

INDUCTIVE DISPLACEMENT TRANSDUCER Model IW 12

- Linear stroke ranges up to 250 mm
- Half-bridge configuration for operation with external electronic module
- Infinite resolution and repeatability
- Completely potted for operation at severe environmental conditions
- Operating temperature - 55 to + 120°C

TWK

Description

A metal cylinder of 12 mm dia incorporates two symmetrical windings connected in series (half-bridge). A free armature (core and push rod) being displaced within the coil generates a change of the magnetic field of the two windings. The windings are energized by an external oscillator/demodulator unit supplying 10 Vrms/10 kHz and providing a DC-output signal, proportional to the displacement to be measured. Electrical zero is at mechanical center position.

Complete epoxy potting ensures positive protection against humidity, shock and vibration.

Standard types and options

Standard types are shown in table below. They feature a cylindrical housing with wire leads at the rear. The following options can be supplied upon request:

- **IW 12/... KV:** With universal joint bearing at push rod end
- **IW 12/... GV:** With M14 x 1.5 thread and hex screw mounting at front end
- **IW 12/... GH:** With M 18 x 1.5 thread and hex screw mounting at rear
- **IW 12/... AK:** With sealed axial cable exit (3 x 0.25 mm², external dia 7.5 mm, silicon insulation, standard length 1 m)
- **IW 12/... RK:** With sealed cable lead as above but radial exit
- **IW 12/... T:** With spring return (gauge) - up to 50 mm stroke only

- **IW 12/...ST85:** With axial connector exit, Souriau series 851, with cable entry 4 mm dia and for 0,25 mm² wires
- **IW 12/... ST71:** With radial connector exit, Binder series 712, protection grade IP 65, temperature range - 40° to + 85°C, with cable entry 5 mm dia and for 0.25 mm² wires.

Environmental specification

- Operating temperature: - 55° to + 120°C
- Shock: 200 m/s²
- Vibration: 5 to 60 Hz/0.3 mm pp
60 to 2000 Hz/30 m/s²
- Acceleration: 60 m/s² permanently
- Protection grade: IP 68 (to DIN 40050)

Electrical specification

- Independent linearity: 0.5 % of full stroke

Supply and signal conditioning modules

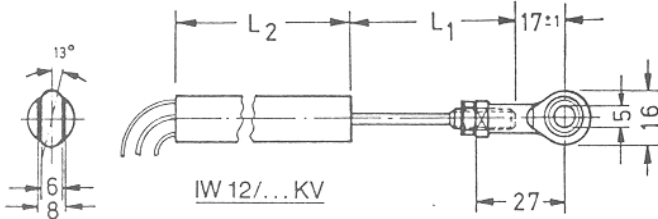
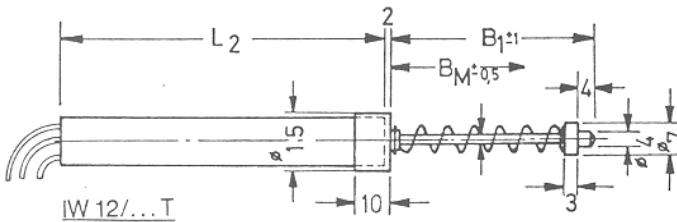
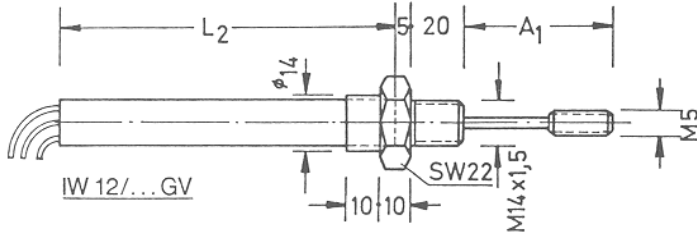
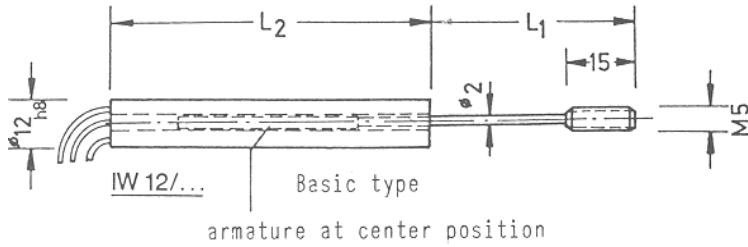
The following modules are available for operation with IW 12 transducers:

- **OD 15:** Oscillator/Demodulator to data sheet 6102 EA.
- **OV 15:** Oscillator/Demodulator/Amplifier allowing zero-point and span selection to data sheet 6102 EA
- **OE 15:** Oscillator/Demodulator/Current Impresser allowing span selection, to data sheet 6105 EA.

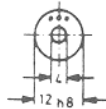
Type	IW	12/12	12/24	12/50	12/100	12/150	12/250
Stroke	mm	± 6	± 12	± 25	± 50	± 75	± 125
Sensitivity	mV/mm	700	280	150	90	70	50
Ohmic resistance	Ω	200	145	140	140	110	110
Inductance	mH	20	25	25	25	30	35
Weight w/o armature	g	28	46	77	126	170	230
Weight of armature	g	7	10	15	22	30	42

All data are nominal and have been established along with oscillator/demodulator module OD 15 to data sheet 6102 EA.

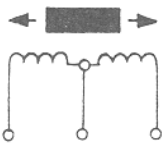
Dimensions in mm



View of rear



Wiring diagram

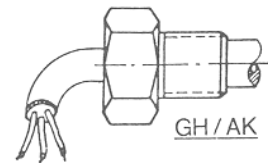
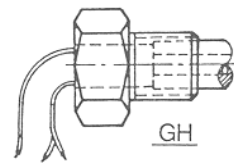
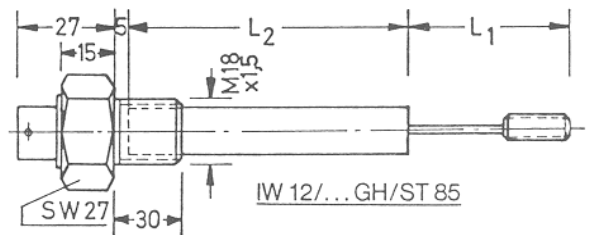
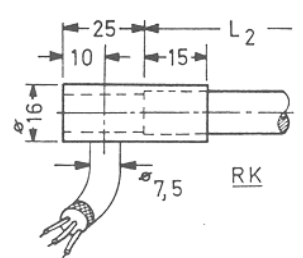
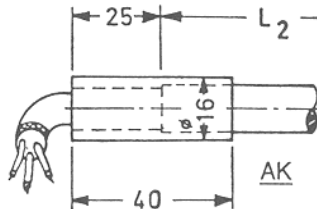
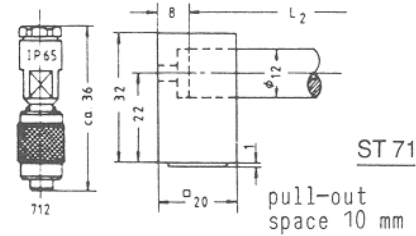
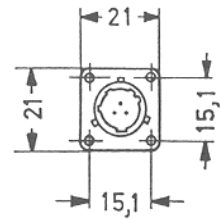
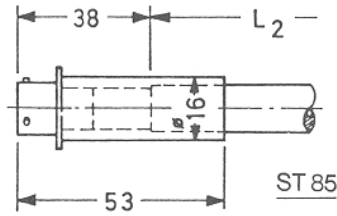


- red black blue Teflon insulated wires, 300 mm
- brown yellow blue Cable "AK", 1 m
- A B C Cable "RK", 1 m
- 1 2 3 Connector "ST 85"
- 1 2 3 Connector "ST 71"

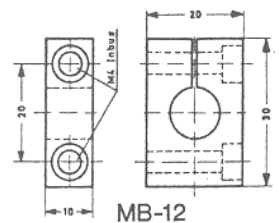
Dimensions referring to above drawings

IW 12/	12	24	50	100	150	250
L ₁	1) ¹ 50	64	77	83	130	190
L ₂	60	100	170	270	350	470
A ₁	1) ¹ 25	37	52	58	105	165
B ₁	2) ² 46	64	89	—	—	—
B _M	1) ¹ 34	47	60	—	—	—

1) Armature at center position (electrical zero) ± 5 %
2) Armature full out ("I" only)



Mounting block MB 12
Weight 35 g



Note: Options ST85, AK, RK, GH/AK, GH/ST85 have the inside cylindrical tube obturated at the rear. This implies the following reductions of the usable stroke range when moving towards the rear:
IW 12/100 (+ 50) becomes + 50/ - 46 mm
IW 12/150 (+ 75) becomes + 75/ - 60 mm
IW 12/250 (+ 125) becomes + 125/ - 80 mm