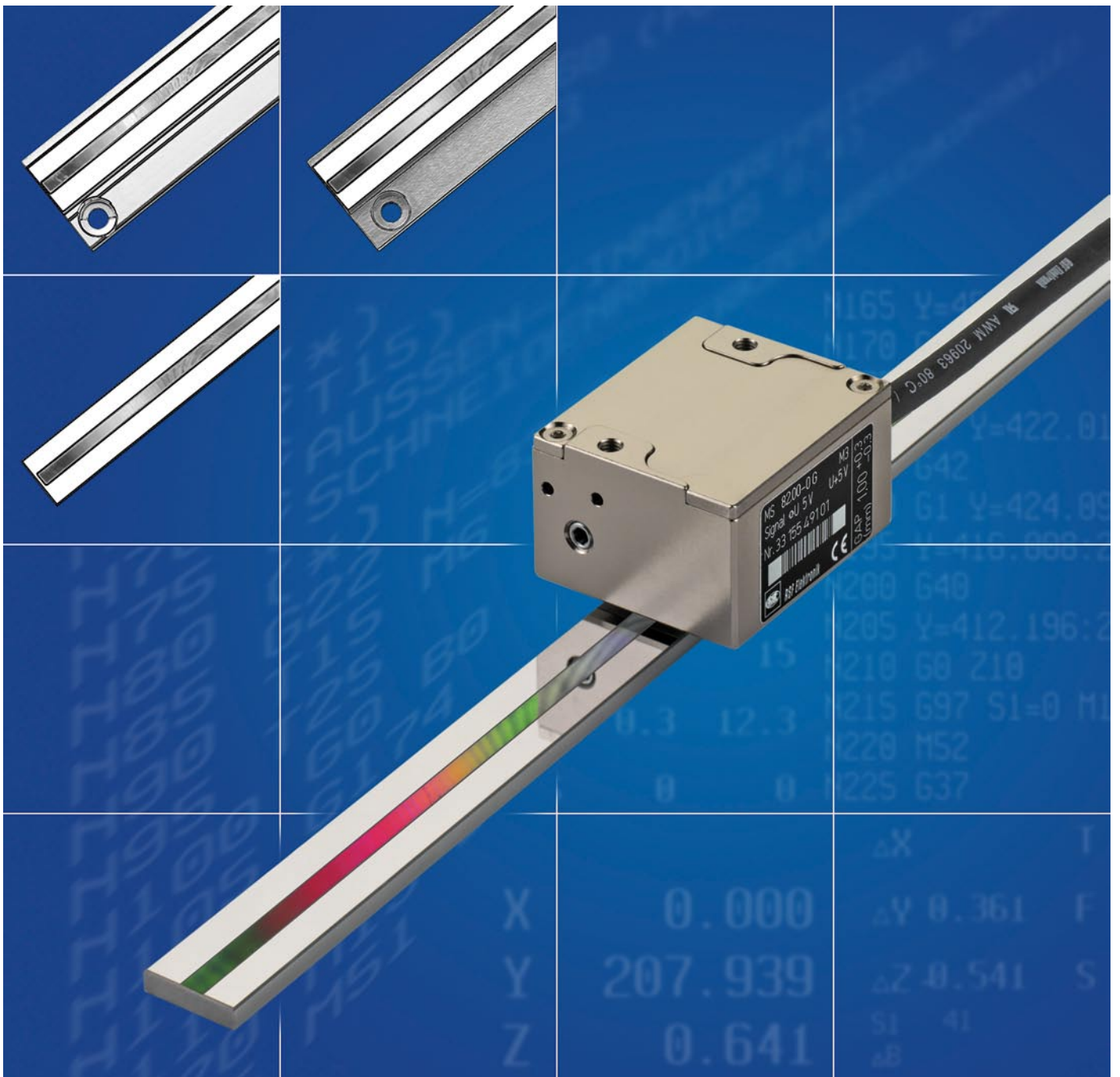




MS 82

Interferential Linear Encoder

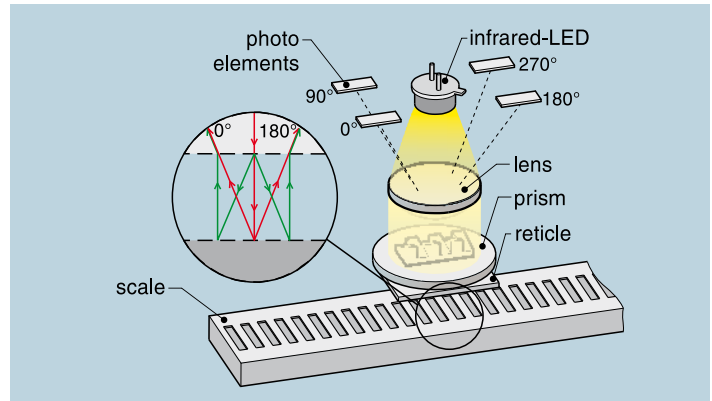


Reflection-type Phase Grating

The scale consists of a glass carrier and a reflection-type phase grating. The scanning reticle acts as transmission phase grating.

The light beam, produced by an LED and collimated by a lens, is deflected by prisms and the phase grating of the reticle in different directions.

After reflection and diffraction at the scale grating, the different beams, depending on the change of position phase shifted, interfere after passing the reticle again. In this way 2 by 90° shifted, sinus-oidal measuring signals are produced. Using this interferential measuring principle, one signal period equals half of the scale.



Technical Data

Features:

- Two switch tracks for individual special functions
- Non-contact reflective scanning
- For high traversing speed
- Small dimensions
- Any position of the reference mark within measuring length
- Integrated subdividing: up to times 100
- Scale unit: glass scale or ROBAX glass ceramic scale with phase grating
- Max. measuring length: 3140 mm

Scanning unit: 4 µm signal period, accuracy grades: ±3 µm/m

Scale model	System resolution	Integrated interpolation	Max. velocity	Max. output frequency resp. edge separation amin
• Sinusoidal voltage signals				
MS 82.00	depending on external interpolation	-	0.8 m/s*	200 kHz
• Square-wave signals with integrated subdividing				
MS 82.70	0.1 µm	times 10	0.8 m/s	100 ns
MS 82.40	0.05 µm	times 20	0.48 m/s	100 ns
MS 82.50	0.04 µm	times 25	0.38 m/s	100 ns
MS 82.80	0.02 µm	times 50	0.19 m/s	100 ns
MS 82.90	0.01 µm	times 100	0.096 m/s	100 ns

* On request: up to 1.5 m/s

Scale unit: version with glass scale or ROBAX glass ceramic scale with phase grating

Scale version:

- glass scale: ($\alpha \approx 8.5 \times 10^{-6}/K$)
- ROBAX glass ceramic scale: ($\alpha \approx 0 \times 10^{-6}/K$)

Grating pitch: 8 µm phase grating (4 µm signal period)

Max. measuring length: glass: 3140 mm, ROBAX: 1540 mm (longer on request)

Reference mark (RI):

Any position within measuring length. RI repeatable only from one direction.

Features: 2 switch tracks (S1, S2)

for individual special functions (reflection light barrier)

The desired switch positions are determined by the customer with adhesive cover tapes.

- version 1: TTL output (active high)
- version 2: open collector output (active high impedance)
- version 3: TTL output (active low)
- version 4: open collector output (active low)

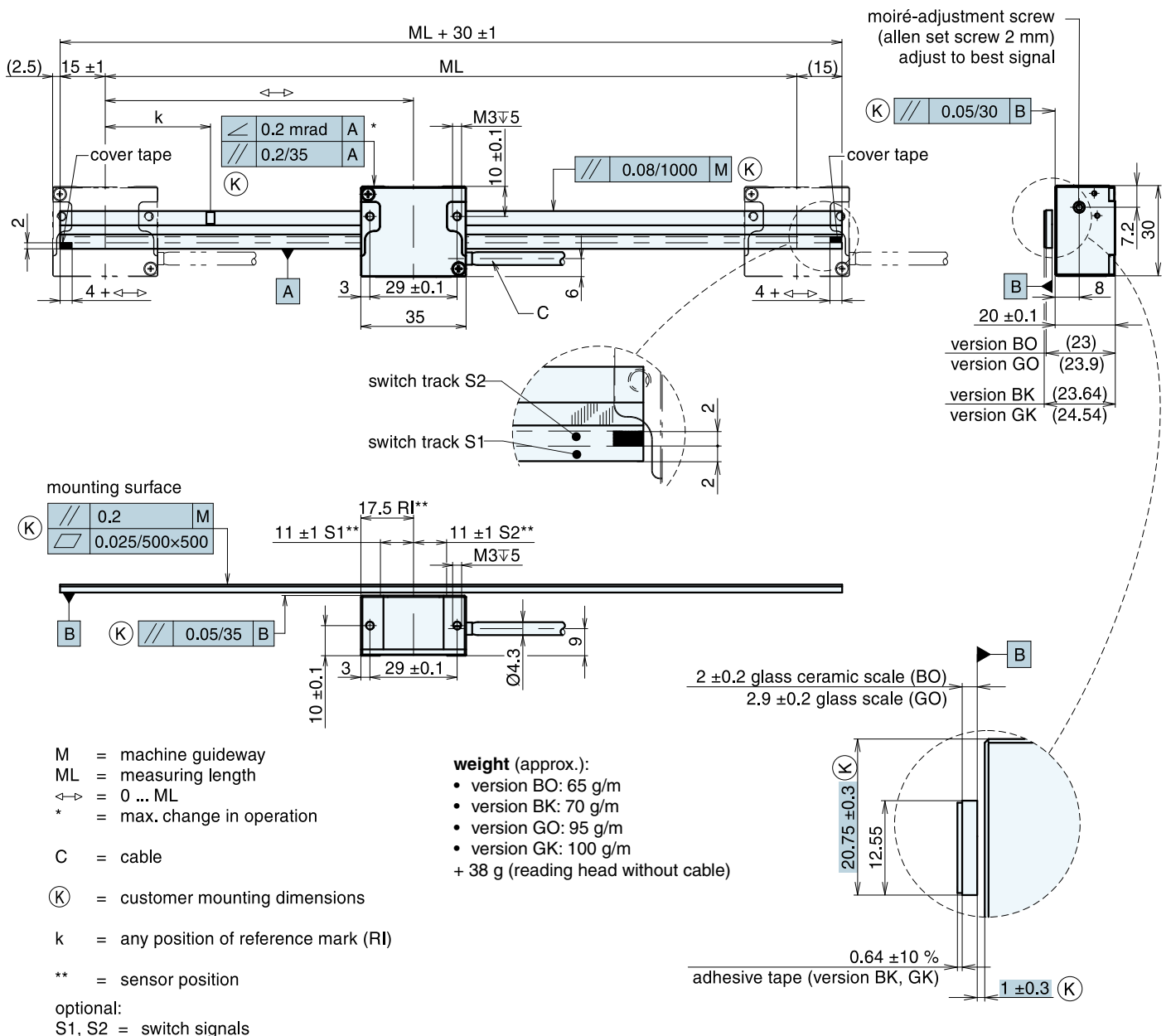
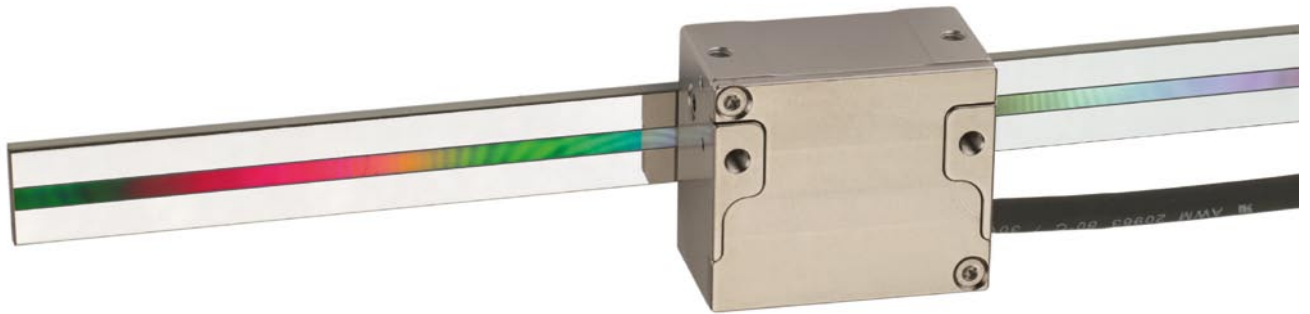
RoHS-conformity:

The Linear Encoders of the MS 82 series comply with the guideline of the RoHS-directive (2002/95/EG) on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

MS 82.xx BO, BK, GO, GK

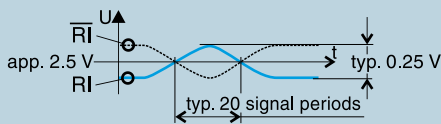
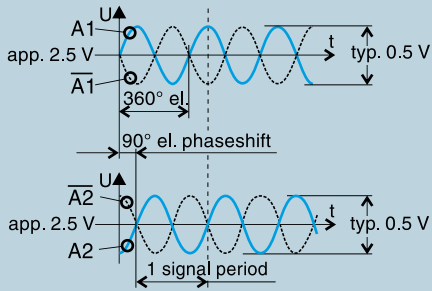
- Version BO: glass ceramic scale
- Version BK: glass ceramic scale with adhesive tape
- Version GO: glass scale
- Version GK: glass scale with adhesive tape

On request: other versions with glass- or glass ceramic scale on steel- or aluminum carrier

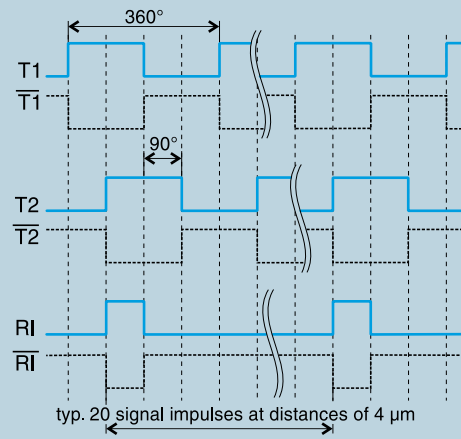


Output Signals

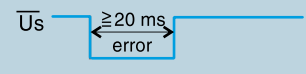
Voltage signals 1 Vpp



Square-wave signals „differential“



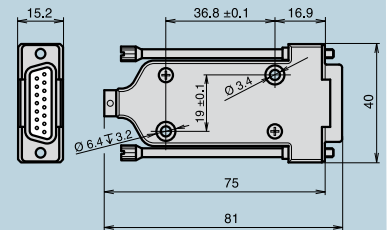
Error signal



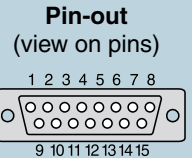
Connector pin-out

AWS

PIN	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Square-wave signals via Line Driver	test*	sensor 0 V	\bar{U}_s	\bar{R}_I	\bar{T}_2	\bar{T}_1	sensor +5 V	+5 V	0 V	S1***	S2***	R_I	T2	T1	shield
Voltage signals	test**	0 V	nc	\bar{R}_I	\bar{A}_2	\bar{A}_1	sensor +5 V	+5 V	0 V	S1***	S2***	R_I	A2	A1	shield



- Test* = **analog signal switch-over for setup via APG 801**
By applying +5 V to the test pin, the test signals (sinusoidal micro-current signals 11 μ App) are switched to the output connector.
- Test** = **analog signal switch-over for setup via APG 801 1 Vpp**
By applying +5 V to the test pin, the NOT corrected 1 Vpp signals are switched to the output connector.
- *** Versions without switch signals (version 0) = nc
- Sensor: The sensor-pins are bridged in the chassis with the particular power supply.



APG 801 and APG 801 1 Vpp Electronic Signal Test/set-up Box

APG 801

APG 801 1 Vpp

Date 04/2011 • Art.Nr. 784839-21 • Technical adjustments in reserve!