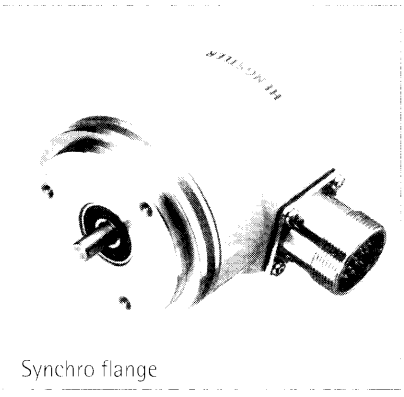
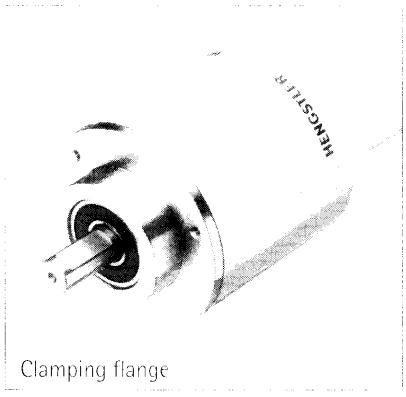
Incremental Shaft Encoders with OPTOASIC

Type RI 58



Synchro flange



Clamping flange

- To 40,000 steps by 10,000 pulses
- Short circuit proof and overload protected
- Max. pulse frequency 300 kHz
- RS 422
- Push-pull complementary
- Encoder self tests/ Alarm output
- EMC class IV as per IEC 801
- Synchro-, square- or clamping flange
- Protection class up to IP 67
- Option: Explosion proof version

Number of pulses

RI 58-O

1 / 2 / 3 / 5 / 10 / 20 / 25 / 29 / 30 / 35 / 50 / 60 / 70 / 80 / 100 / 120 / 125 / 128 / 150 / 180 / 200 / 226 / 250 / 256 / 280 / 300 / 314 / 360 / 375 / 400 / 460 / 480 / 500 / 512 / 600 / 625 / 635 / 720 / 750 / 889 / 900 / 1,000 / 1,024 / 1,125 / 1,250 / 1,270 / 1,500 / 1,600 / 1,800 / 1,885 / 1,979 / 2,000 / 2,048 / 2,500 / 3,000 / 3,600 / 3,925 / 3,958 / 4,000 / 4,096 / 5,000 / 5,400 / 6,000 / 6,875 / 7,854 / 8,192 / 9,000 / 10,000
Other numbers of pulses available on request

RI 58-T

as above, but only for the range from 5 to 2,500 pulses
Other numbers of pulses available on request

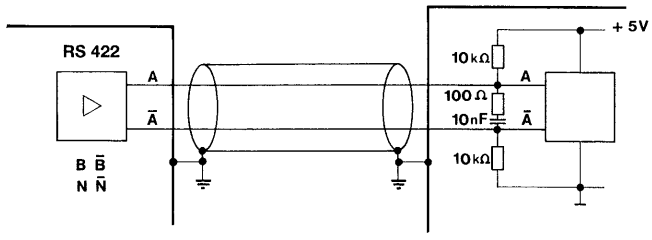
Technical data

mechanical

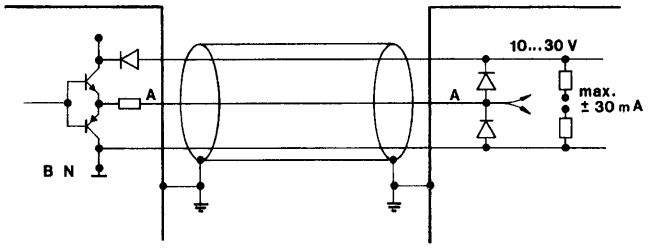
Shaft diameter	6 mm/6.35 mm ($^1/_4$ inch)/7 mm /12 mm/10 mm/9.52 mm ($^3/_8$ inch)	
Absolute max. shaft load radial/axial	∅ 12 mm	180/140 N (39/30 lbs)
	∅ 7...10 mm	160/107 N (35/24 lbs)
	∅ 6 mm/6.35 mm	110/60 N (24/13 lbs)
Absolute maximum speed	10,000 RPM	
Torque	≤ 1 Ncm (IP 65)	
Moment of inertia	synchro flange 14 gcm² approx.	
	clamping flange 20 gcm² approx.	
Protection class (DIN 40050)	IP 50, IP 65, IP 67*	
General design	as per DIN VDE 0160	
Operating temperature	RI 58-O: -10 ... +70 °C; RI 58-T: -10 ... + 100°C	
Storage temperature	RI 58-O: -25 ... +85°C; RI 58-T: -25 ... +100°C	
Vibration performance (IEC 68-2-6)	100 m/s² (10 ... 2,000 Hz)	
Shock resistance (IEC 68-2-27)	1,000 m/s² (3 ms)	
Type of connection, axial or radial	1.5 m cable** or connector	
Housing	aluminium ∅ 58 mm	
Flange	S = synchro flange, K = clamping flange, G, Q = square flange, M = synchro clamping flange	
Weight	360 g approx.	
Bearing life	1×10^{10} revolutions (typ.) at 35 % of full rated shaft load	
	1×10^{9} revolutions (typ.) at 75 % of full rated shaft load	
	1×10^{8} 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 specifications possible on request **other lengths of cable available on request

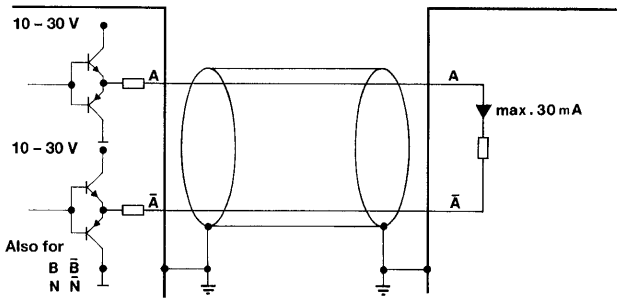
Output circuit



R or T = RS 422



K = push-pull (short circuit proof and overload proof)



I = push-pull complementary (short circuit proof and overload proof)

Code letter	R, T	K	I
Output	RS 422	push-pull	push-pull complementary
		10 ... 30 V	10 ... 30 V
H	≥ 2.5 V	≥ U_B -3 V	≥ U_B -3 V
L	≤ 0.5 V	≤ 2 V	≤ 2 V
Output load max.	±20 mA	±30 mA	±30 mA
Alarm output	O.C. NPN 10 mA	O.C. NPN 10 mA	O.C. NPN 10 mA

Cable lengths* (depending on voltage and frequency) (at 25 °C)

	RS 422	Push-pull	Push-pull complementary
10 m	5 VDC, 300 kHz	12 VDC, 200 kHz	12 VDC, 200 kHz
		24 VDC, 200 kHz	24 VDC, 200 kHz
		30 VDC, 200 kHz	30 VDC, 200 kHz
50 m	5 VDC, 300 kHz	12 VDC, 200 kHz	12 VDC, 200 kHz
		24 VDC, 200 kHz	24 VDC, 50 kHz
		30 VDC, 100 kHz	30 VDC, 25 kHz
100 m	5 VDC, 300 kHz	12 VDC, 200 kHz	12 VDC, 150 kHz
		24 VDC, 100 kHz	24 VDC, 25 kHz
		30 VDC, 50 kHz	30 VDC, 12 kHz

* with respect to Hengstler' own cables

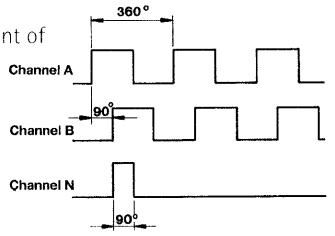
Type RI 58

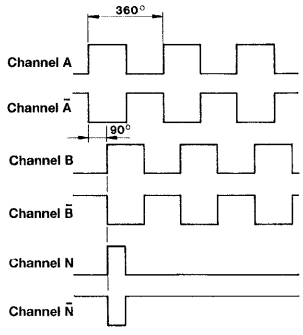
Technical data

electrical

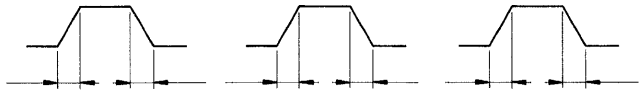
Output[1]	RS 422 (TTL)	Push-pull[2]	Push-pull complementary[2]
Supply voltage	5 VDC/10 ... 30 VDC	10 ... 30 VDC	10 ... 30 VDC
Power consumption	40 mA (5 VDC)	30 mA (24 VDC)	30 mA (24 VDC)
		60 mA (10 VDC)	60 mA (10 VDC)
Max. pulse frequency	300 kHz	200 kHz	200 kHz
Output signals	Push-pull		RS 422 + push-pull complementary

shaft turning clockwise seen from front of encoder





Delay times at 1.5 m cable



	≤ 100 ns ≤ 100 ns	≤ 250 ns ≤ 250 ns	≤ 250 ns ≤ 250 ns
Pulse shape	⎍	⎍	⎍
Pulse duty factor	1 : 1	1 : 1	1 : 1
Pulse width error[3]	± 25° electrical	± 25° electrical	± 25° electrical

[1] RI 58-T only with RS 422, 5 VDC

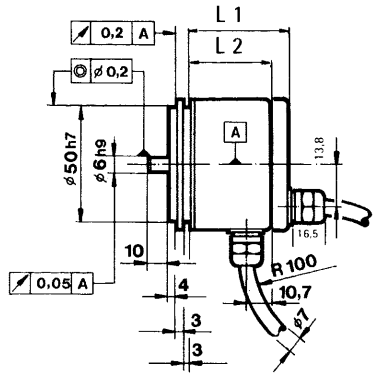
[2] short circuit and overload proof over the whole temperature range.

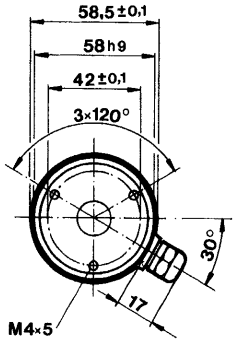
[3] distance from A to B is at least 0.45 µs

Type RI 58

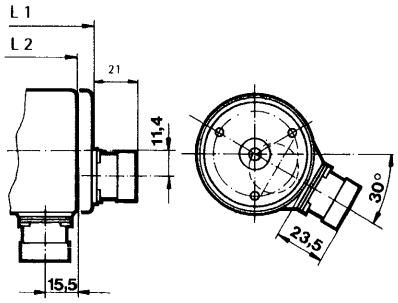
Dimensioned drawing

Synchro flange, 58 mm
Connecting cable axial/radial



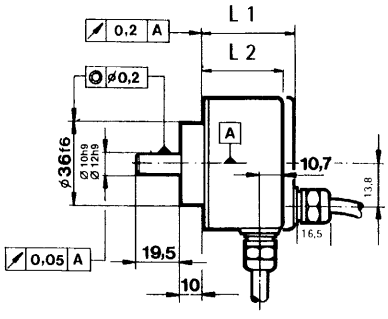


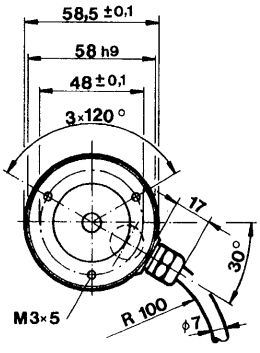
Connector 12 pole, axial/radial



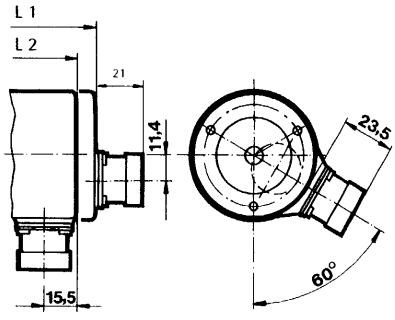
Dimensions in mm

Clamping flange, 58 mm
Connecting cable axial/radial





Connector 12 pole, axial/radial

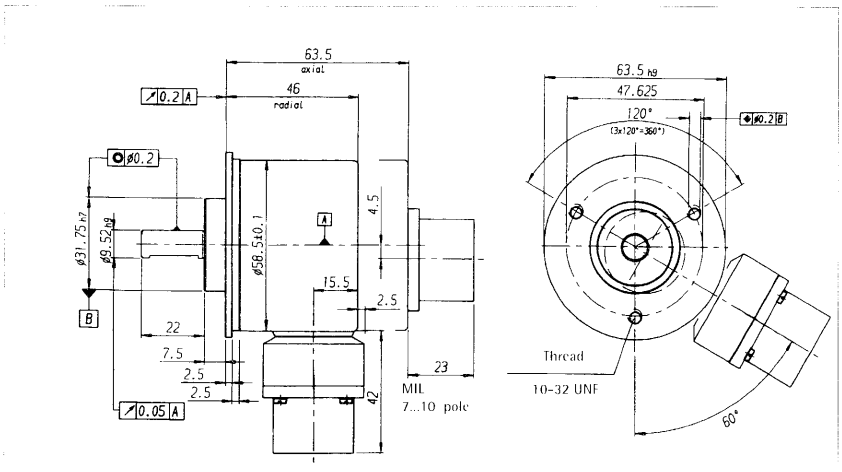


Dimensions in mm

Type	Connection	Output	axial L_1	radial L_1
Synchro flange, 58 mm	cable	RS 422 (5 V), push-pull	51.5	41.5
		RS 422 (10 ... 30 V)	56	56
	connector	RS 422 (5 V), push-pull	57.5	51.5
		RS 422 (10 ... 30 V)	57.5	56
Clamping flange, 58 mm	cable	RS 422 (5 V), push-pull	45.5	35.5
		RS 422 (10 ... 30 V)	50	50
	connector	RS 422 (5 V), push-pull	51.5	45.5
		RS 422 (10 ... 30 V)	51.5	50

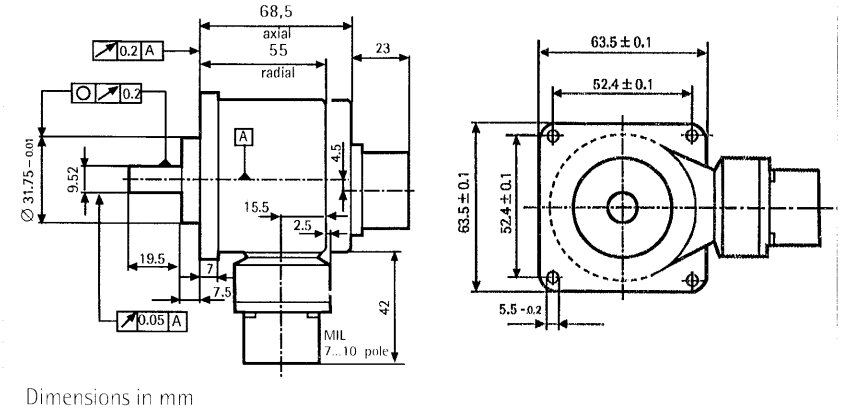
Dimensioned drawing

Synchro clamping flange, 63.5 mm



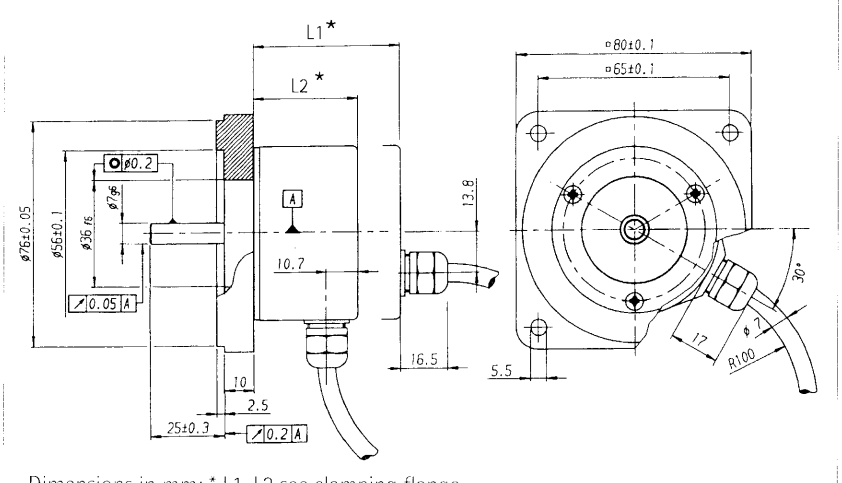
Dimensions in mm

Square flange, 63.5 x 63.5 mm



Dimensions in mm

Square flange, 80 x 80 mm



Dimensions in mm; * L1, L2 see clamping flange

Type RI 58

Connection diagram Cable

PVC-cable (A, B) Colour	TPE-cable (E, F) Colour	Output circuit RS 422 (R, T)	Push-pull (K)	Push-pull compl. (I)
red	brown/green	5/10...30 VDC=	10...30 VDC=	10...30 VDC=
yellow/red	blue	Sense V_{CC}	$\overline{\text{Alarm}}$[4]	Sense V_{CC}
white	brown	Channel A	Channel A	Channel A
white/brown	green	Channel $\overline{A}$		Channel $\overline{A}$
green	grau	Channel B	Channel B	Channel B
green/brown	pink	Channel $\overline{B}$		Channel $\overline{B}$
yellow	red	Channel N	Channel N	Channel N
yellow/brown	black	Channel $\overline{N}$		Channel $\overline{N}$
black	white/green	GND	GND	GND
yellow/black	violet (white)[1]	$\overline{\text{Alarm}}$/Sense GND[2]	$\overline{\text{Alarm}}$[4]	$\overline{\text{Alarm}}$
Screen[3]	Screen[3]	Screen[3]	Screen[3]	Screen[3]

[1] white for RS 422 + Sense (T) [2] depending on ordering code

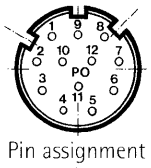
[3] connected to housing

[4] for PVC-cable either yellow/red or yellow/black; for TPE-cable only violet

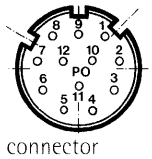
Connector 12 pole (CONIN)

Pin	RS 422 + Sense (T)	RS 422 + Alarm (R)	Push-pull (K)	Push-pull complementary (I)
1	Channel $\overline{B}$	Channel $\overline{B}$	N.C.	Channel $\overline{B}$
2	Sense V_{CC}	Sense V_{CC}	N.C.	Sense V_{CC}
3	Channel N	Channel N	Channel N	Channel N
4	Channel $\overline{N}$	Channel $\overline{N}$	N.C.	Channel $\overline{N}$
5	Channel A	Channel A	Channel A	Channel A
6	Channel $\overline{A}$	Channel $\overline{A}$	N.C.	Channel $\overline{A}$
7	N.C.	$\overline{\text{Alarm}}$	$\overline{\text{Alarm}}$	$\overline{\text{Alarm}}$
8	Channel B	Channel B	Channel B	Channel B
9	N.C.*	N.C.*	N.C.*	N.C.*
10	GND	GND	GND	GND
11	Sense GND	N.C.	N.C.	N.C.
12	5 VDC = ± 10%	5/10...30 VDC=	10...30 VDC=	10...30 VDC=

* Screen for cable with CONIN connector



Pin assignment connector counter clockwise (ccw)



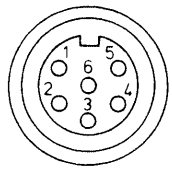
connector clockwise (cw)

Connector 10 pole (MIL)

Pin	RS 422/Push-pull complementary Euro-pinout (connection codes O and K)	Push-pull (O and K)	RS 422/Push-pull complementary US-pinout (R and T)
1/A	Channel A	Channel A	Channel A
2/B	Channel B	Channel B	Channel B
3/C	Channel N	Channel N	Channel N
4/D	5/10...30 VDC =	5/10...30 VDC =	5/10...30 VDC =
5/E	$\overline{\text{Alarm}}$	$\overline{\text{Alarm}}$	$\overline{\text{Alarm}}$
6/F	GND	GND	GND
7/G	Channel $\overline{A}$	Screen	Screen
8/H	Channel $\overline{B}$	N.C.	Channel $\overline{A}$
9/I	Channel $\overline{N}$	N.C.	Channel $\overline{B}$
10/J	Screen	Screen	Channel $\overline{N}$

Connector 6 pole (BINDER)

Push-pull	Pin
10 ... 30 VDC	1
Channel A	2
Channel N	3
Channel B	4
$\overline{\text{Alarm}}$	5
GND	6



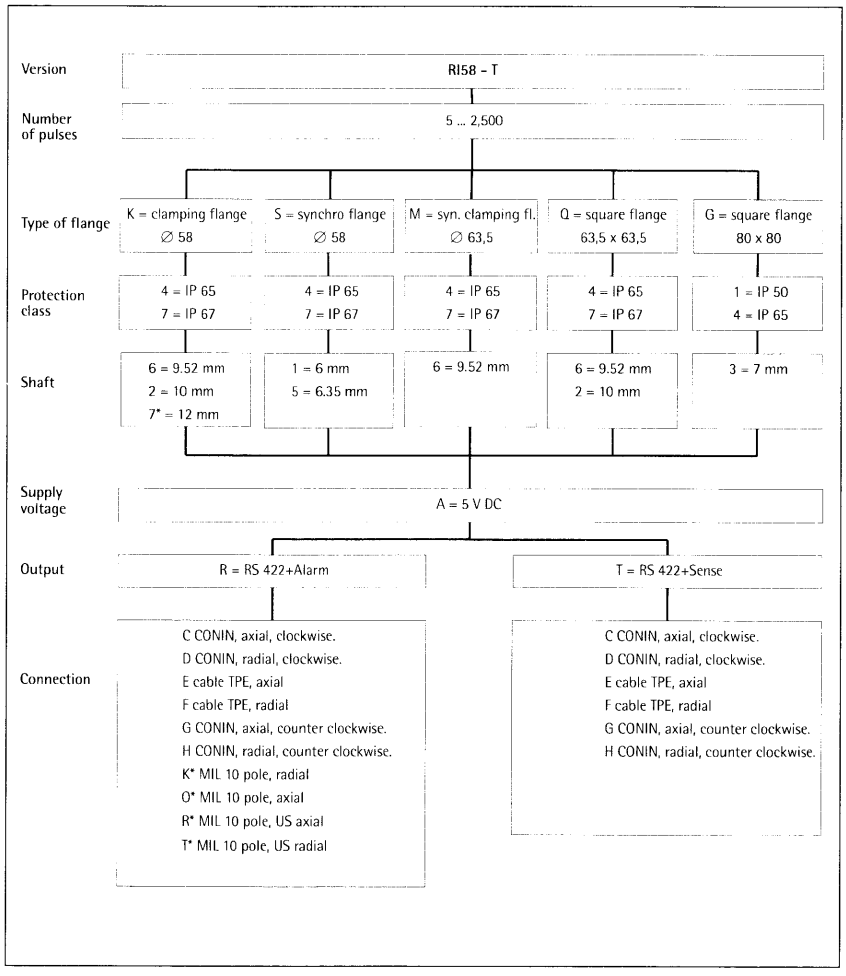
Connector 6/7 pole (MIL)

Pin	MIL 6 pole Push-pull	MIL 7 pole Push-pull
1/A	10...30 VDC	Channel A
2/B	Channel A	Channel B
3/C	Channel B	Channel N
4/D	Channel N	10...30 VDC =
5/E	GND	$\overline{\text{Alarm}}$
6/F	Screen	GND
7/G	-	Screen

Connector 8 pole (KPT 12-8P)

Pin	RS 422 (R), Push-pull complementary
1/A	Channel B
2/B	Channel $\overline{B}$
3/C	Channel $\overline{A}$
4/D	Channel A
5/E	+ U_B
6/F	GND
7/G	Channel N
8/H	Channel $\overline{N}$

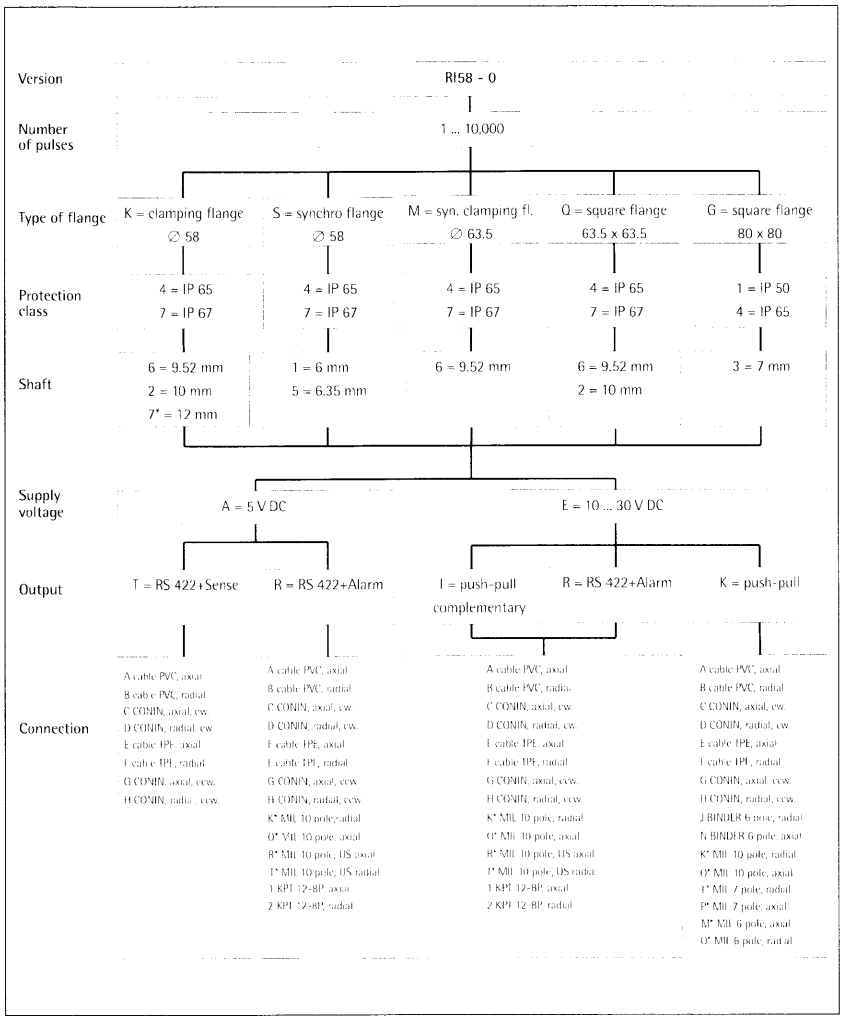
Standard versions RI 58-T (high temperature)



*not for IP 67
Other versions on request

Type RI 58

Standard versions
RI 58-O



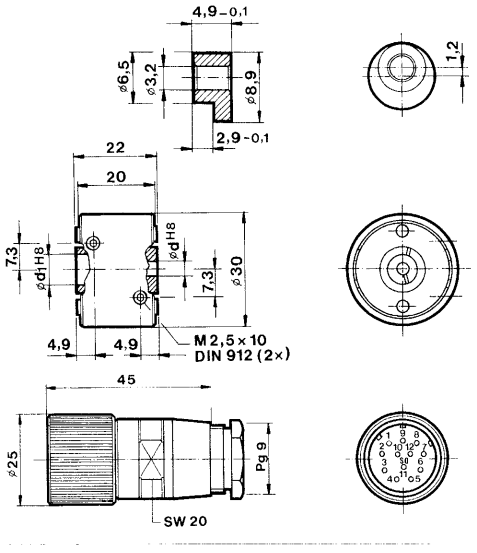
* not for IP 67
Other versions and explosion-proof on request

Accessories

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

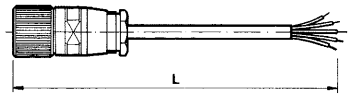
Diaphragm coupling
hole 6/6 mm
Ordering code 1 076 013
hole 10/10 mm
Ordering code 1 076 014

Cable plug connector
for connector (CONIN),
clockwise
Ordering code 3 539 202
for connector (CONIN),
counter clockwise
Ordering code 3 539 229



Accessories

Extension cables (TPE)



12-pin plug (socket) on one end	clockwise **Ordering code**	counter clockwise **Ordering code**
L= 3 m	**1 522 348**	**1 522 394**
L= 5 m	**1 522 349**	**1 522 395**
L= 10 m	**1 522 350**	**1 522 396**
TPE-cable (not made up with connectors)	**3 280 112** + length	

For more detailed specifications and other accessories see "Accessories".

Ordering data

O standard
T high temperature

Supply voltage
A 5 VDC
E 10 ... 30 VDC

Type of flange
S synchro flange
K clamping flange
G square flange80 x 80
Q square flange 63.5 x 63.5
M synchro clamping flange

Shaft diameter
1 6 mm
2 10 mm
3 7 mm
5 6.35 mm
6 9.52 mm
7 12 mm

RI58- / .

Number of pulses
RI58-O: **1 ... 10,000**

RI58-T: **5 ... 2,500**

Protection class
1 IP 50
4 IP 65
7 IP 67

Output
T RS 422 + Sense
K push-pull, short circuit proof
I push-pull complementary
R RS 422+Alarm

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

* encoder connector with pins

[1] European pinout
[2] U.S. pinout

X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for hengstler ***manufacturer:***

Other Similar products are found below :

0.601.151 0.635.810 0.633.831 0.868.165 0.891.606