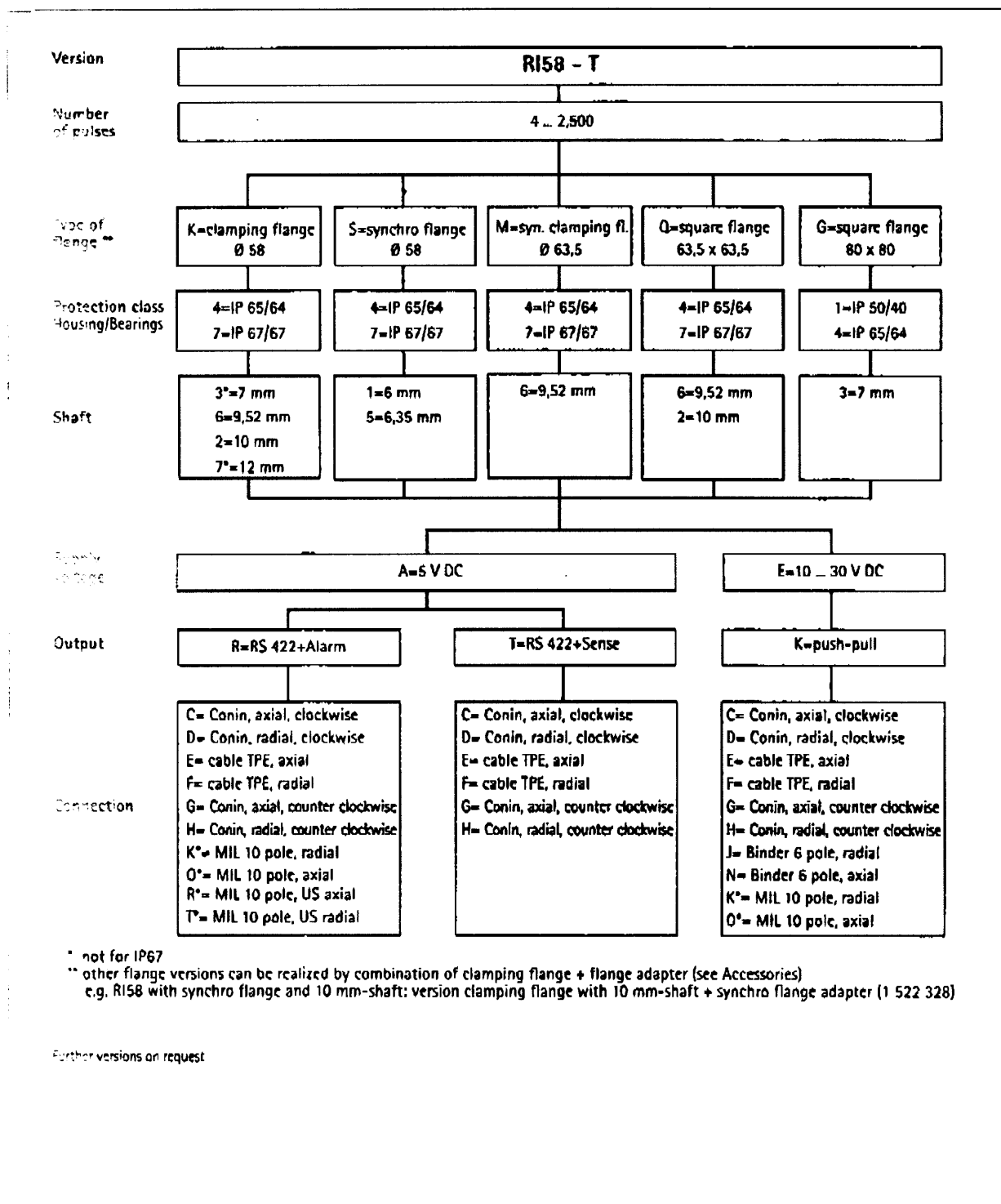
Selection for guide RI 58-0



Type RI 58

Standard versions

Reference: see guide RI 58-T



Absolute Shaft Encoders

Hengstler Accessories

Further products from
the Hengstler range

Hengstler

Type RI 58

Ordering data

Please check „selection guide “on previous pages as not all combinations are possible!

O standard	Supply voltage	Type of flange	Shaft diameter
T high temperature	A 5 VDC	S synchro flange	1 6 mm
	E 10 ... 30 VDC	K clamping flange	2 10 mm
		G square flange 80 x 80	3 7 mm
		Q square flange 63.5 x 63.5	5 6.35 mm
		M synchro clamping flange	6 9.52 mm
			7 12 mm

R 5 8 -	/							
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Number of pulses	Protection	Output
RI58-O: 1 ... 10,000	class	T RS 422 + Sense
RI58-T: 4 ... 2,500	1 IP 40	K push-pull, short circuit proof
	4 IP 64	I push-pull complementary
	7 IP 67	R RS 422 + Alarm

Type of connection	O MIL MS*, 10 pole, axial ¹⁾
A PVC-cable axial ¹⁾	K MIL MS*, 10 pole, radial ¹⁾
B PVC-cable radial	L MIL* 7 pole, radial
C CONIN*, axial clockwise	P MIL 7 pole, axial
D CONIN*, radial clockwise	M MIL 6 pole, axial
E TPE-cable axial	Q MIL 6 pole, radial
F TPE-cable radial	R MIL 10 pole, U.S. axial ²⁾
G CONIN*, axial counter clockwise	T MIL 10 pole, U.S. radial ²⁾
H CONIN*, radial counter clockwise	1 KPT 12-8 P, axial
J BINDER* 6 pole, radial	2 KPT 12-8 P, radial
N BINDER* 6 pole, axial	

* encoder connector with pins
1) European pinout 2) U.S. pinout

Accessories

Clamping eccentric
(set of three)
Ordering code 0 070 655

Diaphragm coupling
hole 6/6 mm

Ordering code 1 076 013

hole 10/10 mm

Ordering code 1 076 014

Cable plug connector
for connector (CONIN), clockwise
(type of connection C, D)

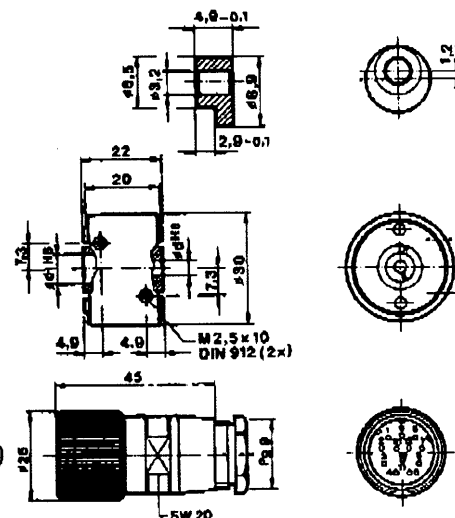
Ordering code 3 539 202

for connector (CONIN), counter
clockwise (type of connection G, H)

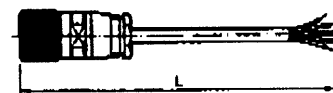
Ordering code 3 539 229

Mounting spanner
for CONIN connectors

Ordering code 3 539 343



Extension cables
(TPE)



12-pin plug (socket) on one end

clockwise (C, D)

counter clockwise (G, H)

Ordering code

Ordering code $L = 3 \text{ m}$

1 522 348

1 522 394

$$L = 5 \text{ m}$$

1 522 349

1 522 395

 $L = 10 \text{ m}$

1 522 350

1 522 396

TPE-cable (not made up with connectors)

3 280 112 + state required length

For more detailed specifications and other accessories see "Accessories"