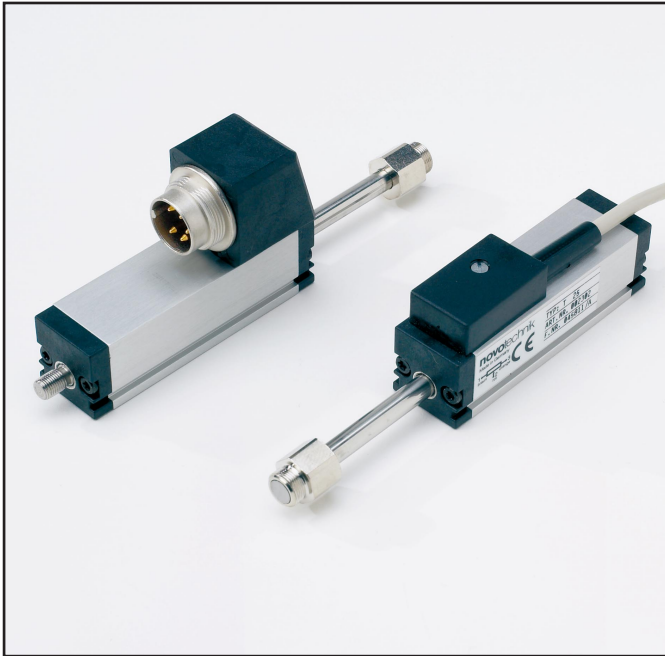# Position Transducers
25, 50, 75, 100, 150 mm

Series T
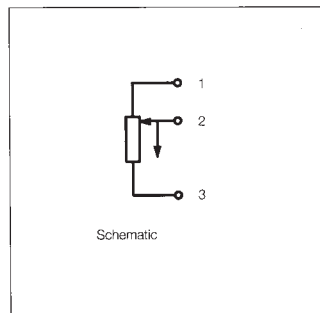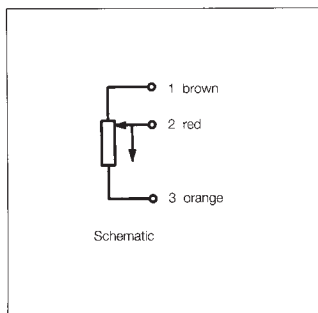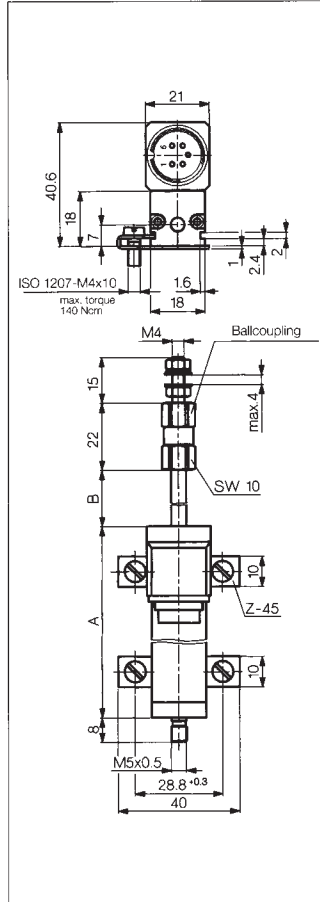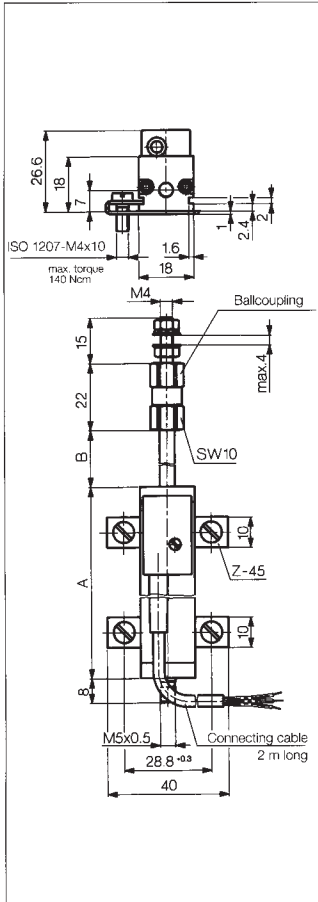Series TS

Position transducers employing conductive plastic resistance and collector tracks provide direct means of measurement in control and regulating systems and in instrumentation.

Using this type of transducer, problems traditionally asso-ciated with rotary potentio-meters, especially reliability, life expetancy, accuracy and operational speed, are over-come. Thus opening up new fields of application in direct position measurement.

A ball coupling (which may be fitted to either end of the shaft) offers backlash-free operation even where there are parallel or angular errors between the transducer axis and the direc-tion of movement. The elasto-mer-damped, independently sprung precious metal multi-finger wiper has been designed to provide a reliable contact even at high speeds or when experiencing shock or vibration.

Special features
- long life - 100 x 10^6 operations
- outstanding linearity up to ±0.075 %
- actuating shaft with double bearing system
- special ball coupling eliminates sidewards forces
- high operational speeds up to 10 m/s
- insensitive to shock and vibration
- choice of plug or cable connection

Left diagram (series T)

26.6
18
7
ISO 1207-M4x10
max. torque
140 Ncm

1.6
18
2.4
2
1

M4
Ballcoupling
15
22
B
max. 4
SW10
10
Z-45
A
10
8
M5x0.5
Connecting cable
2 m long
28.8 +0.3
40

Right diagram (series TS)

21
40.6
18
7
ISO 1207-M4x10
max. torque
140 Ncm

1.6
18
2.4
2
1

M4
Ballcoupling
15
22
B
max. 4
SW 10
10
Z-45
A
10
8
M5x0.5
28.8 +0.3
40

Description

Description	
Housing	aluminium, anodized
Actuating shaft	stainless steel
Bearings	both ends in DU sleeves
Fixings	adjustable clamps
Ball coupling	stainless steel with a hardened ball sprung against a hardened plate surface
Resistance element	conductive-plastic
Wiper assembly	precious metal multi-finger wiper, elastomer-damped
Electrical connections series T series TS	3core stress-relieved shielded cable, 2 m plug connector

Schematic (left)

1 brown
2 red
3 orange

Schematic

Schematic (right)

1
2
3

Schematic

Type designations	T25 TS25	T50 TS50	T75 TS75	T100 TS100	T150 TS150	with cable with plug
Electrical Data						
Defined eletrical range	25	50	75	100	150	mm
Nominal resistance	1	5	5	5	5	kΩ
Resistance tolerance	20					±%
Independent linearity	0.2	0.15	0.1	0.075	0.075	±%
Repeatability	0.002					mm
Recommended operating wiper current	< 1					µA
Max. wiper current in case of malfunction	10					mA
Max. permissible applied voltage	42					V
Effective temperature coefficient of the output-to-applied voltage ratio	typical 5					ppm/°C
Insulation resistance (500 VDC, 1 bar, 2 s)	≥10					MΩ
Dielectric strength (50 Hz, 2 s, 1 bar, 500 VAC)	≤100					µA
Mechanical Data						
Length housing (dimension A)	63	88	113	138	188	+1 mm
Mechanical stroke (dimension B)	30	55	80	105	155	±1,5 mm
Weight with cable with plug	140 86	160 107	170 132	190 150	220 190	g g
Weight of the actuating shaft, with coupling and wiper block	35	43	52	58	74	g
Operating force (horizontal)	≤0.30					N
Compensation available from ball coupling	±1 mm parallel offset, ±2.5° angular offset					
Maximum permitted torque for fixing screws (with washer)	140					Ncm

Environmental Data		
Temperature range	-30... +100	°C
Vibration	5... 2000 $A_{max} = 0.75$ $a_{max} = 20$	Hz mm g
Shock	50 11	g ms
Life	>100 x 10^6	operations
Protection class	IP 40 (DIN 400 50 / IEC 529)	

EEM 33-70   EEM 33-71   EEM 33-72

ø21   ø18

63   73

ø20   30   33

Distance required for disconnection 10 mm

Order designations

Type	Art.no.
T 25	002302
TS 25	002332
T 50	002303
TS 50	002333
T 75	002304
TS 75	002334
T 100	002305
TS 100	002335
T 150	002306
TS 150	002336
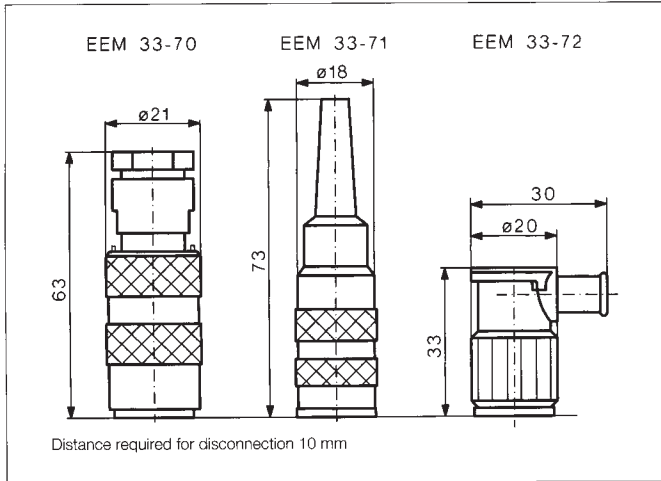
Included in delivery
2 fixing clamps Z-45 incl.
4 screws M4x10,
1 ball coupling

Recommended accessories
Plug type EEM 33-70
protection class IP 65,
Plug type EEM 33-71
protection class IP 40,
Plug type EEM 33-72
protection class IP 63,
Process-controlled indicators
MAP... with display,
Signal conditioner
MUP... /MUK ... for
standardized output signals.

Important
All the values given in this data
sheet for linearity, lifetime,
micro-linearity, resistance to
external disturbances and
temperature coefficient in the
voltage dividing mode are
quoted for the device opera-
ting with the wiper voltage
driving on operational amplifier
working as a voltage follower,
where virtually no load is
applied to the wiper
(le ≤ 1 µA).

novotechnik
Siedle Group

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Subject to changes