

Code ST02	Project A03-B	Release A	Title TECHNICAL DATASHEET
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OPTICAL SCALE NCH

GENERAL FEATURES

- Reading transducer made of die-cast metallic material, of small overall dimensions.
- Stainless steel grating. Dimensions 18x0.305 mm in a single section.
- Double fixing system of the reading transducer, horizontally or vertically.
- Very flexible connecting cable.
- High stability of signals.
- Wide alignment tolerances.



MECHANICAL AND ELECTRICAL FEATURES

MECHANICAL

- ZAMA die-cast reading transducer.
- Reading transducer with double fixing system: horizontally or vertically.
- Very flexible connecting cable.
- Wide alignment tolerances.
- Full possibility to disassemble it.
- Possibility of direct service.

ELECTRICAL



- A and B output signals with phase displacement of 90° (electrical).
- Very flexible connecting cable.
- For applications where the max speed exceeds 1 m/sec, the use of a "special cable" is essential".

Do not exceed the minimum cable bending radius of 60 mm.

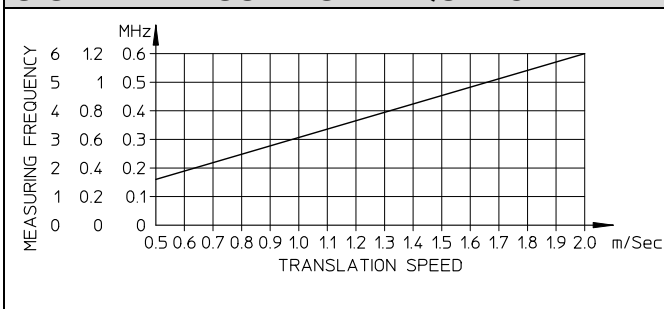
LINE DRIVER	PUSH-PULL	WIRE COLOUR
A	B	Green
\bar{A}	NC	Orange
B	A	White
\bar{B}	NC	Light blue
Z	Z	Brown
\bar{Z}	NC	Yellow
SCH	SCH	Shield
VS = 5V	VS = 5V	Red
VS0 = 0V	VS0 = 0V	Blue

For **CABLE EXTENSIONS**, use a cable having section: supply $\geq 0.35 \text{ mm}^2$, signals $\geq 0.14 \text{ mm}^2$.

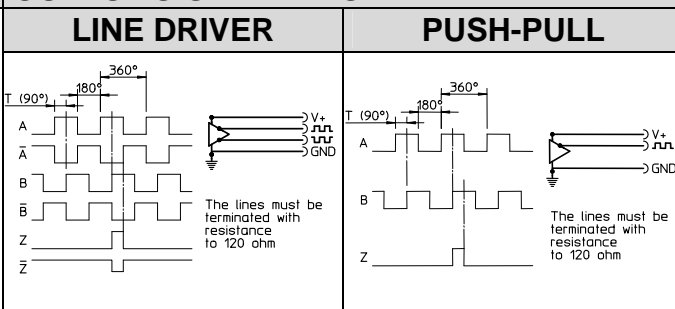
8 CORES Ø 4.5	5 CORES Ø 4.1	STANDARD CABLE
8 CORES Ø 5.3	5 CORES Ø 4.1	CABLE EXTENSION

Code NCH	T10Z	T5Z	T1Z	W05	W10
L = LINE DRIVER Q = PUSH-PULL	L	L	L	L	Q
Measuring support	stainless steel				
Grating pitch 	200 µm				400 µm
Linear thermal expansion	$10.6 \times 10^{-6} \text{ }^\circ\text{C}^{-1}$ T ref. = 20 °C ± 0.1 °C				
Reference index (I ₀)	at constant step (50 mm)			not available	
Resolution	10 µm	5 µm	1 µm	5 µm	10 µm
Accuracy	± 5 µm/m				
Measuring length ML in mm	250, 300, 350, 400, 450,.....				
Collimator-grating distance in mm	0.5				0.8
Max. traversing speed in m/min	300	210	120	120	
Max. acceleration in m/s ²	60	60	30	30	
Vibration resistance (EN 60068-2-6)	100 m/s ² [55 ÷ 2000 Hz]				
Shock resistance (EN 60068-2-27)	150 m/s ² [11 ms]				
Protection class (EN 60529)	IP 40				
Operating temperature	0 °C ÷ 70 °C				
Storage temperature	-20 °C ÷ 70 °C				
Relative humidity	10% ÷ 90% (not condensed)				
Power supply	5 Vdc ± 5%				
Current consumption	65 mA _{MAX} (no load)				
A and B output signals	LINE DRIVER PUSH-PULL				
Max. cable length	30 m				
Electrical connections	see the rel. table				
Weight of reader	60 g				

SIGNAL MEASURING FREQUENCY

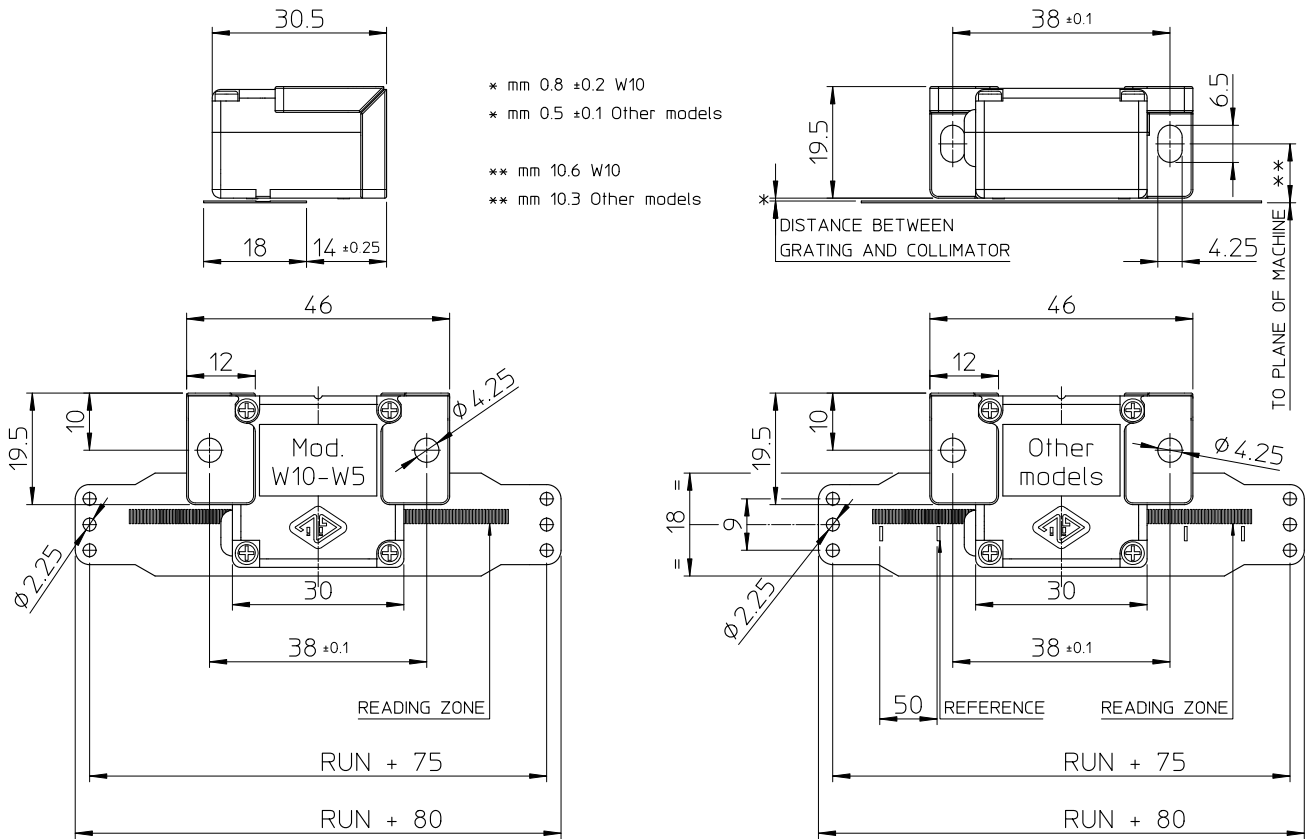


OUTPUT SIGNAL DIAGRAM



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SLIDER AND GRATING DIMENSIONS



ORDERING CODE

MODEL	RESOLUTION	MEASURING LENGTH	POWER SUPPLY, OUTPUT SIGNALS	CABLE LENGTH, CABLE TYPE	CONNECTOR
NCH	T10Z	00250	05V L	M01 / N	CV

T10Z = 10µm
 T5Z = 5µm
 T1Z = 1µm
 W10 = 10µm
 W05 = 5µm

Length in mm
 00250 = 250mm
 00300 = 300mm
 00350 = 350mm
 00400 = 400mm
 00450 = 450mm

05V = 5V
 L = LINE DRIVER
 Q = PUSH-PULL

Mnn = length in m
 M01 = 1m (standard)
 M04 = 4m
 M40 = 30m (max)
 N = standard cable

Cnn = progressive
 SC = without connector

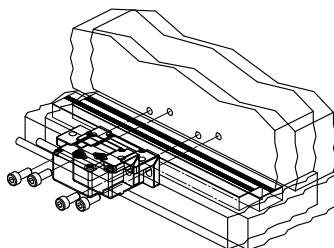
Example  **OPTICAL SCALE NCH T10Z 00250 05VL M01/N C1**

INSTALLATION AND HANDLING

RECOMMENDED SLIDER INSTALLATION

- Degrease surface by using alcohol and give a finishing touch by using a dry cloth.
- Fix the bi-adhesive tape and press it hard. Make a cut at the desired length to avoid damaging.

After 48 hours the best adhesion will be obtained.



WHAT TO AVOID

- All mechanical reworks (cutting, drilling, face milling etc.).
- All modifications of the body of slider.
- All mishandling.
- Impacts and external stress.

