

# **SUMTAK** **PULSCALE®**

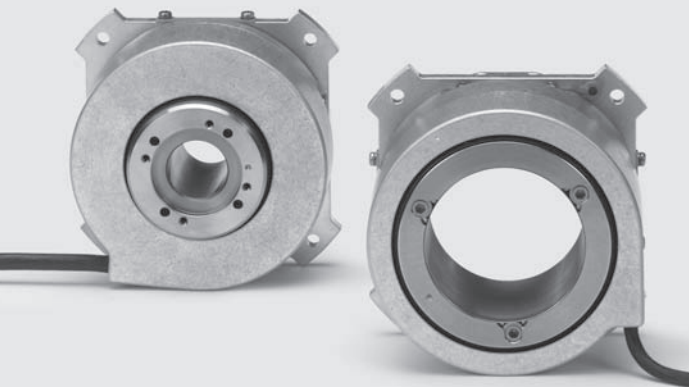
取付説明書

Montageanleitung

*Mounting Instructions*

**ART 830S EnDat02**  
**ART 820S EnDat22**

1/2007



一般的な注意事項

Allgemeine Warnhinweise

General warning notes



内径φ20mm型の外形及び取付け寸法

Abmessungen und Anbau Hohlwelle Ø 20 mm

Dimensions and mounting for hollow shaft Ø 20 mm



エンドフェース取付け方法

Stirnseitige Wellenankopplung

Shaft coupling on end face



内径φ50mm型の外形及び取付け寸法

Abmessungen und Anbau Hohlwelle Ø 50 mm

*Dimensions and mounting for hollow shaft Ø 50 mm*



電氣的仕様

Elektrische und Technische Kennwerte

*Electrical data and technical specifications*

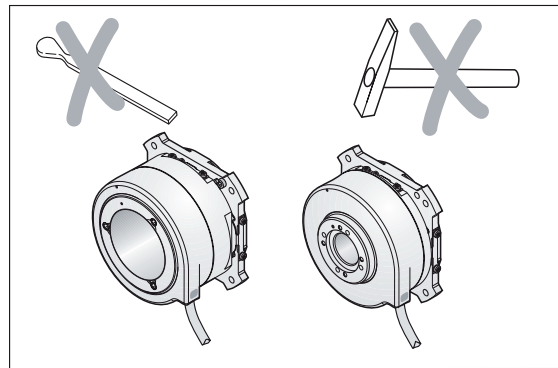
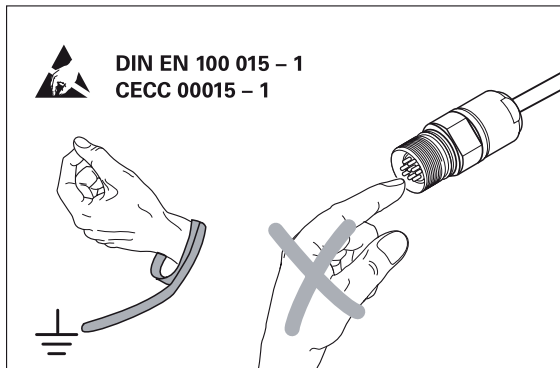
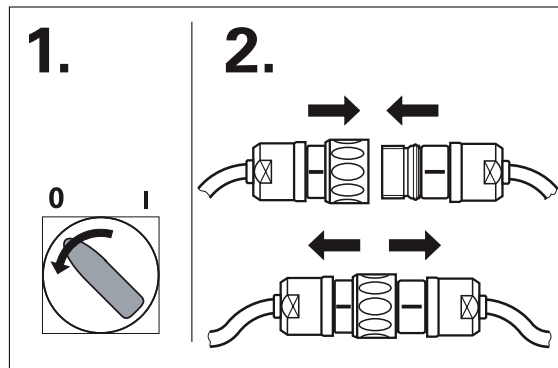




単位: mm

Maße in mm

Dimensions in mm

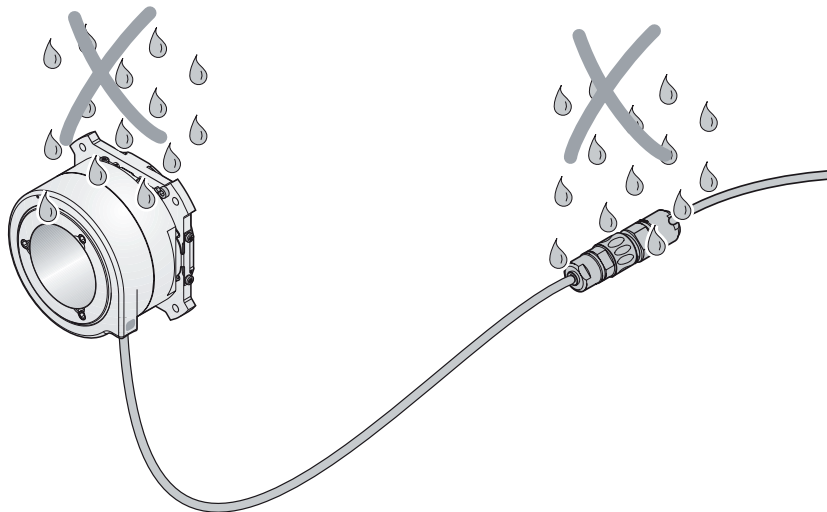




エンコーダとコネクタが直接、水や油等が掛からないようにしてください！

Der direkte Kontakt von Flüssigkeiten mit Messgerät und Steckverbinder ist zu vermeiden!

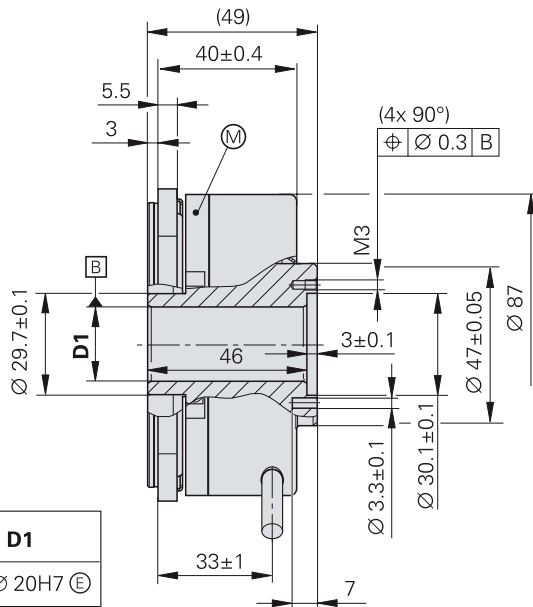
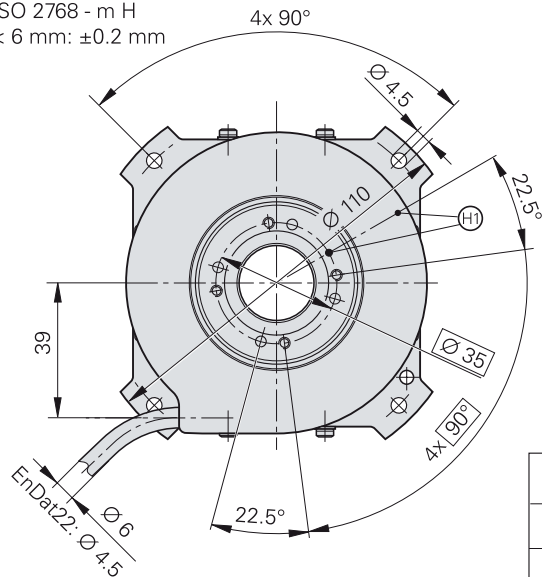
Avoid direct contact of fluids with the encoder and connector!



mm



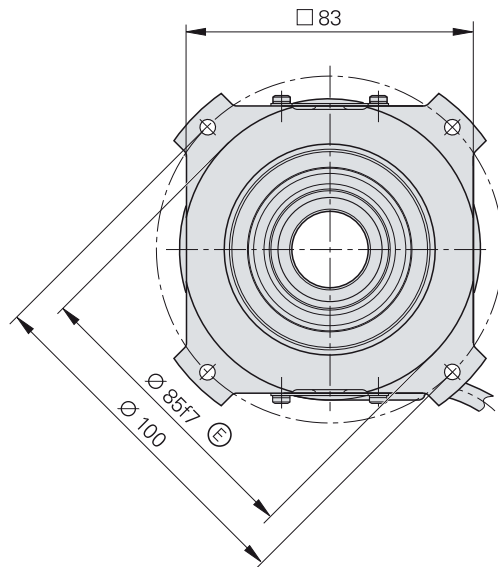
公差 ISO 8015  
Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm: ±0.2 mm



D1
Ø 20H7 E
Ø 22H7 E

Ⓜ = 動作温度測定点  
Meßpunkt Arbeitstemperatur  
Operating temperature measuring point

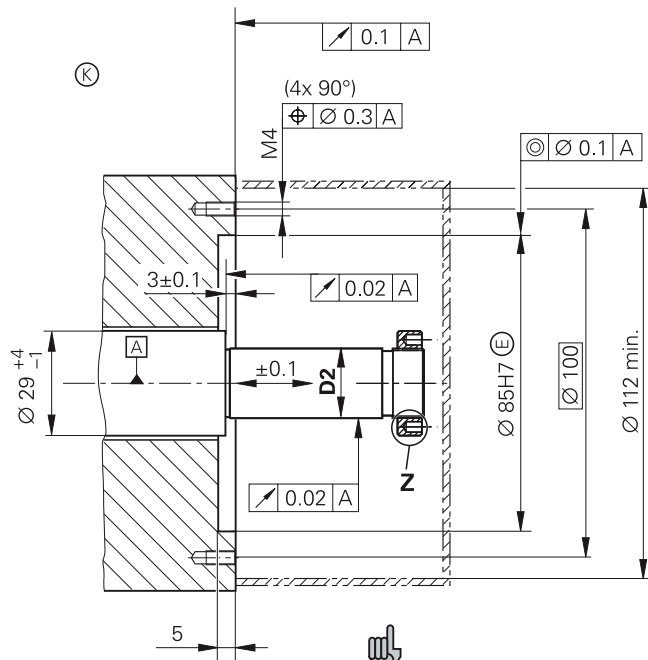
Ⓜ1 = 0° ポジションインデックス ±15°  
Nullposition ±15°  
Zero position ±15°



mm



公差 ISO 8015  
Tolerancing ISO 8015  
ISO 2768 - m H



EN 60 529

**D2**

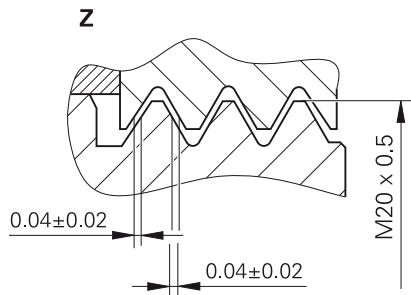
$\varnothing 20g7$  (E)

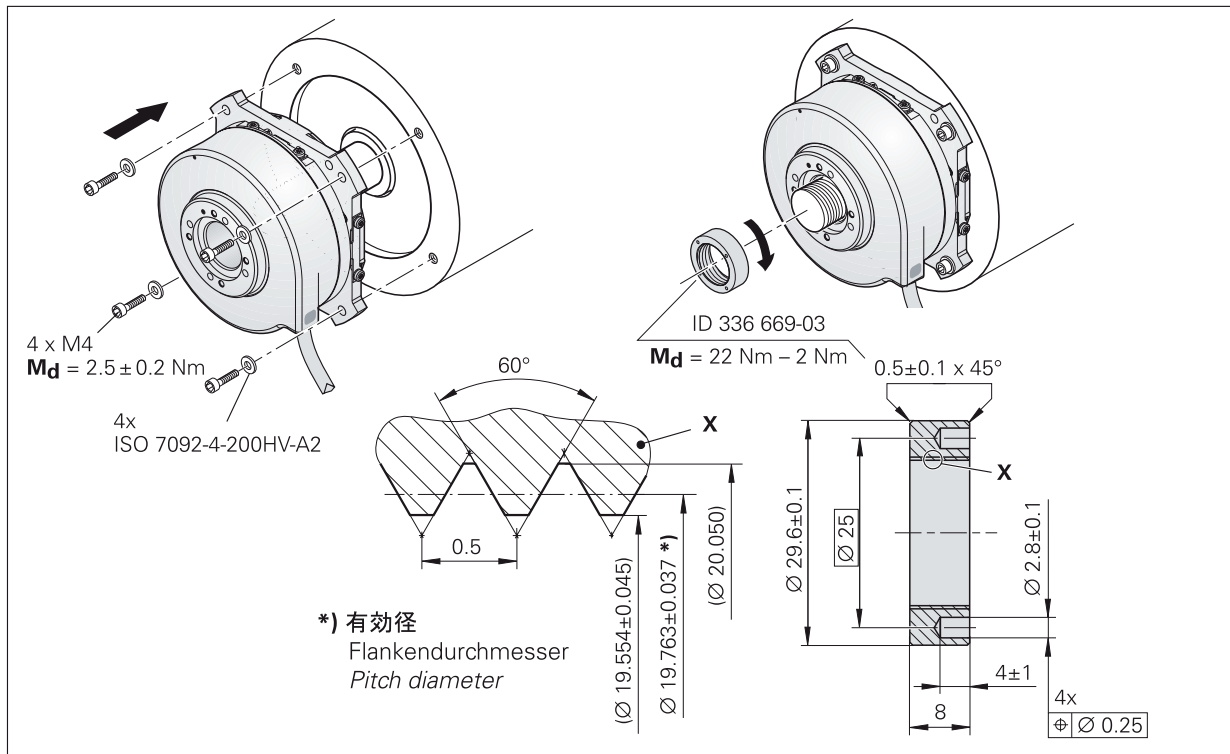
$\varnothing 22g7$  (E)

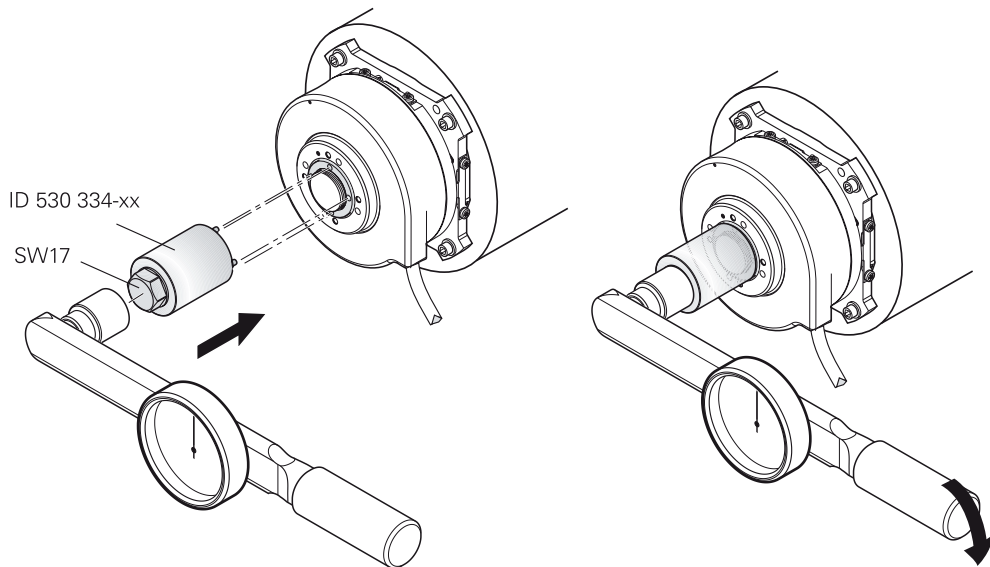


Ⓚ = 必要な取付け寸法  
Kundenseitige Anschlussmaße  
*Required mating dimensions*

Ⓐ = 軸受  
Lagerung  
*Bearing*



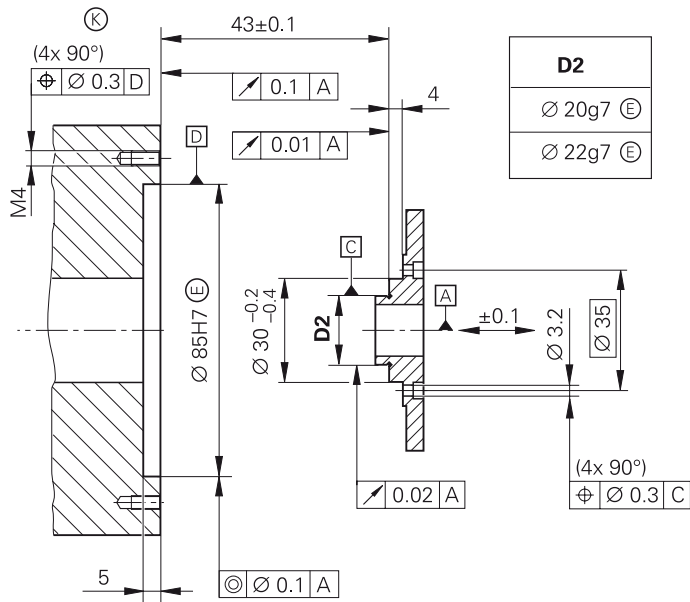




$M_d = 22 \text{ Nm} - 2 \text{ Nm}$

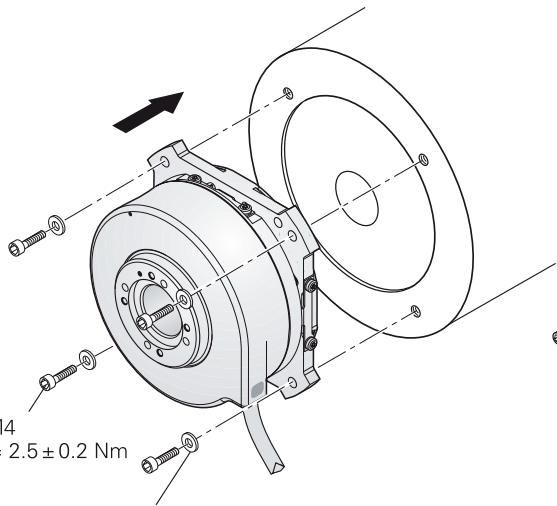
エンドフェース取付方法について  
**Stirnseitige Wellenankopplung**  
**Shaft coupling on end face**

mm  
 公差 ISO 8015  
 Tolerancing ISO 8015  
 ISO 2768 - m H



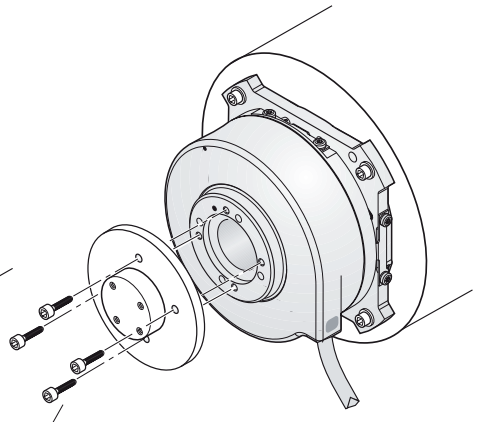
**A** = 軸受  
 Lagerung  
 Bearing

**K** = 必要な取付け寸法  
 Kundenseitige Anschlussmaße  
 Required mating dimensions



4 x M4  
**M<sub>d</sub>** = 2.5 ± 0.2 Nm

4x  
ISO 7092-4-200HV-A2

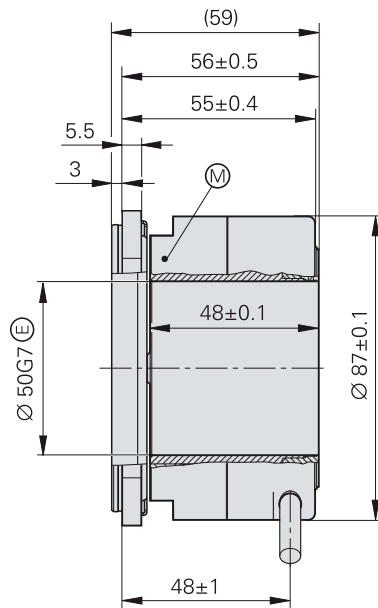
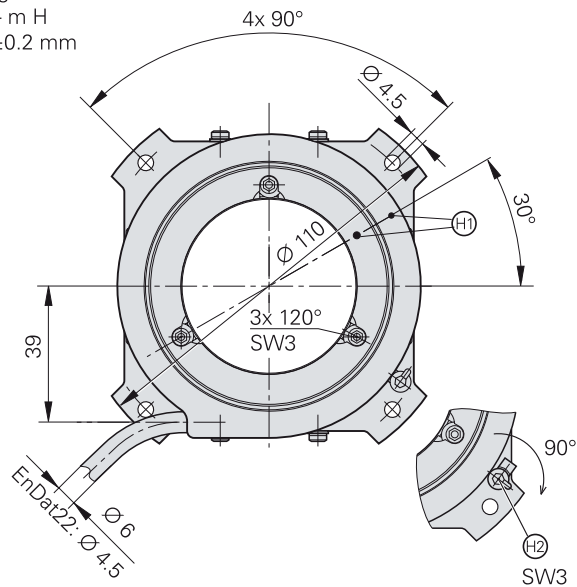


4 x M3  
**M<sub>d</sub>** = 1 ± 0.1 Nm

mm



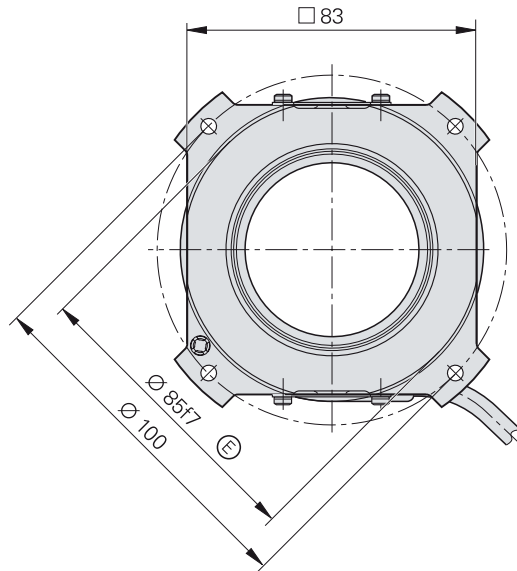
公差 ISO 8015  
Tolerancing ISO 8015  
ISO 2768 - m H  
< 6 mm:  $\pm 0.2$  mm



Ⓜ = 動作温度測定点  
Meßpunkt Arbeitstemperatur  
*Operating temperature measuring point*

Ⓜ1 = 0° ポジションインデックス ±15°  
Nullposition ±15°  
*Zero position ±15°*

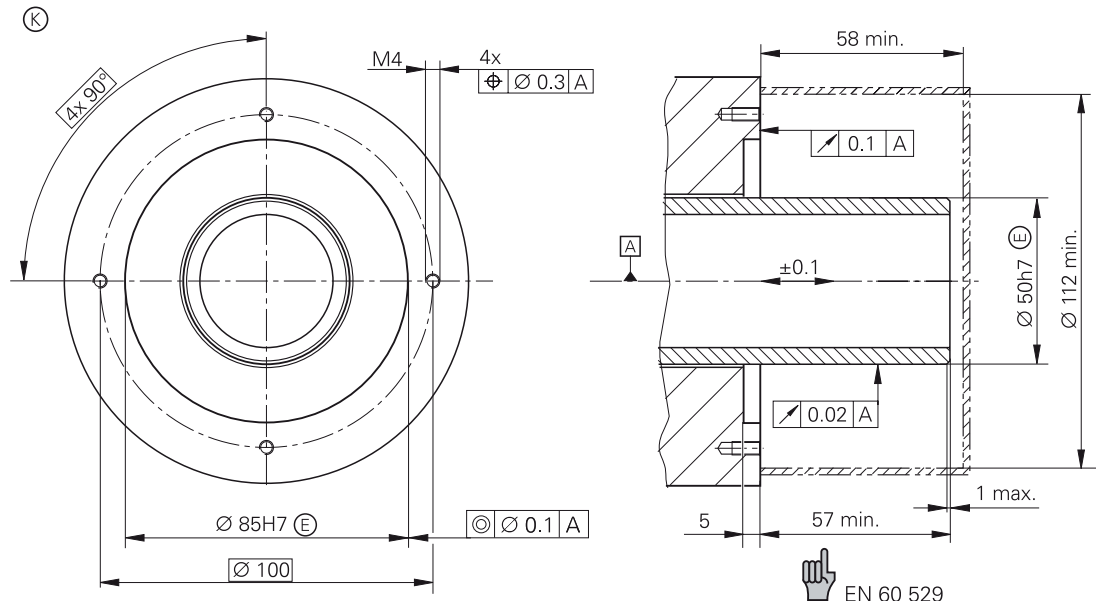
Ⓜ2 = 使用前に取付け治具をはずしてください  
Vor Inbetriebnahme Montagehilfe freidrehen.  
*Release the mounting aid before initial operation.*



mm  
 公差 ISO 8015  
 Tolerancing ISO 8015  
 ISO 2768 - m H

Ⓚ = 必要な取付け寸法  
 Kundenseitige Anschlussmaße  
 Required mating dimensions

ⓐ = 軸受  
 Lagerung  
 Bearing

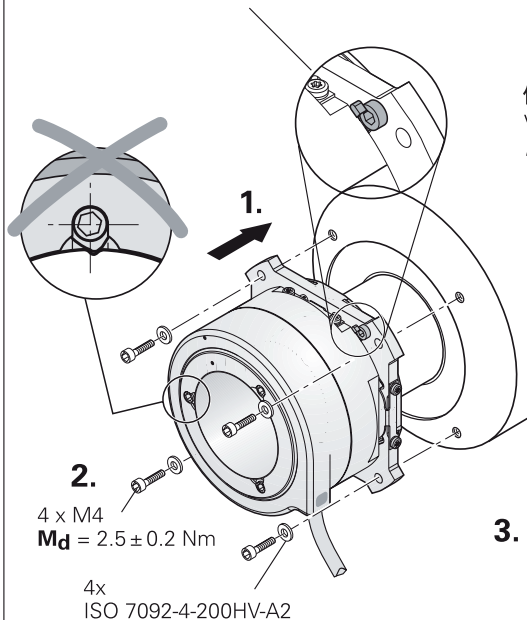




## 取付公差 $2.5 \pm 0.3 \text{ mm}$ を確保する治具

Montagehilfe zur Einhaltung des Montagemaßes  $2.5 \pm 0.3 \text{ mm}$ .

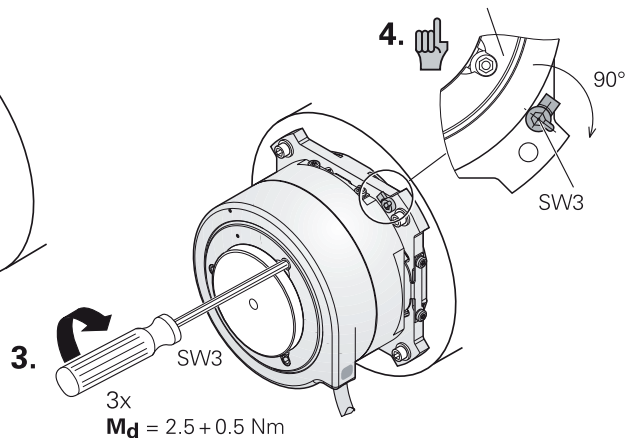
Mounting aid ensures compliance with mounting dimension  $2.5 \pm 0.3 \text{ mm}$ .



使用前に取付治具をはずしてください

Vor Inbetriebnahme Montagehilfe freidrehen.

Release the mounting aid before initial operation.

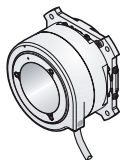
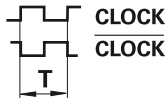




# EnDat02 (インクリメンタル信号出力付) (mit Inkrementalsignalen) (with incremental signals)



RS-485



**Up = 3.6 V – 5.25 V**

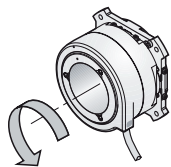
(max. 200 mA)

エンコーダ側 , am Gerät, at encoder.



EN 50 178/4.98; 5.2.9.5

IEC 364-4-41: 1992; 411(PELV/SELV)

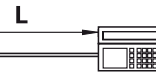


RS-485

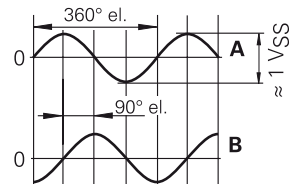
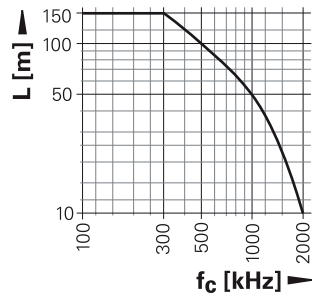


A · 16384/360°

B · 16384/360°



$$f_c = \frac{1}{T}$$

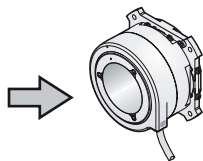
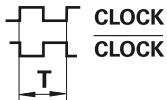




**EnDat22** (インクリメンタル信号出力無し)  
(ohne Inkrementalsignale)  
(without incremental signals)



**RS-485**



**U<sub>p</sub> = 3.6 V – 5.25 V**

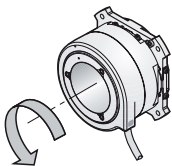
(max. 200 mA)

エンコーダ側 , am Gerät, *at encoder.*

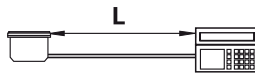


EN 50 178/4.98; 5.2.9.5  
IEC 364-4-41: 1992; 411(PELV/SELV)

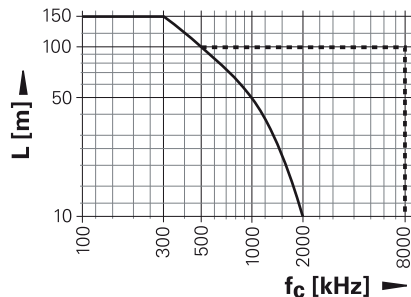
(siehe, see, voir, vedi, véase  
HEIDENHAIN D 231 929)



**RS-485**



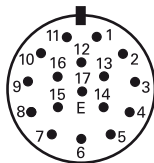
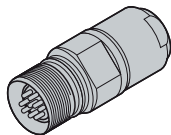
$$f_c = \frac{1}{T}$$



伝送遅延補正無し  
ohne Laufzeitkompensation  
*without delay compensation*

.....  
伝送遅延補正有り  
mit Laufzeitkompensation  
*with delay compensation*

## EnDat02



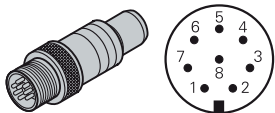
シールドはコネクタハウジングに接続  
 Außenschirm auf Gehäuse  
 External shield on housing

7	1	10	4	15	16	12	13	14	17	8	9
Up	Up sensor	0V	0V sensor	A+	A-	B+	B-	DATA	$\overline{\text{DATA}}$	CLOCK	$\overline{\text{CLOCK}}$
●	●	●	●								
br/gn BN/GN	bl BL	ws/gn WH/GN	ws WH	gn/sw GN/BK	ge/sw YL/BK	bl/sw BL/BK	rt/sw RD/BK	gr GY	rs PK	vio VI	ge YL

センサ線は内部にて、それぞれの電源線と接続されている。 UP=電源  
 Die Sensorleitung ist intern mit der Versorgungsleitung verbunden.  
 The sensor line is connected internally with the power supply.

空きピン及び未使用線は使用しないこと！  
 Nichtverwendete Pins oder Litzen dürfen nicht belegt werden!  
 Vacant pins or wires must not be used!

## EnDat22

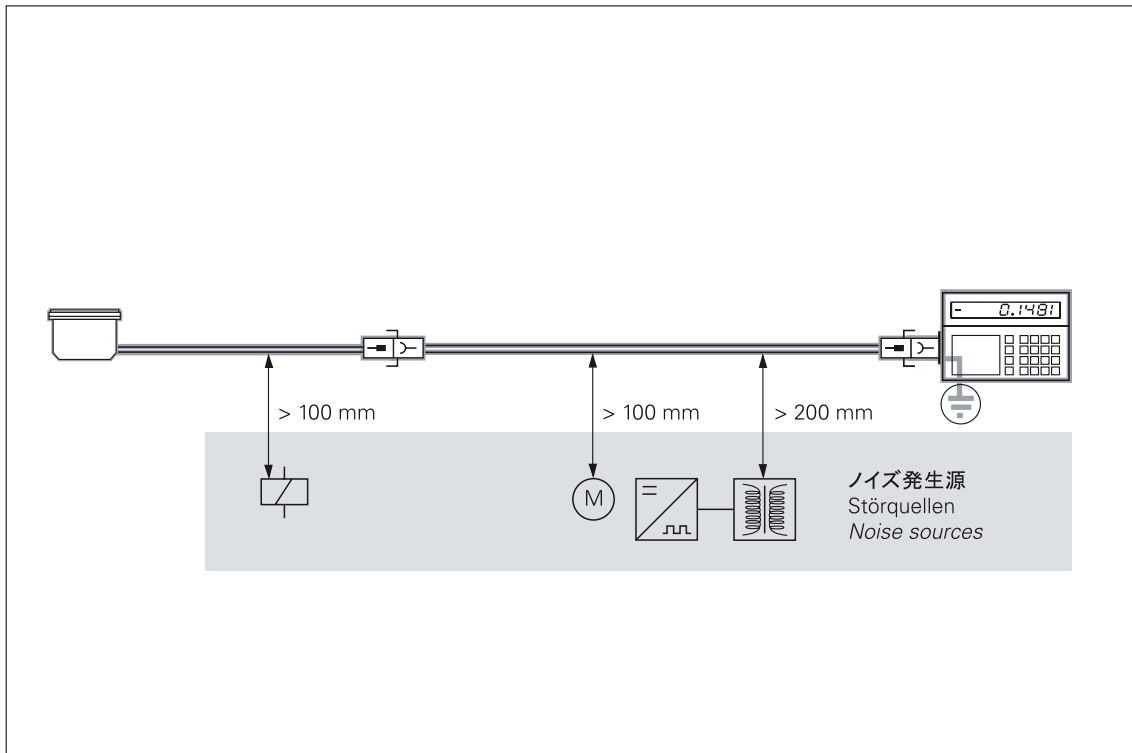


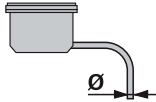
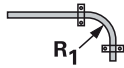
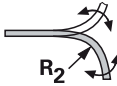

シールドはコネクタハウジングに接続  
Außenschirm auf Gehäuse  
*External shield on housing*

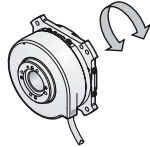
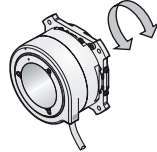
2	8	1	5	3	4	7	6
<b>U<sub>P</sub><sup>1)</sup></b>	<b>U<sub>P</sub></b>	<b>0V<sup>1)</sup></b>	<b>0V</b>	<b>DATA</b>	<b><math>\overline{\text{DATA}}</math></b>	<b>CLOCK</b>	<b><math>\overline{\text{CLOCK}}</math></b>
bl <i>BL</i>	br/gn <i>BN/GN</i>	ws <i>WH</i>	ws/gn <i>WH/GN</i>	gr <i>GY</i>	rs <i>PK</i>	vio <i>VI</i>	ge <i>YL</i>

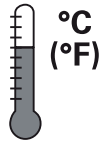
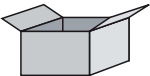
### 1) 並列電源線用

für parallel geführte Versorgungsleitungen  
*For parallel supply lines*



	 $T \geq -40\text{ °C}$ $(-40\text{ °F})$	 $T \geq -10\text{ °C}$ $(14\text{ °F})$
<b>Ø 4.5 mm</b>	$R_1 \geq 10\text{ mm}$	$R_2 \geq 50\text{ mm}$
<b>Ø 6 mm</b>	$R_1 \geq 20\text{ mm}$	$R_1 \geq 75\text{ mm}$
<b>Ø 8 mm</b> 	$R_1 \geq 40\text{ mm}$	$R_2 \geq 100\text{ mm}$

	<b><math>M_d \leq 0.10\text{ Nm}</math></b> (20 °C) <b><math>I = 138 \cdot 10^{-6}\text{ kgm}^2</math></b>
	<b><math>M_d \leq 0.15\text{ Nm}</math></b> (20 °C) <b><math>I = 215 \cdot 10^{-6}\text{ kgm}^2</math></b>

	 $-30 \dots 80\text{ °C}$ $(-22 \dots 176\text{ °F})$
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# SUMTAK PULSCALE®

## サムタク株式会社

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