

HORN Tacho-Indicator Circular Form A

EA
50010000

For remote speed monitoring, speed-indicators as well as generators are required. HORN speed-indicators are robust moving coil instrument of high accuracy, field-proven under severe operating conditions and maintenance-free. Depending on the application, they are available for surface or flush mounting. Indicators can also be supplied for use in hazardous locations.

Technical Data

Movement

Moving Coil meter movement, current consumption 1 mA full scale deflection, toe bearing.

Needle Scale Calibration

Needle black, dial white; graduations, inscription and figures conform to DIN 43803, normally carried out with reference to a HORN tachogenerator; measuring range and measured quantity can be selected at choice, i.e. any indicating (measuring) range can be assigned to any speed range of the generator shaft.

Reading Accuracy

$\pm 1\%$ relative to the scale range. With a wire cross section up from $2 \times 0.75 \text{ mm}^2$, line lengths of up to 100 m will not affect the indication. The temperature drift does not exceed 0.2% for each $10\text{ }^\circ\text{C}$ change of temperature. These values conform to classification 1/0.2 (VDE0410).

Temperature Range

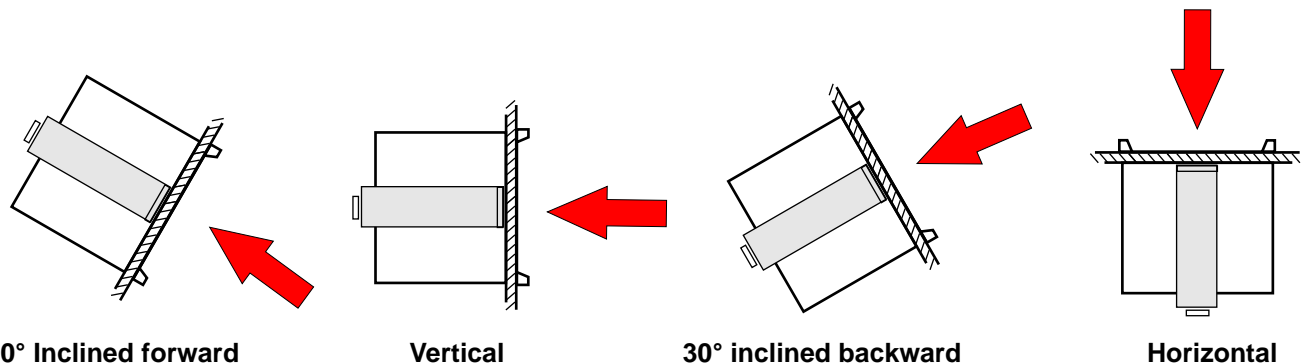
$-20\text{ }^\circ\text{C}$ $+45\text{ }^\circ\text{C}$

Electrical Connection

Terminals to DIN 46206 (enclosure IP 00); the versions with ignition protection (Ex) e G5 are provided with covered flat terminals to DIN 41000 (enclosure IP 54) and a Pg 7 cable gland.

Installation Position

If not specified otherwise, indicators are calibrated for vertical mounting (position of the dial). Other mounting positions as per drawing below will be considered provided the order specifies the angle of inclination of the scale with reference to the horizontal plane.



30° Inclined forward

Vertical

30° inclined backward

Horizontal

Special versions

Cover glass of non-reflecting or safety compound glass.

Front bezel of nickel-plated with EA ... e

Scale - black dial with white graduations; pointer tip, main graduations, numbers and measured value readings phosphorescent, scale ground after glowing; graduations, numbers pointer and measured quantity black, scale with precise graduation, single and double graduation, scale stretched in the initial or final range, suppressed zero up to 25% of final value, (for 250° needle deflection), dual or multiple scale by special calibration or additional graduation, coloured markings at any place of the scale. Coloured sectors or arcs, additional captions on scale.

Explosion Protection

Following speed indicators are available in ignition protection class (Ex) e G 5 (increased safety): EA 100 ... fl, EA 100 ... e to EA 300 ... e. The indicators can also be supplied in special versions for passive two terminal use in intrinsically safe circuits (Ex) i G 5. Explosion protection is possible only for indicators without scale illumination.

Casing

to DIN 43700, front bezel nickel-plated on clamp type indicators, flush mounting instruments are black (matt finished synthetic resin enamel)

Enclosure

IP 53 DIN 40050

Type Approval

Germanischer Lloyd

EA 80 ... Sp 91 940 HH 5/77-84

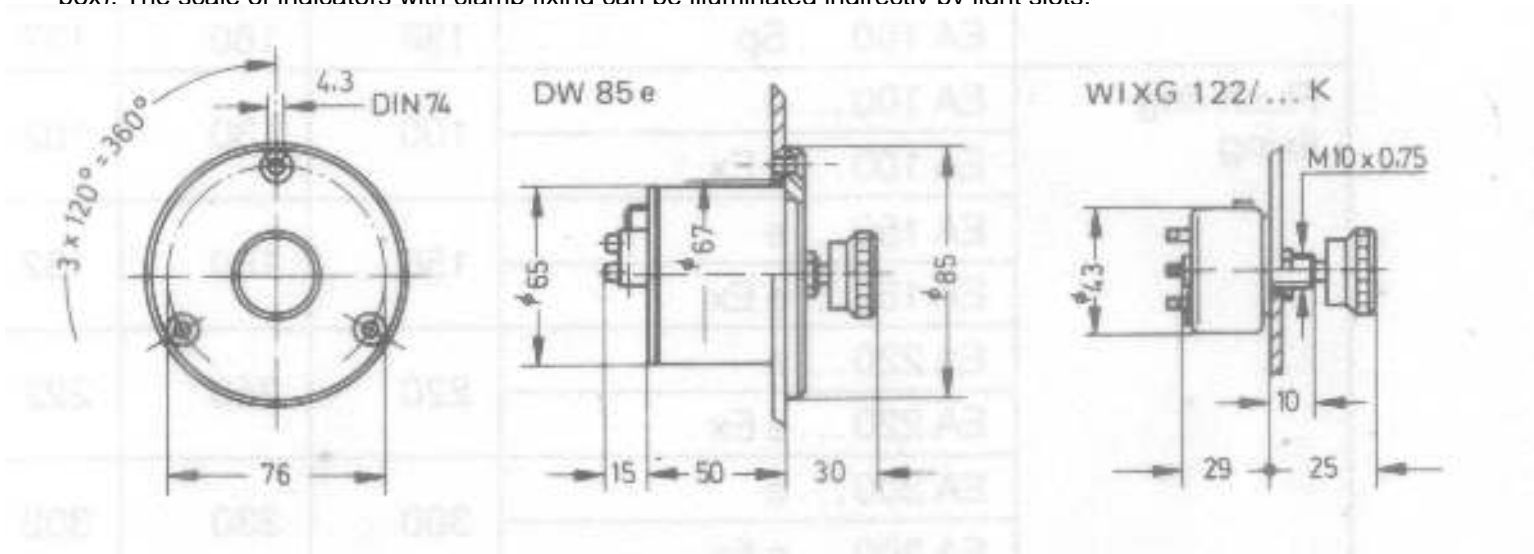
EA 100.. 91 066 HH 10/75-88

EA 150.. 91 068 HH 10/75-88

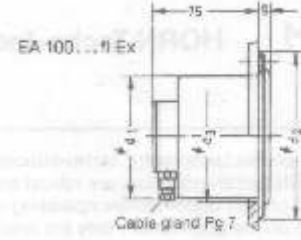
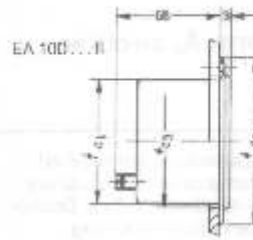
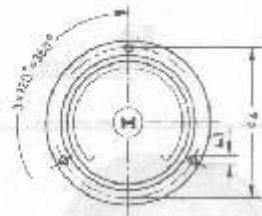
EA 160.. Sp 91 069 HH 10/75-88

Scale Illumination

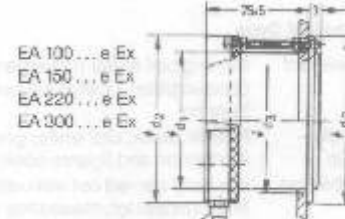
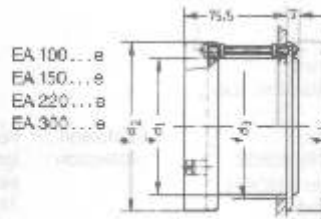
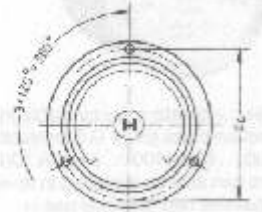
24, 110, or 220V; EA 60 ... Sp, EA 80 ... Sp, EA 100 ... can be operated with 24 V only. The dial is transparent. The illumination can be adjusted or switched off by means of a dimmer DW 85 e (in separate box) or WIXG 122/ ... K (without box). The scale of indicators with clamp fixing can be illuminated indirectly by light slots.



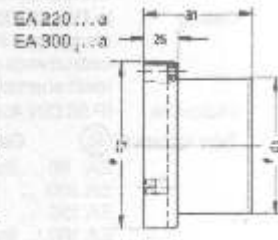
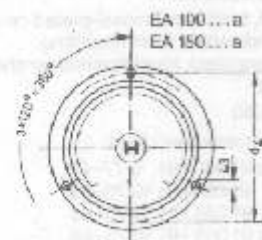
Indicators with flange fixing



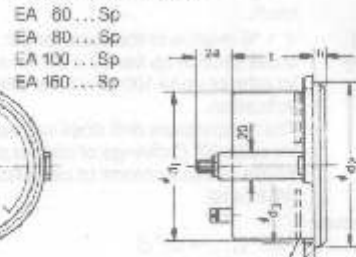
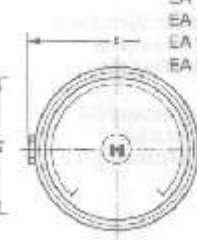
Indicators with flush ring fixing



Indicators for surface mounting



Indicators with clamp fixing



Design	Type Design	D1	D2	D3	D4	c	h	t	Scale length	Weight Kg
Flange fitting	EA 100 ...fl	100	130	102	118				157	0,8
	EA 100 ...fl Ex									
Clamp fixing	EA 60 ...Sp	60	67	61		87	7	60	105	0,4
	EA 80 ...Sp	80	86	81						
	EA 100 ...Sp	100	106	102						
	EA 160 ...Sp	136	160	137						
Flush ring fixing	EA 100 ...e	100	130	102	115				157	0,9
	EA 100 ...eEx									
	EA 150 ...e	150	180	152	165				262	1,2
	EA 150 ...eEx									
	EA 220 ...e	220	250	222	235				406	1,8
	EA 220 ...eEx									
EA 300 ...e	300	330	302	315	545	2,5				
EA 300 ...eEx										
Surface mounting	EA 100 ...a	100	130		115				157	0,8
	EA 150 ...a	150	180		165				262	1,0
	EA 220 ...a	220	250		235				406	1,6
	EA 300 ...a	300	330		315				545	2,3

Ex = Explosion protection to VDE 0171 (Ex) e G 5

Explanation of type designation	EA	Tacho-indicator	I	with scale illumination
	100 ...	nominal size (example)	fl	flush mounting type (flange)
	-1	input: AC voltage	Sp	clamp fixing
	-2	input: DC voltage (zero centre possible)	Dwf	adjustment pot - lock-type (for adj of indication)
	a	for surface/wall mounting	DW	pot for adjustment of indication
	e	for flush mounting (bezel)	Ex	ignition protection class (Ex) e G 5 to VDE 0171

Ordering information	1.	Type designation	3.	Measuring range and measured quantity (rpm, m/min, l/h ect.)
	2.	Installation position	4.	Speed of generator in connection at full scale value and type of generator