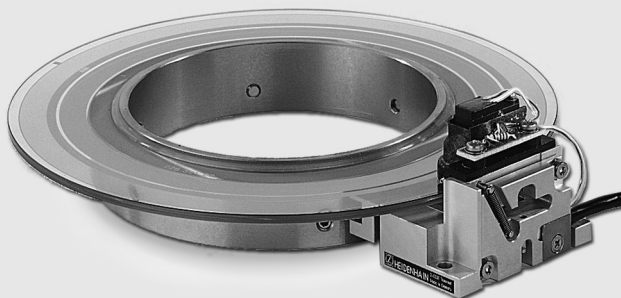




HEIDENHAIN

Montageanleitung
Mounting Instructions
Instructions de montage
Istruzioni di montaggio
Instrucciones de montaje



ERO 785

11/2013



Achtung: Die Montage und Inbetriebnahme ist von einer qualifizierten Fachkraft unter Beachtung der örtlichen Sicherheitsvorschriften vorzunehmen.

Die Steckverbindung darf nur spannungsfrei verbunden oder gelöst werden.

Die Anlage muss spannungsfrei geschaltet sein!

Note: *Mounting and commissioning is to be conducted by a qualified specialist under compliance with local safety regulations.*

Do not engage or disengage any connections while under power.

The system must be disconnected from power.

Attention: Le montage et la mise en service doivent être assurés par un personnel qualifié dans le respect des consignes de sécurité locales.

Le connecteur ne doit être connecté ou déconnecté qu'hors potentiel.

L'équipement doit être connecté hors potentiel!

Attenzione: *Il montaggio e la messa in funzione devono essere eseguite da personale qualificato nel rispetto delle norme di sicurezza locali.*

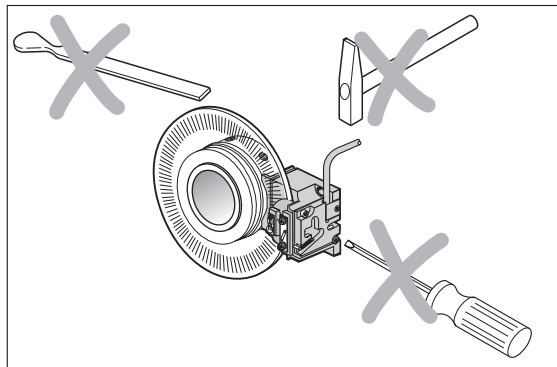
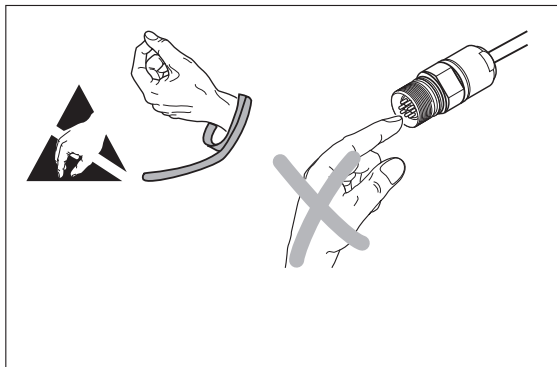
I cavi possono essere collegati o scollegati solo in assenza di tensione.

L'impianto deve essere spento!

Atención: El montaje y la puesta en marcha deben ser realizados por un especialista cualificado, observando las prescripciones locales de seguridad.

Conectar o desconectar el conector sólo en ausencia de tensión.

¡La instalación debe ser conectada en ausencia de tensión!



Maße in mm

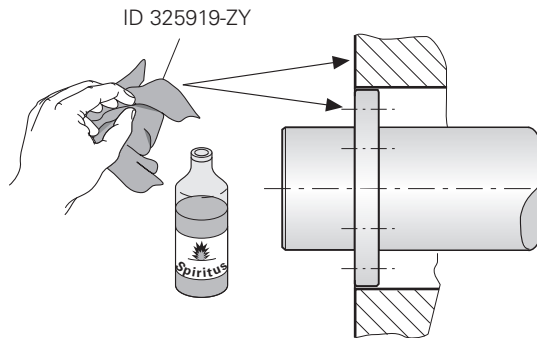
Dimensions in mm

Cotes en mm

Dimensioni in mm

Dimensiones en mm

Die Montageflächen sind vor dem Anbau zu reinigen.
Clean the mounting surfaces before mounting.
Nettoyer les surfaces d'appui avant le montage.
Pulire le superfici di montaggio prima del montaggio.
Limpiar las superficies de montaje antes de la instalación.



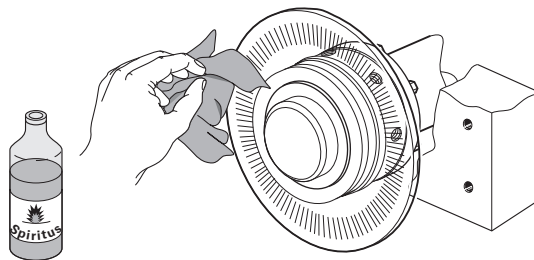
Teilung des Teilkreises bei Bedarf reinigen.

Clean the graduation of the scale, if needed.

Si nécessaire, nettoyer la gravure du disque gradué.

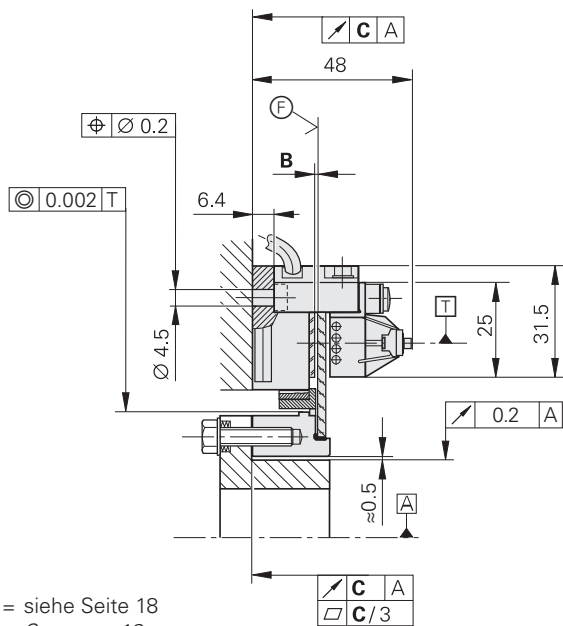
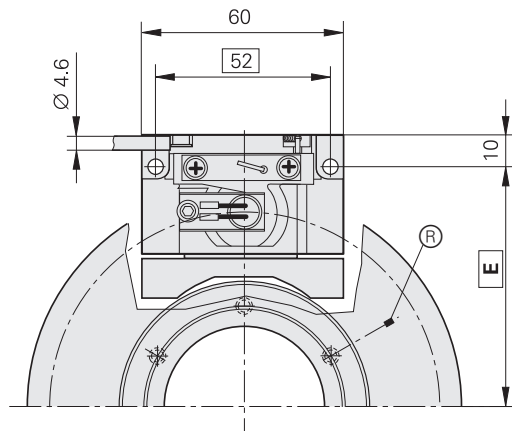
Ev. pulire (la graduazione di misura) il disco graduato.

Limpiar la graduación del disco si se precisa.





Tolerancing ISO 8015
ISO 2768 - m H
< 6 mm: ±0.2 mm



A = Lagerung
Bearing
Roulement
Cuscinetto
Rodamiento

E, **C** = siehe Seite 10+11
See pages 10+11
cf. pages 10+11
vedi pag. 8+9
ver página 10+11

B = siehe Seite 18
See page 18
cf. page 18
vedi pagina 18
ver página 18

B = Montageabstand mit Justierfolie eingestellt
Mounting clearance adjusting with Spacer foil
 Distance fonctionnelle réglée avec cale de réglage
Distanza regolata con la pellicola di centraggio
 Distancia de montaje ajustada mediante lámina espaciadora

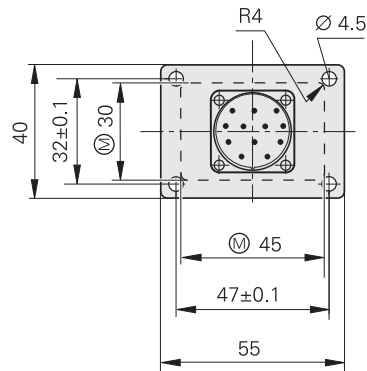
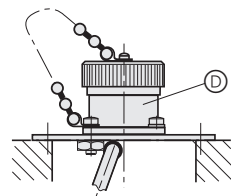
F = Teilungsebene
Graduation side
 Face graduée
Lato della divisione
 Plano de la graduación

M = Montageausschnitt
Mounting aperture
 Section de montage
Sezione di montaggio
 Sección de montaje

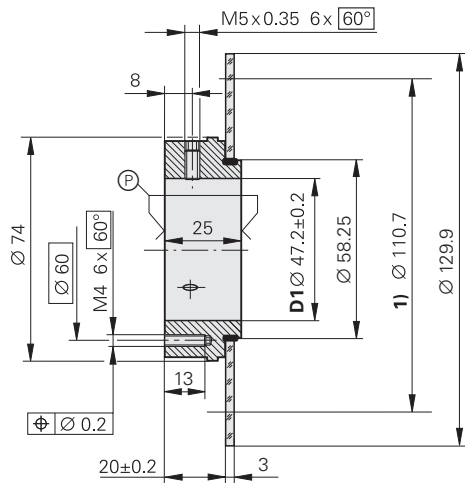
T = Teilung
Graduation
 Gravure
Divisione
 Graduación

D = Flanschdose
Flange socket
 Embase
Preso da pannello
 Conector base

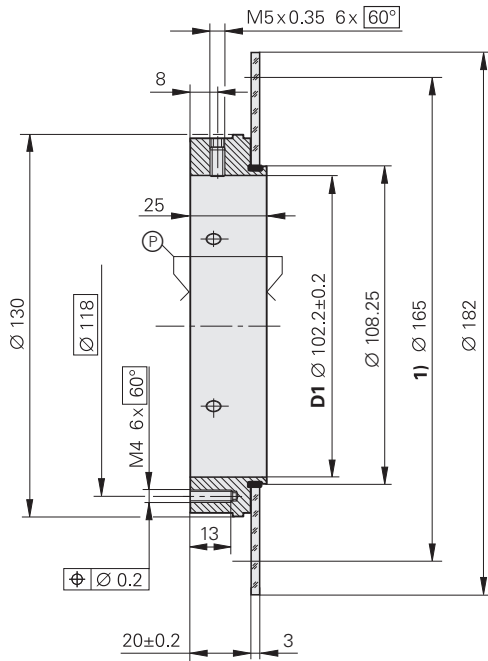
R = Lage der Referenzmarke zu einem Anschraubgewinde $\pm 2^\circ$
Position of reference mark with respect to a fixing thread $\pm 2^\circ$
 Position de la marque de référence par rapport à un trou de fixation $\pm 2^\circ$
Posizione dell'indice di riferimento rispetto a un perno filettato $\pm 2^\circ$
 Posición de la marca de ref. respecto a un taladro de fijación $\pm 2^\circ$



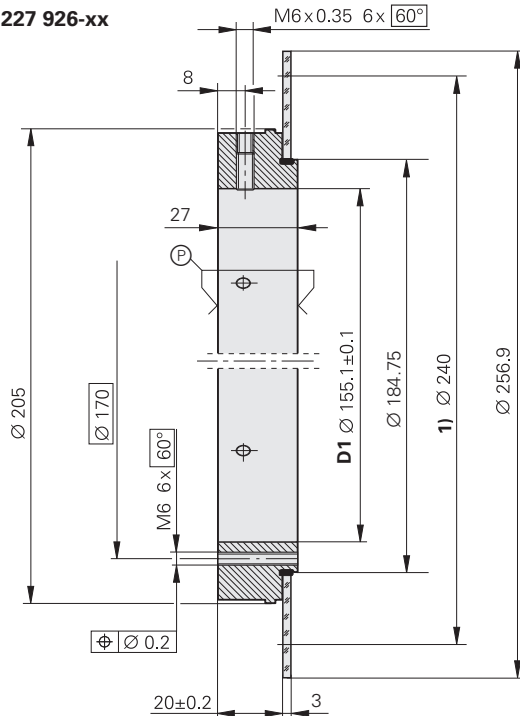
ID 227 930-xx



ID 227 928-xx



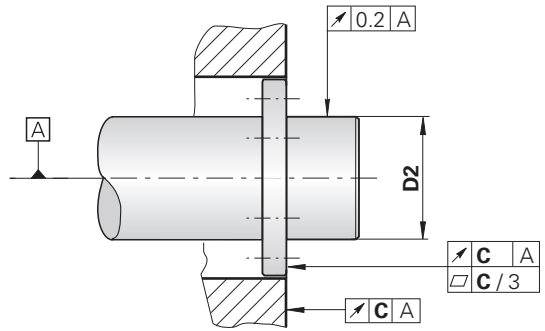
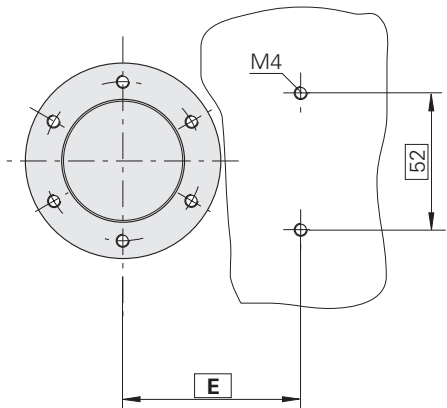
ID 227 926-xx




D1 = Nabeninnendurchmesser
Hub inside diameter
 Diamètre intérieur du moyeu
Diametro interno del mozzo
 Diámetro interior del soporte

P = Montagefläche
Mounting surface
 Surface d'appui
Superficie di montaggio
 Superficie de montaje

1) mittlerer Teilungs - Ø
Mean graduation dia.
 Ø moyen de division
 Ø della traccia centrale
 Ø medio de la división



[A] = Lagerung
 Bearing
 Roulement
 Cuscinetto
 Rodamiento

 D1	D2	<div style="border: 1px solid black; padding: 2px; display: inline-block;">E</div>	Strichzahl <i>Line count</i> Nombre de traits <i>Numero di impulsi</i> Número de impulsos	C
$\varnothing 47.2 \pm 0.2$	$\approx \varnothing 46.5$	67.35	36 000	0.01
			18 000	0.01
			9 000	0.03
$\varnothing 102.2 \pm 0.2$	$\approx \varnothing 101.5$	94.5	36 000	0.02
			18 000	0.02
			9 000	0.03
$\varnothing 155.1 \pm 0.1$	$\approx \varnothing 154.5$	132	36 000	0.02
			18 000	0.03
			9 000	0.03

Systemgenauigkeit Δf
System accuracy Δf
Précision du système Δf
Accuratezza del sistema Δf
Precisión del sistema Δf

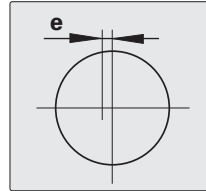
Worst case: $\Delta\varphi_{wc} = \Delta\varphi_t + \Delta\varphi_e + \Delta\varphi_u$

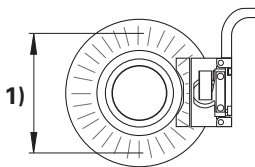
2σ (Sigma): $\Delta\varphi_{2\sigma} = \sqrt{(\Delta\varphi_t + \Delta\varphi_e)^2 + (\Delta\varphi_u)^2}$

$\Delta\varphi_t$ = Genauigkeit der Teilung
Accuracy of the graduation
Précision de la gravure
Accuratezza del nastro
Precisión de la graduación

$\Delta\varphi_e$ = Abweichung durch Exzentrizität **e** (Montage)
*Error due to eccentricity **e** (mounting)*
Ecart du à l'excentricité **e** (montage)
*Errore dovuto ad eccentricità **e** (montaggio)*
Desviación debida a excentricidad **e** (montaje)

$\Delta\varphi_u$ = Abweichung innerhalb einer Signalperiode
Error within one signal period
Ecart à l'intérieur d'une période de signal
Errore minore di un periodo
Desviación dentro de un periodo de señal





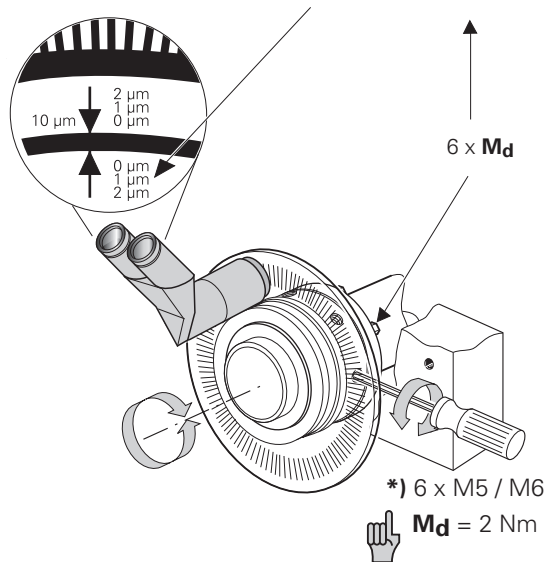
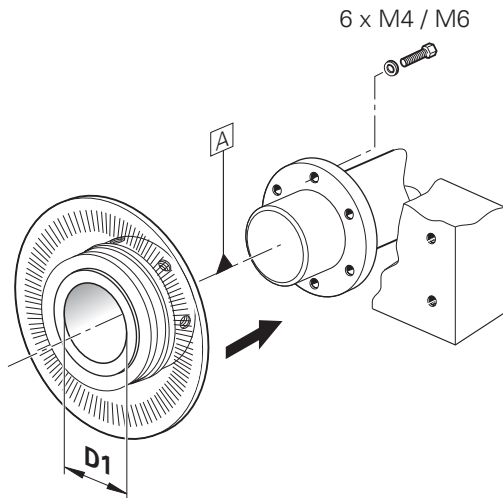
1) = mittlerer Teilungs - Ø
Mean graduation dia.
 Ø moyen de division
 Ø della traccia centrale
 Ø medio de la división

Z = Strichzahl
Line count
 Nombre de traits
 Numero di linee
 Número de impulsos

1)	Z	$\Delta\varphi_{wc}$ ($e=1\mu m$)	$\Delta\varphi_{2\sigma}$ ($e=1\mu m$)	$\Delta\varphi_t$	$\Delta\varphi_e$ ($e=1\mu m$)	$\Delta\varphi_u$
Ø 110.7	36 000	7.9"	7.4"	± 3.7"	± 3.7"	≤ ± 0.5"
	18 000	8.4"	7.5"	± 3.7"	± 3.7"	≤ ± 1"
	9 000	9.4"	7.7"	± 3.7"	± 3.7"	≤ ± 2"
Ø 165	36 000	5.5"	5.0"	± 2.5"	± 2.5"	≤ ± 0.5"
	18 000	6.0"	5.1"	± 2.5"	± 2.5"	≤ ± 1"
	9 000	7.0"	5.4"	± 2.5"	± 2.5"	≤ ± 2"
Ø 240	36 000	3.9"	3.5"	± 1.7"	± 1.7"	≤ ± 0.5"
	18 000	4.4"	3.6"	± 1.7"	± 1.7"	≤ ± 1"
	9 000	5.4"	4.0"	± 1.7"	± 1.7"	≤ ± 2"

Zentrierung optisch
Optical centering
 Centrage optique
 Centratúra ottica
 Centraje óptico

6 x M4	D1 = Ø 47.2	± 1 µm	M_d = 3 Nm
6 x M4	D1 = Ø 102.2	± 1 µm	M_d = 3 Nm
6 x M6	D1 = Ø 155.1	± 1 µm	M_d = 8 Nm



oder / or / ou / oppure / o

Zentrierung mit Messuhr

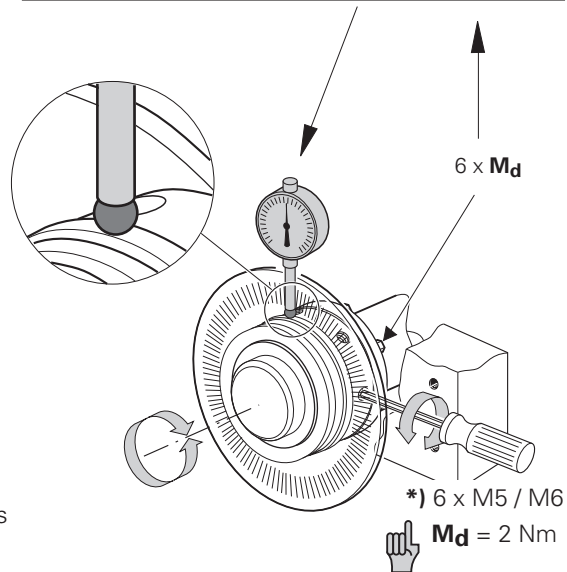
Centering with dial gauge

Centrage avec comparateur

Centratura con comparatore

Centraje con reloj comparador

6 x M4	D1 = Ø 47.2	± 1 µm	M_d = 3 Nm
6 x M4	D1 = Ø 102.2	± 1 µm	M_d = 3 Nm
6 x M6	D1 = Ø 155.1	± 1 µm	M_d = 8 Nm



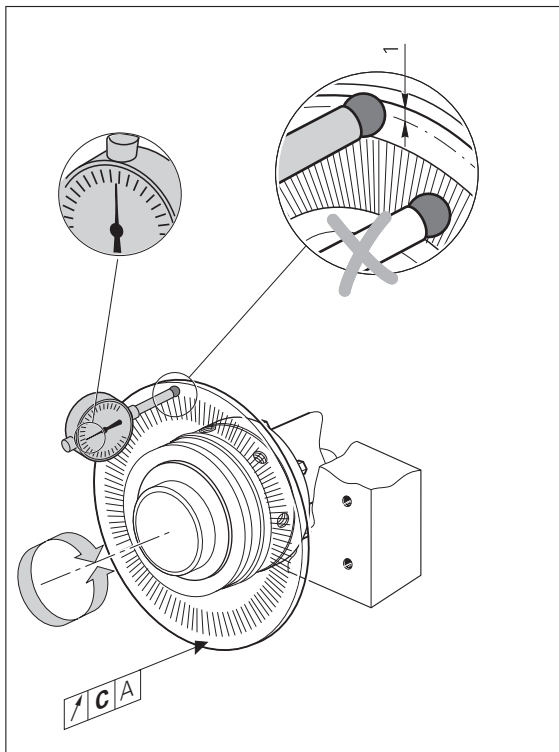
*) nach Zentrierung Schrauben entfernen

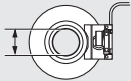
after centering remove screws

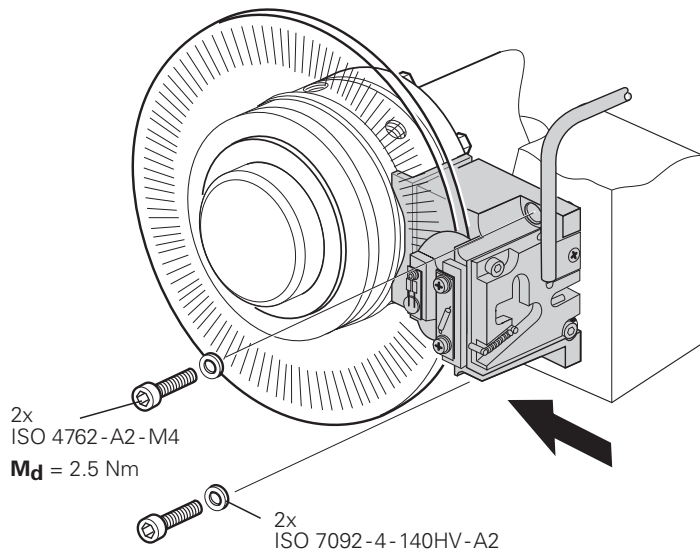
une fois le centrage effectué, retirer les vis

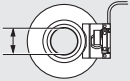

dopo il centraggio togliere le viti

después de centrar retirar tornillos

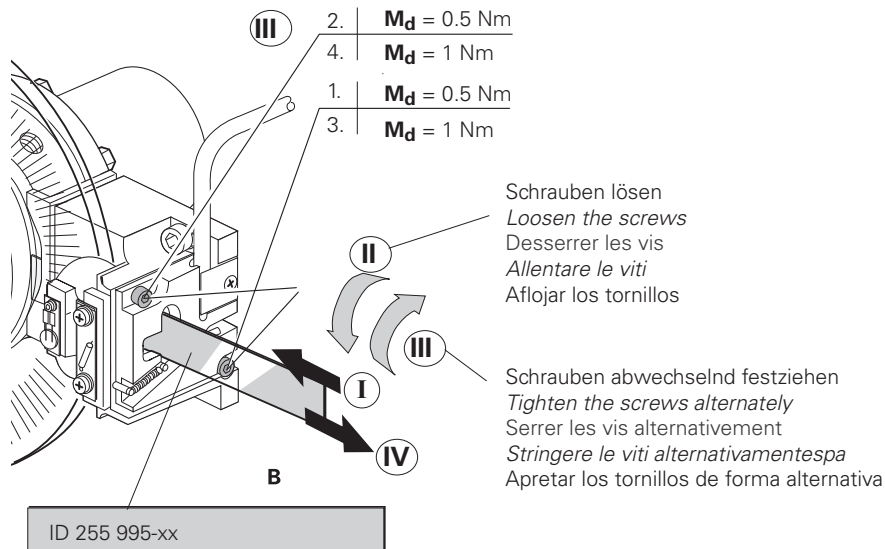


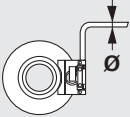



 D1	Strichzahl <i>Line count</i> Nombre de traits Numero di impulsi Número de impulsos	C
$\varnothing 47.2 \pm 0.2$	36 000	0.01
	18 000	0.01
	9 000	0.03
$\varnothing 102.2 \pm 0.2$	36 000	0.02
	18 000	0.02
	9 000	0.03
$\varnothing 155.1 \pm 0.1$	36 000	0.02
	18 000	0.03
	9 000	0.03

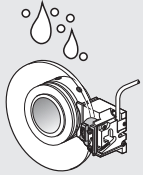


D1 	Strichzahl <i>Line count</i> Nombre de traits Numero di impulsi Número de impulsos	Justierfolie <i>Spacer foil</i> Cale de réglage Dima die montaggio Hoja separadora 
$\varnothing 47.2 \pm 0.2$	36 000	0.08 \pm 0.01
	18 000	0.05 \pm 0.01
	9 000	0.12 \pm 0.03
$\varnothing 102.2 \pm 0.2$	36 000	0.20 \pm 0.02
	18 000	0.08 \pm 0.02
	9 000	0.12 \pm 0.03
$\varnothing 155.1 \pm 0.1$	36 000	0.05 \pm 0.02
	18 000	0.12 \pm 0.03
	9 000	0.12 \pm 0.03


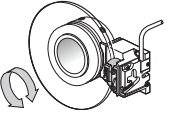
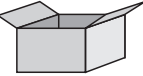
- I** **Achtung:** Justierfolie **B** zwischen Strichplatte und Teilkreis schieben
CAUTION: Slide spacer foil **B** between the reticle and the circular scale
Attention: Glisser la cale de réglage **B** entre le réticule de balayage et le disque gradué
Attenzione: far scivolare la pellicola di centratura tra testina e disco graduato
Atención: Deslizar la lámina separadora **B** entre la retícula y el disco graduado

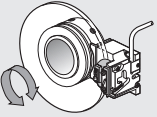



	 $T \geq -40\text{ °C}$ (-40 °F)	 $T \geq -10\text{ °C}$ (14 °F)
Ø 4.6 mm	$R_1 \geq 10\text{ mm}$	$R_2 \geq 50\text{ mm}$
Ø 8 mm 	$R_1 \geq 40\text{ mm}$	$R_2 \geq 100\text{ mm}$



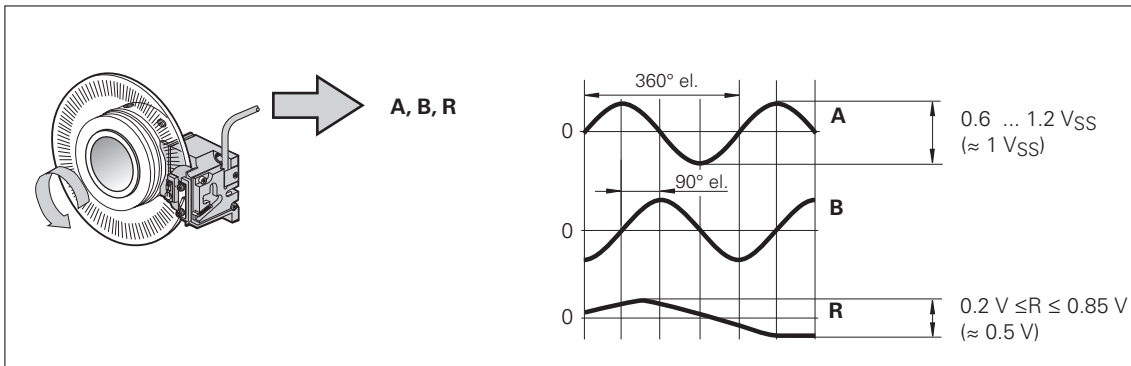
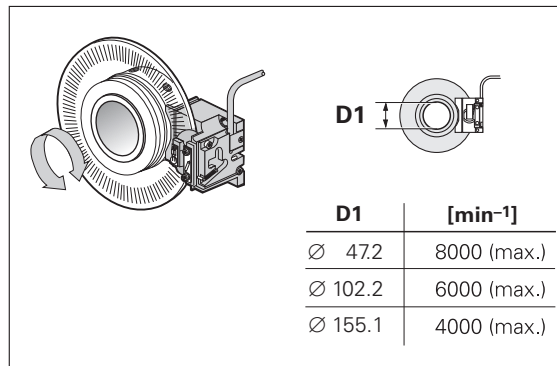
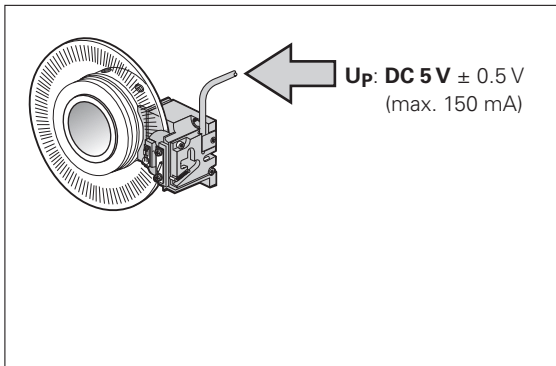
IP 00
EN 60529

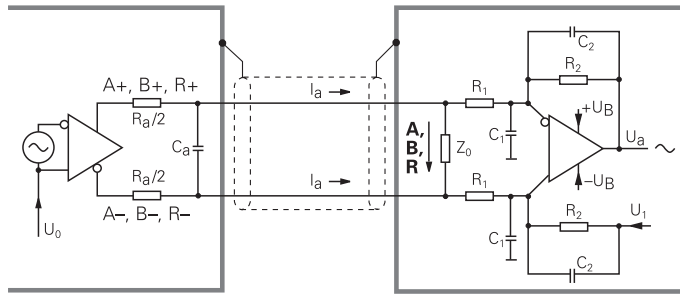
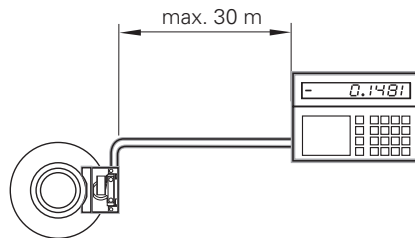
 <p>°C (°F)</p>	 <p>0 ... 50 °C (32 ... 122 °F)</p>
	 <p>-30 ... 80 °C (-22 ... 176 °F)</p>



D1 

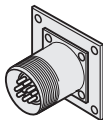
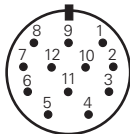
D1	I	[kg m²]
Ø 47.2	0.62	10 ⁻³
Ø 102.2	3.7	10 ⁻³
Ø 155.1	26	10 ⁻³





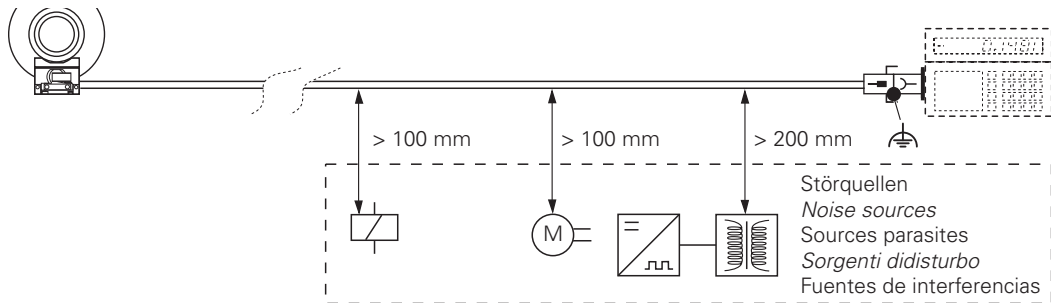
$R_a < 100 \Omega$
 $C_a < 50 \text{ pF}$
 $\Sigma I_a < 1 \text{ mA}$
 $U_0 = 2.5 \text{ V} \pm 0.5 \text{ V}$

$Z_0 = 120 \Omega$
 $U_1 \approx U_0$



Außenschirm auf Gehäuse
External shield on housing
 Blindage externe sur boîtier
 Schermo esterno sulla carcassa
 Blindaje externo a carcasa

5	6	8	1	3	4	12	10	2	11	7	/
A		B		R		5V U _P	0V U _N	5V sensor	0V sensor	/	/
+	-	+	-	+	-						
braun <i>brown</i> brun <i>marrone</i> marrón	grün <i>green</i> vert <i>verde</i> verde	grau <i>gray</i> gris <i>grigio</i> gris	rosa <i>pink</i> rose <i>rosa</i> rosa	rot <i>red</i> rouge <i>rosso</i> rojo	schwarz <i>black</i> noir <i>nero</i> negro	braun/grün <i>brown/green</i> brun/vert <i>marrone/verde</i> marrón/verde	weiß/grün <i>white/green</i> blanc/vert <i>bianco/verde</i> blanco/verde	blau <i>blue</i> bleu <i>azzurro</i> azul	weiß <i>white</i> blanc <i>bianco</i> blanco	violett <i>violet</i> violet <i>viola</i> violeta	gelb <i>yellow</i> jaune <i>giallo</i> amarillo



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