

LVDT

Linear Variable Differential Transformer



IE-Series

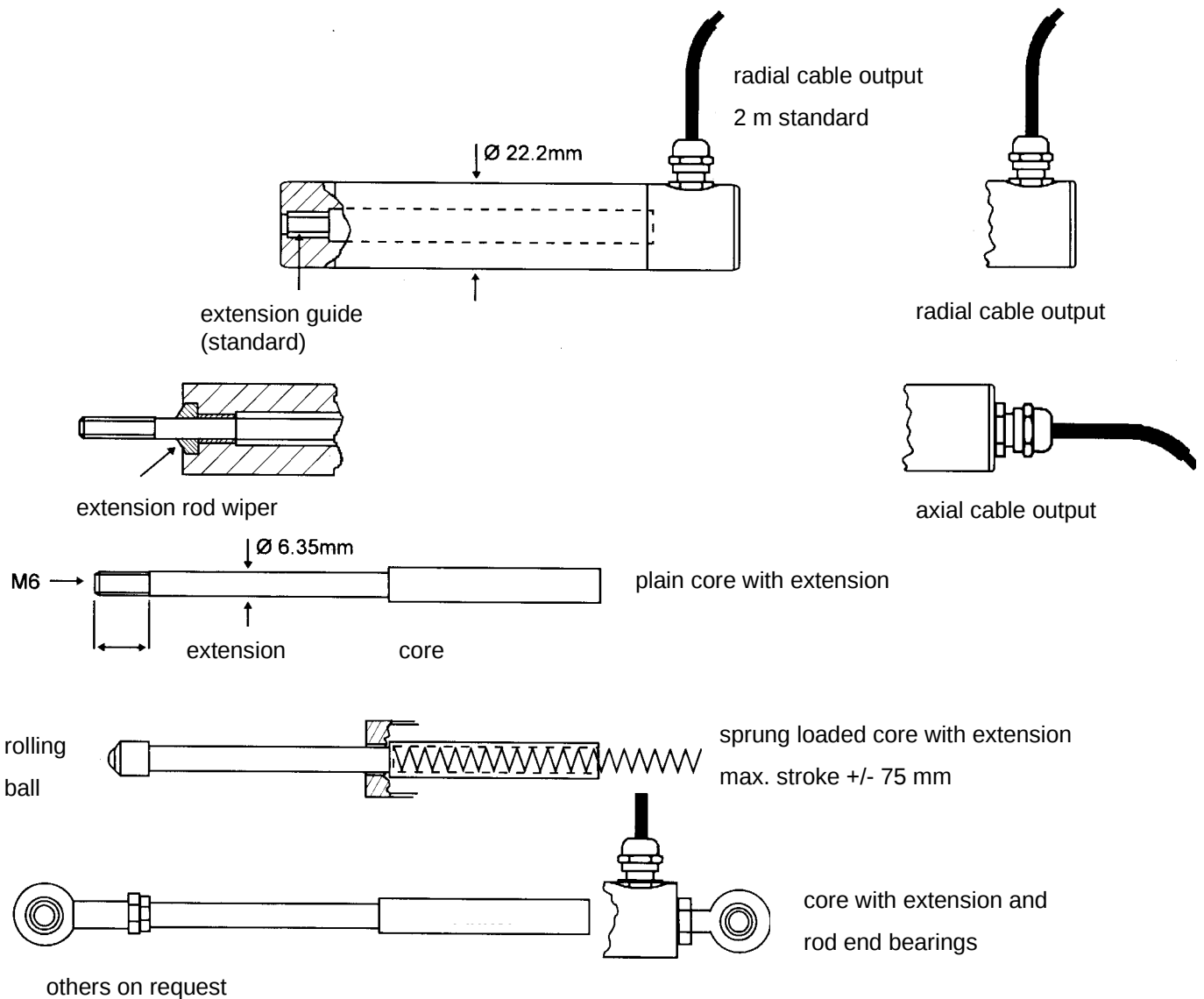
- **Range $\pm 0,50 \text{ mm} \dots \pm 550 \text{ mm}$**
- **Infinite Resolution**
- **Output: AC/DC ($\pm 2,5 \text{ V}$ / $0 \dots 10 \text{ V}$ / $4 \dots 20 \text{ mA}$)**
- **Excitation $5 V_{\text{rms}}$ at 3 kHz (AC)**
- **Linearity $< \pm 0,5\%$**
- **Repeatability up to $2,5 \mu\text{m}$**
- **Extension Rod Wiper**
- **Stainless Steel Housing**
- **Various Mounting Possibilities**
- **Temperature $-30 \dots +150^\circ\text{C}$ (optional)**
- **Protection Class IP65, IP68 (optional)**

Technical Data

Resolution	nearly infinite, depending on following circuit (ripple) and measurement range.
Range	$\pm 0,50/ \pm 2,50/ \pm 5,00/ \pm 10,00/ \pm 12,50/ \pm 15,00/ \pm 25,00/ \pm 50,00/ \pm 75,00/ \pm 100,00/ \pm 125,00/ \pm 150,00/ \pm 175,00/ \pm 200,00/ \pm 250,00/ \pm 300,00/ \pm 400,00/ \pm 500,00/ \pm 550,00$ mm Note: every LVDT works unidirectional, using zeroshift.
Linearity	$\leq \pm 0,5\%$ range, others on request.
Output AC (external Electronics)	Excitation $5 V_{rms}$ at 3 kHz Temperature: $-30...+85^{\circ}\text{C}$ (Standard) optional $-30...+150^{\circ}\text{C}$ Frequency Response: 3 dB at 180 Hz
External Electronics	Using the external electronic device 8100 it is possible to adapt LVDT`s with smaller housing and an extended temperature range up to $150^{\circ}\text{C}$ . For critical applications in harsh environments we recommend LVDT`s with external electronics. Please see technical details in the data sheets 8100 and 6000 (19" rack, modular system) Output: 0...5 VDC, 0...10 VDC, 4...20 mA
Internal Electronics	Build in electronics. Following outputs are available (others on request). $\pm 2,5$ VDC Supply: 10...30 VDC (to be specified) Current consumption: 35 mA (at 12 VDC) Ripple: max. 30 mV Output Bandwidth: 300 Hz Zero Temperature Coefficient: 0,01% FS/ $^{\circ}\text{C}$ Span Temperature Coefficient: 0,03% FS/ $^{\circ}\text{C}$ Working Range: $-50...+85^{\circ}\text{C}$. 0...10 VDC Supply: 15...30 VDC (to be specified) Current consumption: 35 mA (at 12 VDC) Ripple: max. 30 mV Output Bandwidth: 300 Hz Zero Temperature Coefficient: 0,01% FS/ $^{\circ}\text{C}$ Span Temperature Coefficient: 0,03% FS/ $^{\circ}\text{C}$ Working Range: $-50...+85^{\circ}\text{C}$. 4...20 mA Supply: 14...24 VDC Ripple: max. 0,1% at 20 mA Null: 12 mA at zero set within 0,5% Working Range: $-20...+95^{\circ}\text{C}$.
Type	Plain core with extension front end guided, core with extension and rod end bearings, Sprung loaded core with extension front end guided max. stroke ± 75 mm Extension rod wiper
Housing	Stainless steel
Connection	2000 mm cable output (others on request)
Protection	IP65
Shock	1000g (10 ms)
Vibration	20 g (2 kHz)



Type

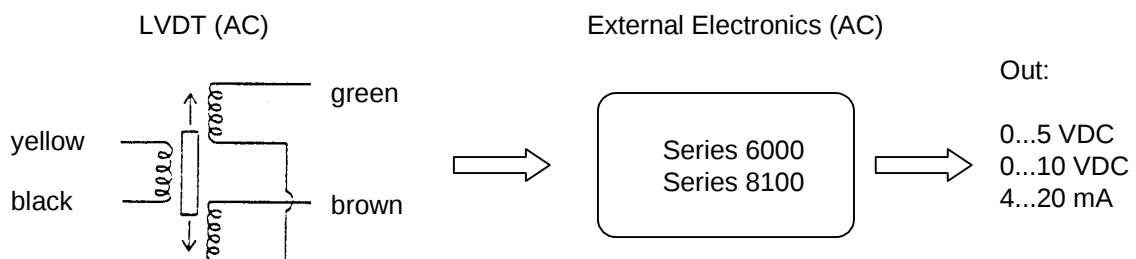


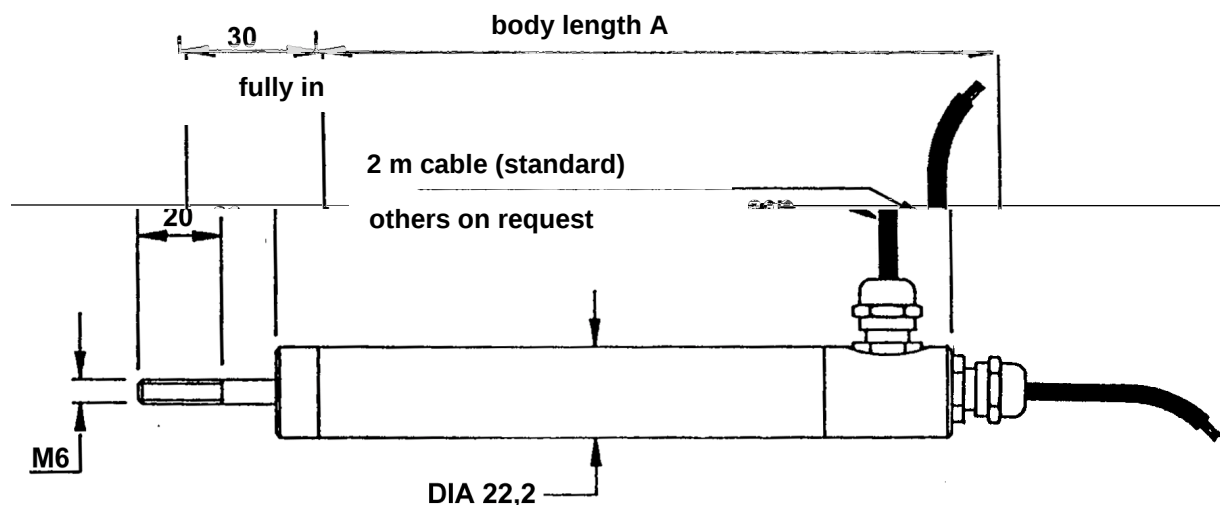
Connection Diagram

Internal Electronics (DC-unipolar and 4...20 mA)

	(3-wire)	(4-wire, IP68 (W))
red	supply	supply
blue	0 Volt COM	0 Volt COM
green	signal	signal COM
yellow		signal

LVDT with external electronics:





+/- 550	1460	1410	430	10	550	1530
+/- 500	1460	1410	390	10	550	1530
+/- 400	1200	1150	460	20	450	1010
+/- 300	970	920	400	5	690	770
+/- 250	860	810	350	10	290	560
+/- 200	750	700	300	10	250	430
+/- 175	665	615	310	2	230	360
+/- 150	610	560	330	5	210	290
+/- 125	550	500	300	2	180	320
+/- 100	500	450	190	5	150	150
+/- 75	440	390	350	20	260	460
+/- 50	370	320	320	2	200	270
+/- 25	285	235	240	5	130	210
+/- 15	225	175	230	20	90	190
+/- 12,5	210	160	300	15	120	190
+/- 10	180	130	280	10	70	170
+/- 5	165	115	80	5	100	110
+/- 2,5	140	90	90	5	180	460
+/- 0,5	130	80	50	20	40	1800
range (mm)	body length A (mm) internal electronics	body length A (mm) external electronics	sensitivity at 3 kHz (mV/V)	null (mV)	primary resistance (Ω)	secondary resistance (Ω)

internal electronics - technical data

±2,5 VDC
 supply: 10...30 VDC
 current consumption: 35 mA (at 12 VDC)
 ripple: max. 30 mV
 output bandwidth: 300 Hz
 zero temperature coefficient: 0,01% /°C
 span temperature coefficient: 0,03% /°C
 temperature range: -50...+85°C

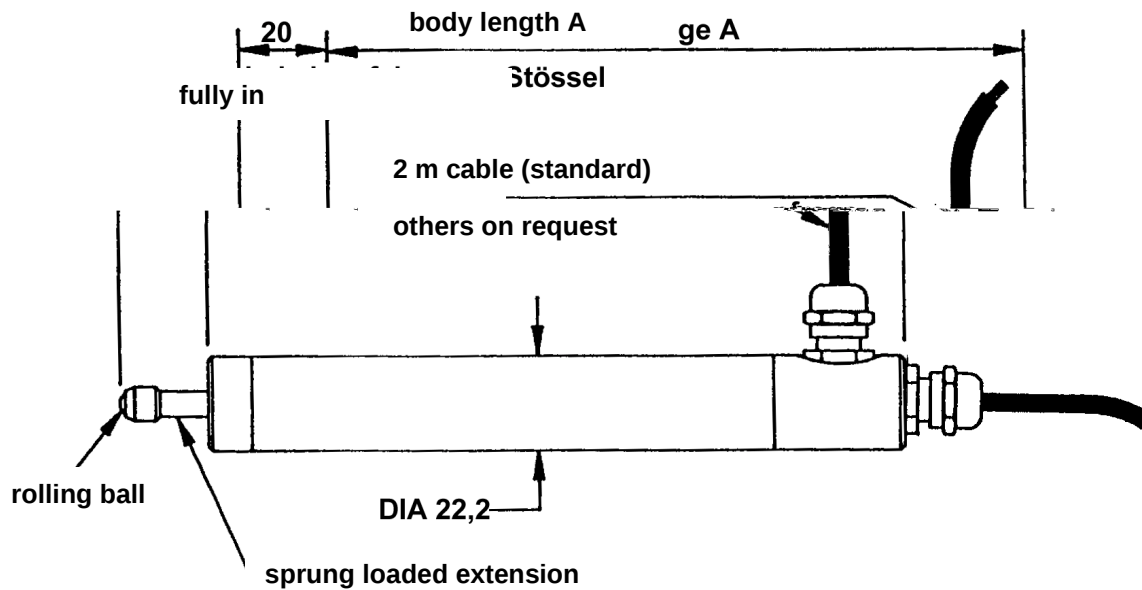
0...10 VDC
 supply: 15...30 VDC
 current consumption: 35 mA (at 15 VDC)
 ripple: max. 30 mV
 output bandwidth: 300 Hz
 zero temperature coefficient: 0,01% /°C
 span temperature coefficient: 0,03% /°C
 temperature range: -50...+85°C

4...20 mA
 supply: 14...24 VDC
 ripple: max. 0,1% at 20 mA
 null: 12 mA ± 0,5%
 temperature range: -20...+95°C

external electronics

Please see technical details in the data sheets 8100 and 6000 (19" rack, modular system). Outputs available:
 0...5 VDC, 0...10 VDC, 4...20mA





+/- 75	440	390	350	20	260	460
+/- 50	370	320	320	2	200	270
+/- 25	285	235	240	5	130	210
+/- 15	225	175	230	20	90	190
+/- 12,5	210	160	300	15	120	190
+/- 10	180	130	280	10	70	170
+/- 5	165	115	80	5	100	110
+/- 2,5	140	90	90	5	180	460
+/- 0,5	130	80	50	20	40	1800
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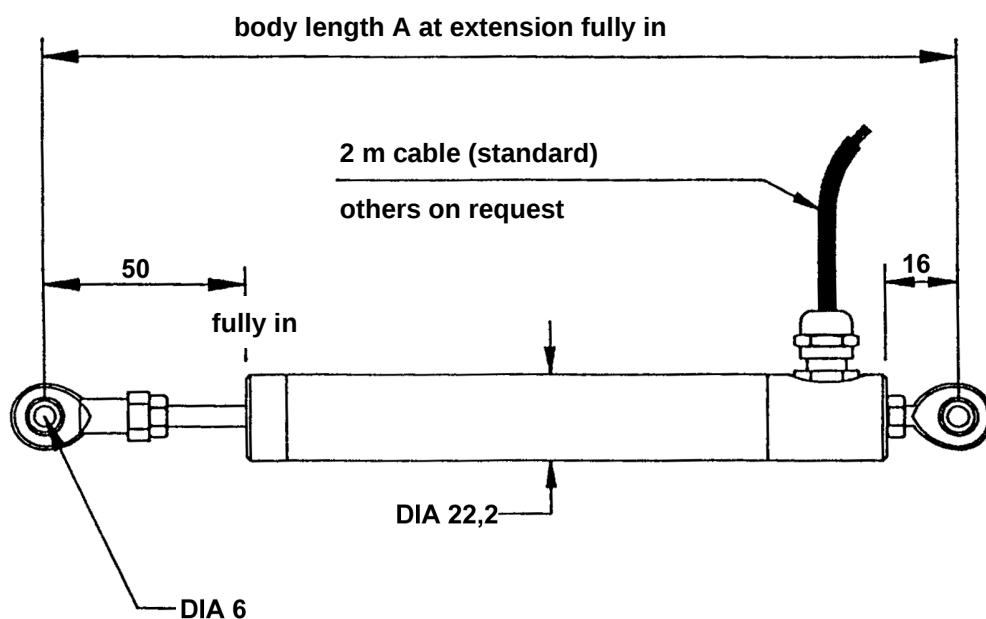
external electronics

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 0...5 VDC, 0...10 VDC, 4...20mA



Dimensions

IE-Series: core with extension and rod end bearings



+/- 550	1526	1476	430	10	550	1530
+/- 500	1526	1476	390	10	550	1530
+/- 400	1266	1216	460	20	450	1010
+/- 300	1036	986	400	5	690	770
+/- 250	926	876	350	10	290	560
+/- 200	816	766	300	10	250	430
+/- 175	731	681	310	2	230	360
+/- 150	676	626	330	5	210	290
+/- 125	616	566	300	2	180	320
+/- 100	566	516	190	5	150	150
+/- 75	506	456	350	20	260	460
+/- 50	436	386	320	2	200	270
+/- 25	351	301	240	5	130	210
+/- 15	291	241	230	20	90	190
+/- 12,5	276	226	300	15	120	190
+/- 10	246	196	280	10	70	170
+/- 5	231	181	80	5	100	110
+/- 2,5	206	166	90	5	180	460
+/- 0,5	196	146	50	20	40	1800
range (mm)	body length A (mm) internal electronics	body length A (mm) external electronics	sensitivity at 3 kHz (mV/V)	null (mV)	primary resistance (Ω)	secondary resistance (Ω)

internal electronics - technical data

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4...20 mA
 supply: 14...24 VDC
 ripple: max. 0,1% at 20 mA
 null: 12 mA ± 0,5%
 temperature range: -20...+95°C

external electronics

Please see technical details in the data sheets 8100 and 6000 (19" rack, modular system). Outputs available:
 0...5 VDC, 0...10 VDC, 4...20mA



Order Code Series IE

temperature - range: -30...+85°C temperature- range: -30...+150°C	external electronics	radial cable exit	IEJ- IEJS- IEJR-	(plain core with extension) (sprung loaded core with extension) (extension with rod end bearings)
		axial cable exit	IEJA- IEJSA-	(plain core with extension) (sprung loaded core with extension)
	internal electronics +/- 2,5 VDC	radial cable exit	IED- IEDS- IEDR-	(plain core with extension) (sprung loaded core with extension) (extension with rod end bearings)
		axial cable exit	IEDA- IEDSA-	(plain core with extension) (sprung loaded core with extension)
	internal electronics 0...10 VDC	radial cable exit	IEU- -10 IEUS- -10 IEUR- -10	(plain core with extension) (sprung loaded core with extension) (extension with rod end bearings)
		axial cable exit	IEUA- -10 IEUSA- -10	(plain core with extension) (sprung loaded core with extension)
	internal electronics 4...20 mA	radial cable exit	IEI- IEIS- IEIR	(plain core with extension) (sprung loaded core with extension) (extension with rod end bearings)
		axial cable exit	IEIA- IEISA-	(plain core with extension) (sprung loaded core with extension)
	external electronics	radial cable exit	IEHJ-	(plain core with extension)
		axial cable exit	IEHJA-	(plain core with extension)

Additional option G: extension rod wiper

Additional option W: IP68

We reserve the right to alter the specification without prior notice

For additional information, quotations or technical inquiries please contact

MONITRAN LTD.

we would be happy to assist you

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