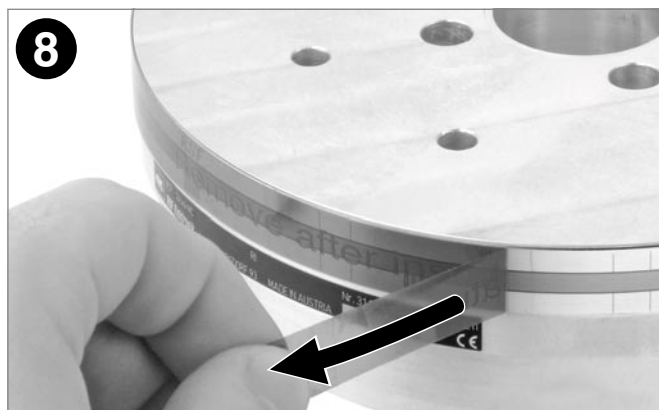
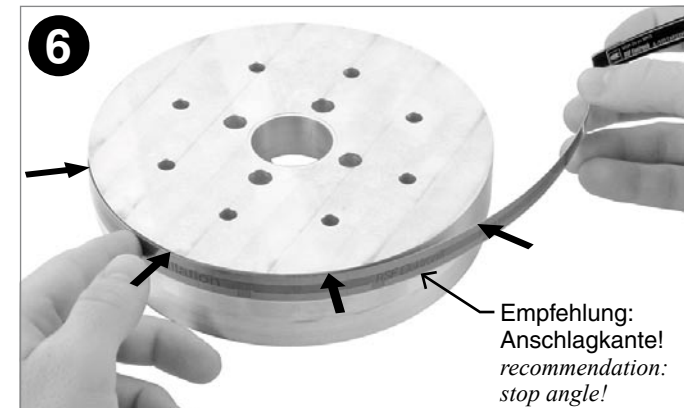
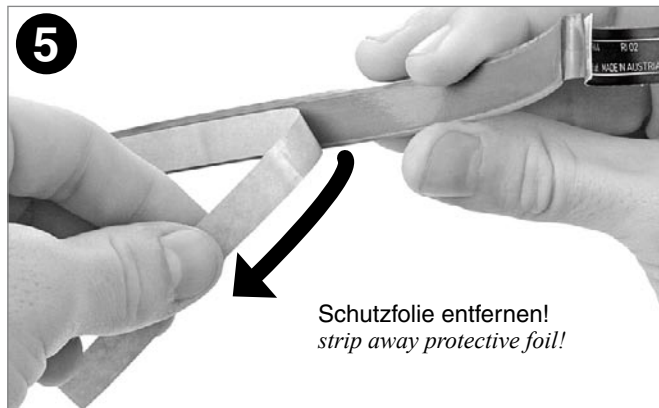
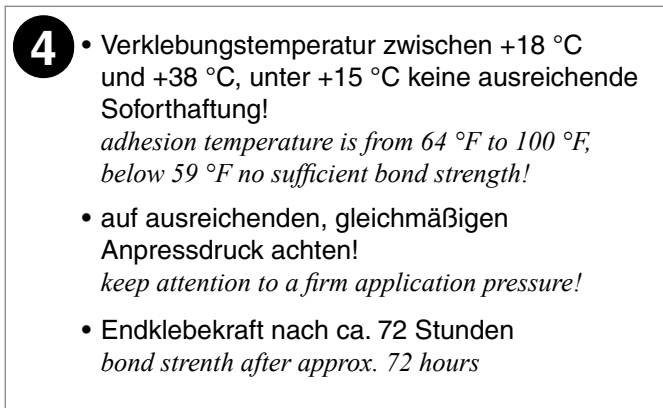
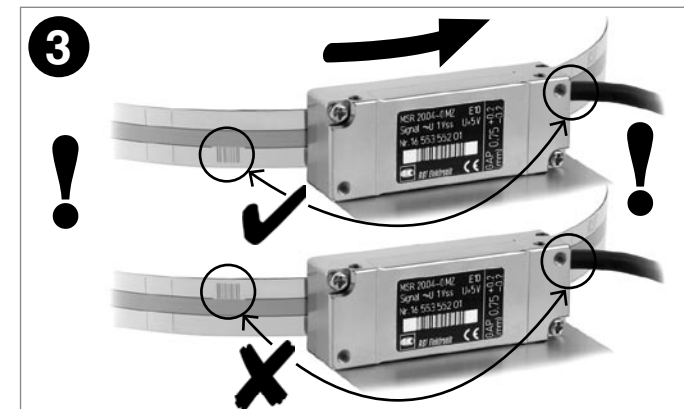
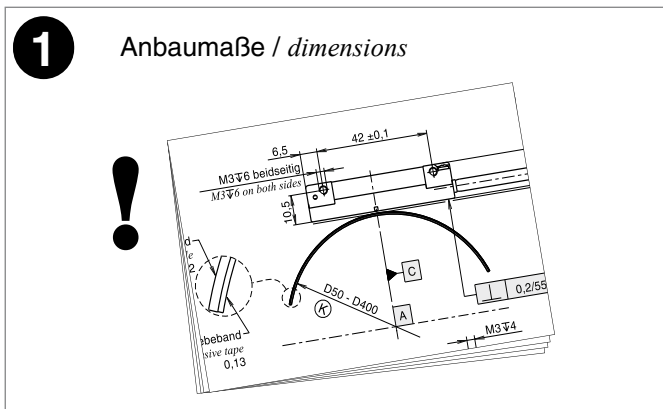
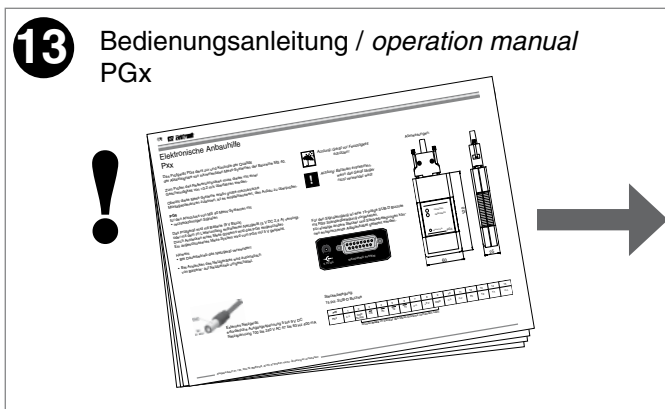
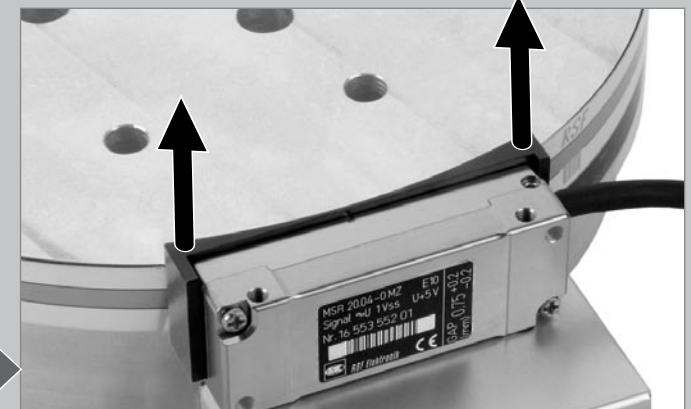
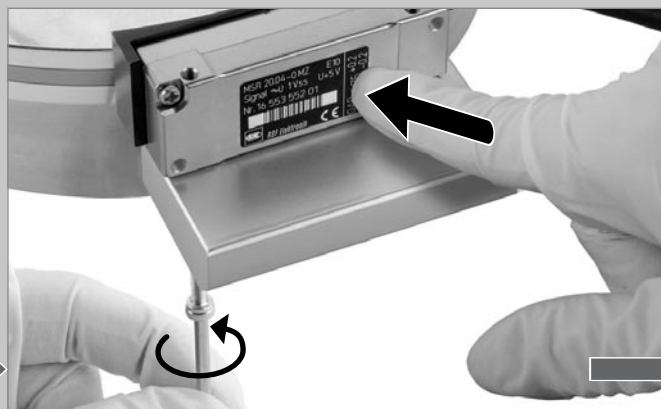
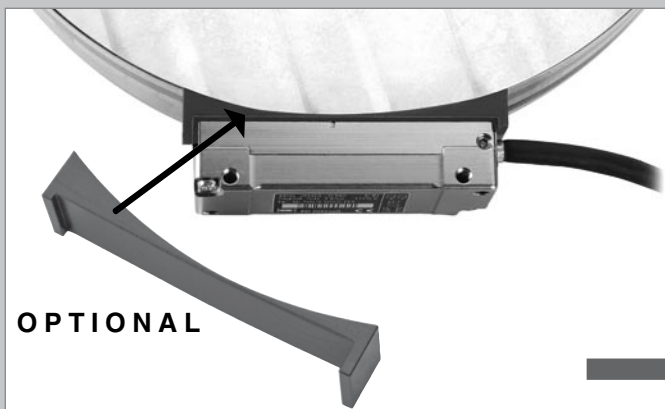
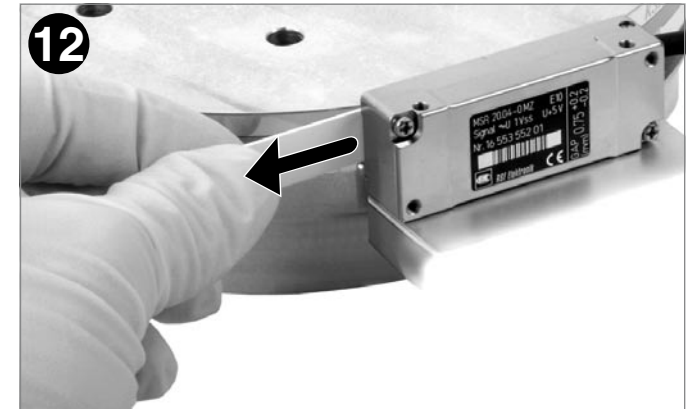
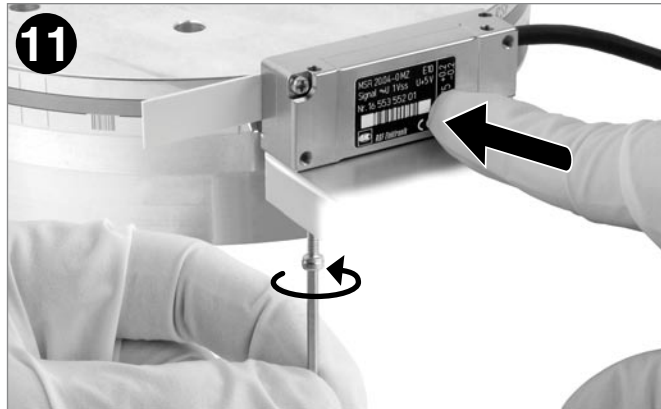
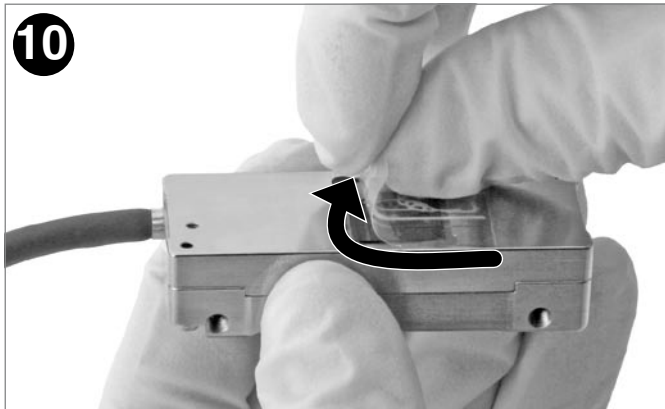


Montageanleitung / *Mounting Instruction*

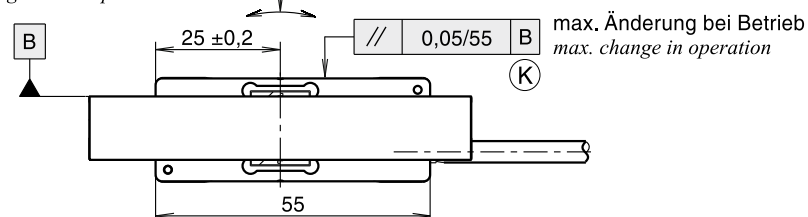
MSR 20 MKS Stahlmaßband mit aufgezogenem Klebeband / *steel tape scale with adhesive tape*



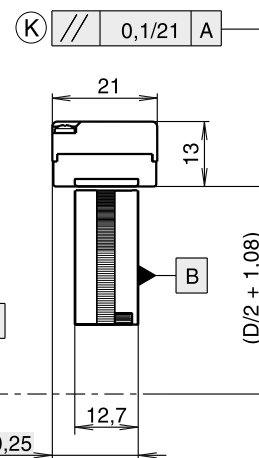
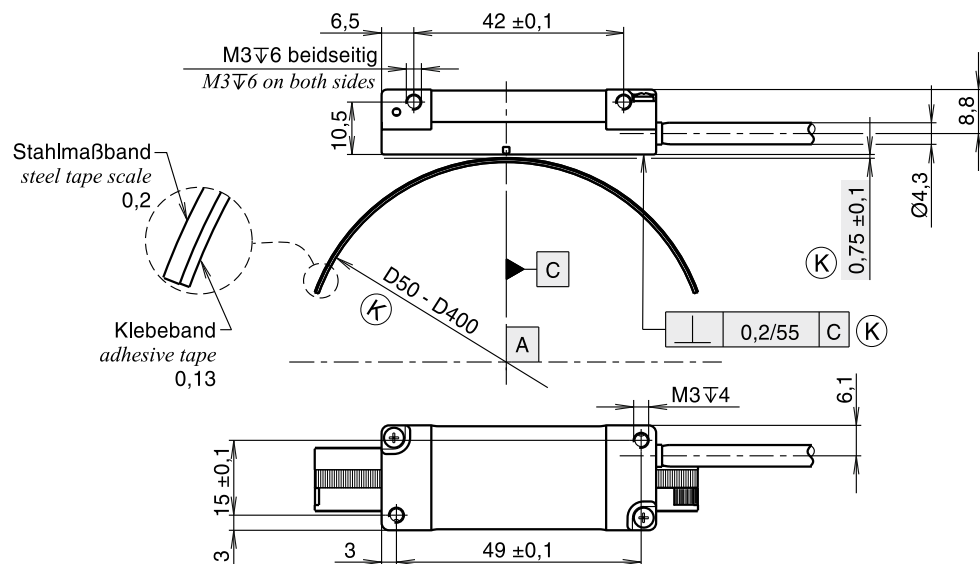
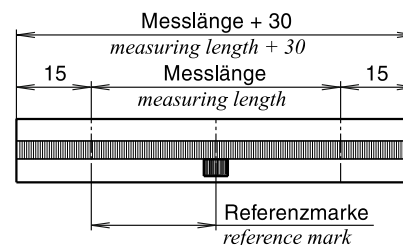




auf max. Signal bzw. RI-Lage einstellen
adjust to max. signal or RI-position



Maßband (gestreckte Länge)
steel scale (stretched length)

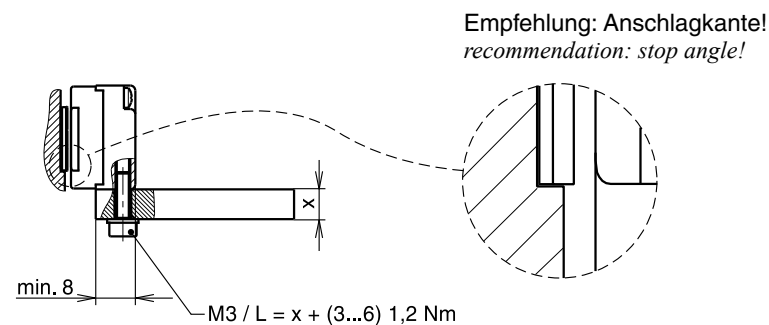
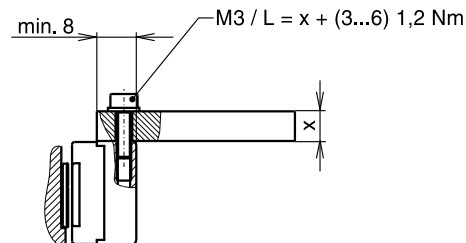
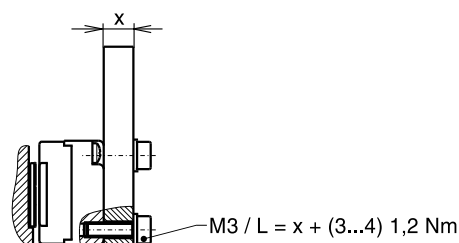


Ⓚ = kundenseitige Anbaumaße
required mating dimensions

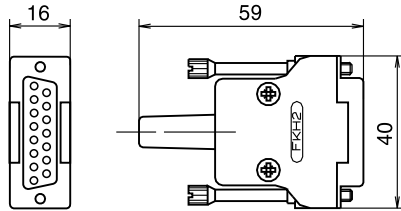
D = Wellendurchmesser
shaft diameter

Referenzmarke / reference mark (RI):
beliebige Position, zusätzliche Referenzmarken
im Abstand von n x 50 mm
any position, additional reference marks
separated by n x 50 mm

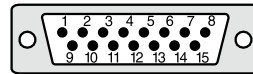
Anbaumöglichkeiten / Mounting possibilities:



Stecker LD15 15-polig Connector LD15 15-pin



PIN Belegung (Sicht auf Stiftseite) Pin out (view on pins)



Steckerbelegung / Connector pin out

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Rechtecksignale über Line Driver <i>Square wave signals via Line Driver</i>	Test	Sensor 0 V	$\overline{U}_s$	$\overline{RI}$	$\overline{T_2}$	$\overline{T_1}$	Sensor +5 V	+5 V	0 V	S1*	S2*	RI	T2	T1	Schirm shield

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Spannungssignale <i>Voltage signals</i>	nc	Sensor 0 V	nc	$\overline{RI}$	$\overline{A_2}$	$\overline{A_1}$	Sensor +5 V	+5 V	0 V	S1*	S2*	RI	A2	A1	Schirm shield

- **Test = Analogsignal-Umschaltung zur Anbaukontrolle**
Bei Anlegen von 5 V an den Testpin werden anstatt der Rechteck-Signale die Testsignale (Differenzstromsignale 11 μ Ass) auf die Signalausgänge geschaltet.

Test = analog signal switch-over for setup

By applying +5 V to the test pin, the test signals (sinusoidal micro-current signals 11 μ App) are switched to the output connector

- **MSR 20:** S1, S2 = Schaltsignale
MSR 20: S1, S2 = switch signals
- * Bei Ausführung ohne Schaltsignale (Version 0) = nc
** version without switch signals (version 0) = nc*
- **Sensor:** Die Sensor-Pins sind im Steckergehäuse auf die jeweilige Spannungsversorgung gebrückt
The sensor-pins are bridged in the chassis with the particular power supply
- **Schirm** ist zusätzlich mit dem Steckergehäuse verbunden
The shield is connected with the chassis

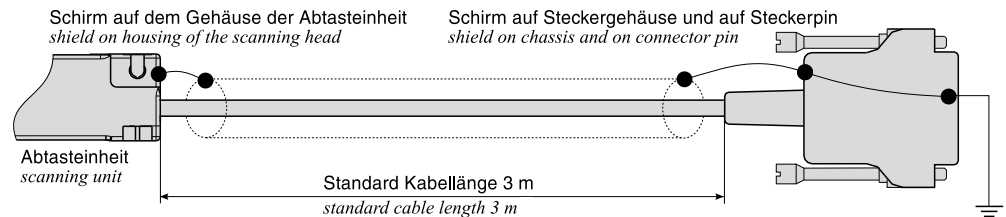
Schirmverbindungen / Cable shielding

Geschirmtes PUR-Kabel, Standard, $\varnothing 4,3$ mm
Biegeradius einmalig > 10 mm, dauernd > 50 mm,
Torsion > 300.000 Zyklen, Schleppkette > 5.000.000 Zyklen
Das Steckergehäuse muss galvanisch mit Schutzterde verbunden sein

Shielded PUR-cable, standard, $\varnothing 4.3$ mm

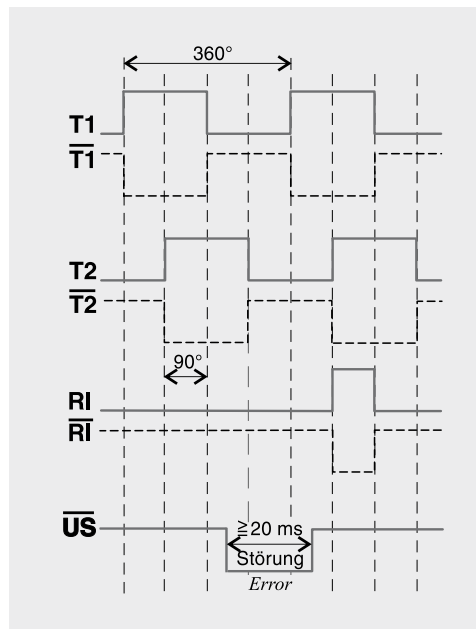
bending radius fixed mounting > 10 mm, continuous flexing > 50 mm

torsion > 300,000 cycles, dragchain > 5,000,000 cycles

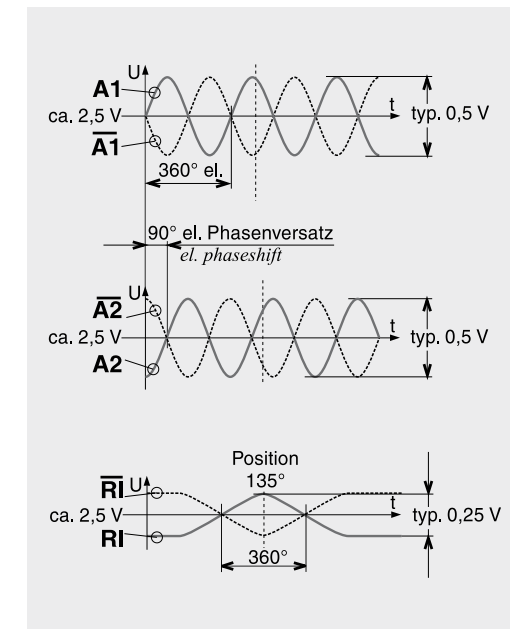


Ausgangssignale / Output signals

Rechtecksignale
Square wave signals



Sinusförmige Spannungssignale
Voltage signals

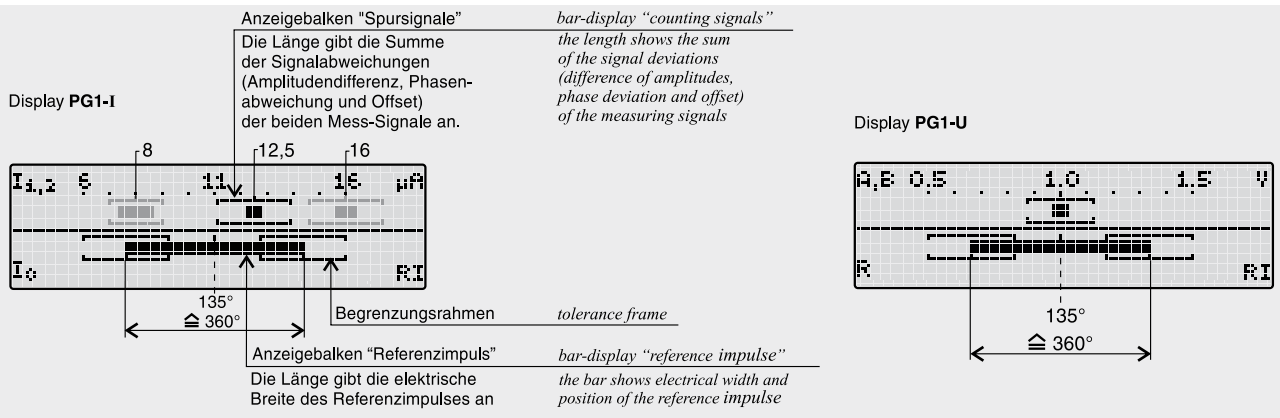
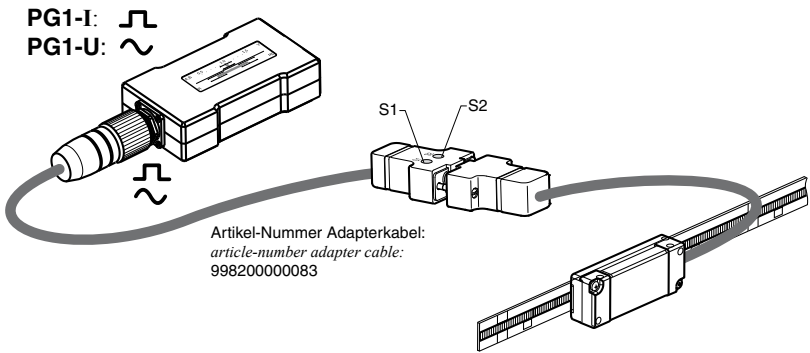


Elektronische Anbauhilfen PG / Electronic test/set-up boxes PG

Zur einfacheren Kontrolle bietet RSF Elektronik verschiedene Prüfgeräte an, mit deren Hilfe dieser Vorgang schnell und komfortabel durchzuführen ist.
For the easier control RSF offers various signal test boxes. With these test boxes all encoder signals can be quickly and easily checked.

Sinusförmige Spannungssignale 1 Vss / Voltage signals 1 Vpp = PG1-U, PG-U
Rechtecksignale / Square wave signals = PG1-I, PG2-I

- PG1-I / PG1-U:
alle funktionsrelevanten Signalgrößen werden mit LCD-Balkenanzeigen dargestellt
(siehe auch Bedienungsanleitung PG1-I bzw. PG1-U)
all relevant signals are displayed with LCD-bars
(also in operation manual PG1-I resp. PG1-U)



- PG2-I / PG-U
alle funktionsrelevanten Signalgrößen werden mit LED's angezeigt
all relevant signals are displayed with LED's

LED Anzeige / status of LEDs	Information
COUNTING (Zählsignale) (counting signals) - Rot / red - Grün / green	Spursignale außerhalb der Toleranz track signals out of tolerance Spursignale ok / track signals ok
REFERENCE (Referenzimpuls) (reference impulse) (nur beim Überfahren der Referenzmarke) (only by passing the reference mark) - Rot / red - Orange - Grün / green	RI außerhalb der Toleranz / RI out of tolerance RI geringfügig außerhalb der Toleranz RI slightly out of tolerance RI ok
SWITCH TRACK (Schaltsignale) (switch signals) (nur beim Überfahren des Schaltspur-Abdeckbandes) (only by passing the cover tape of the switch track) - Grün / green	Funktion ok / function ok

