

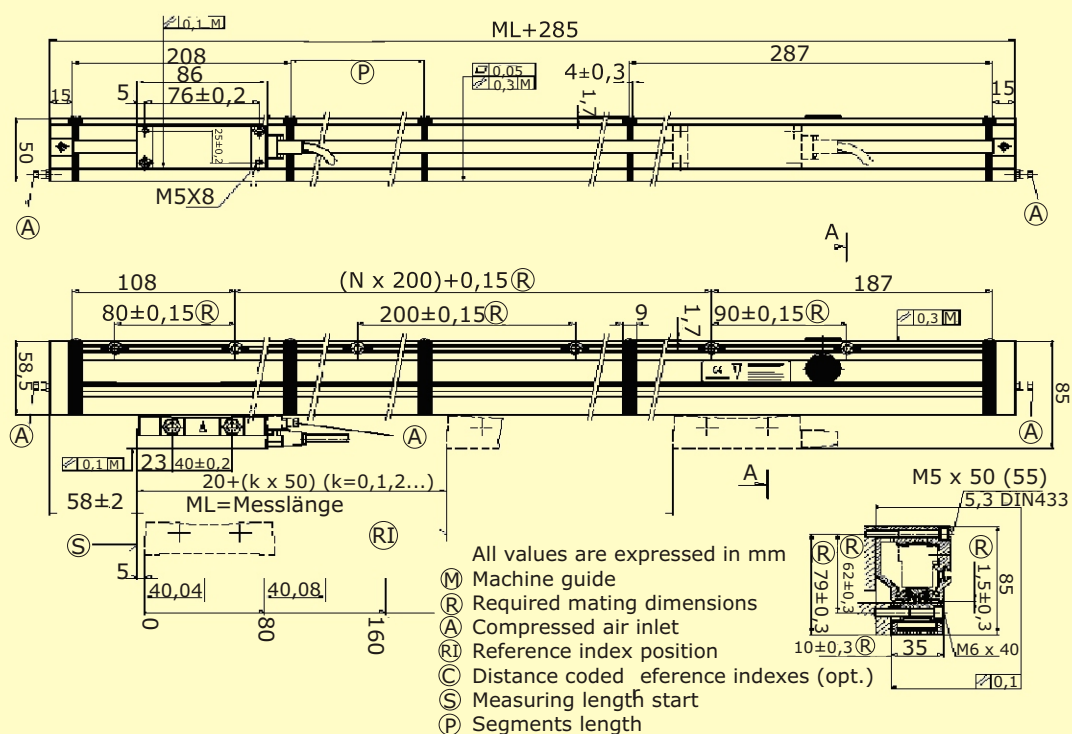
Optical scale incremental GMSV40



Characteristics

- Robust and durable anodised aluminum profiles
- Resolution up to 0,1 μm
- Accuracy $\pm 10 \mu\text{m}$
- Therm. expansion: $= 10,6 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$
- Reference index in the desired position
- High protection against reverse polarity and short circuits at the output port
- Output signal: sine curve

Dimensions and drilling plan



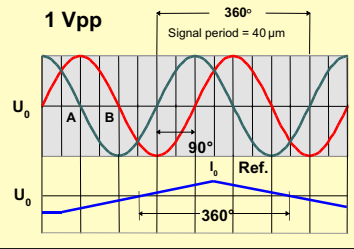
Electrical data

Sensor emitter	Infrared light emitter
Power supply	5 V±5%
Power consumption	100 mA _{MAX}
A and B output signals	Sine curve 1 V _{pp} / 40 μm
Phase displacement	90°

Mechanical data

Weight	1,8 kg+ 3,3 kg/m
Grating pitch	40 μm
Accuracy $\mu\text{m}/\text{m}$	$\pm 10 \mu\text{m}$
Thermal expansion coefficient	$10,6 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$ T rif.=20°C $\pm 0.1^{\circ}\text{C}$
Max. traversing speed	60 m/min
Max. acceleration	30 m/s ²
Required moving force	$\leq 6\text{N}$ (0.6 Kgf)
Protection class	IP 53 standard IP 64 pressurized
Operating temperature	0°C - 50°C
Storage temperature	-20°C - 70°C
Measuring lengths	Up to 30040 mm with steps of 200 mm Segments length: 1000, 1200, 1400, 1600, 1800, 2000 mm

Output signals

	A and B amplitude	0,6 Vpp - 1,2 Vpp
	I ₀ amplitude	0,25 V - 0.8 V
	A- and B- phase displacement	90° $\pm$ 10°
	Reference voltage U ₀	Approx. 2,2 V
	Signal amplitude is referred to measurements made with 120 Ω impedance and power supply voltage to the transducer of 5V $\pm$ 5%.	

Pin assignment

Signals	Conductor color
A	green
$\bar{A}$	brown
B	black
$\bar{B}$	red
I ₀	pink
$\bar{I}_0$	grey
not connected	violet
V-sense	blue
V+sense	white
V-	green-white
V+	green-yellow
shield	shield

Ordering example

Example: GMS - V40C - 03240 - 05VS - M04/S - CC6 - PR

Model	Resolution Index	Length	Power supply Output signals	Cable length	Connector wiring	Special, pressurized
GMS	V40C	03240	05VS	M04/S	CC6	PR
V =1 Vpp 40 =40 µm C = index at coded distance P = index at constant step E = selectable index		Length in mm 03240 =ML 30040 =ML _{MAX}	05V =5 V S =Sine curve	Mnn =Length in mm M04 =4 m (standard) M50 =50 m 120 =120 m S =unarmored cable T =tubeflex	Cnn =progressive different connectors on request	No cod. =standard SP = special nn PR = pressurized

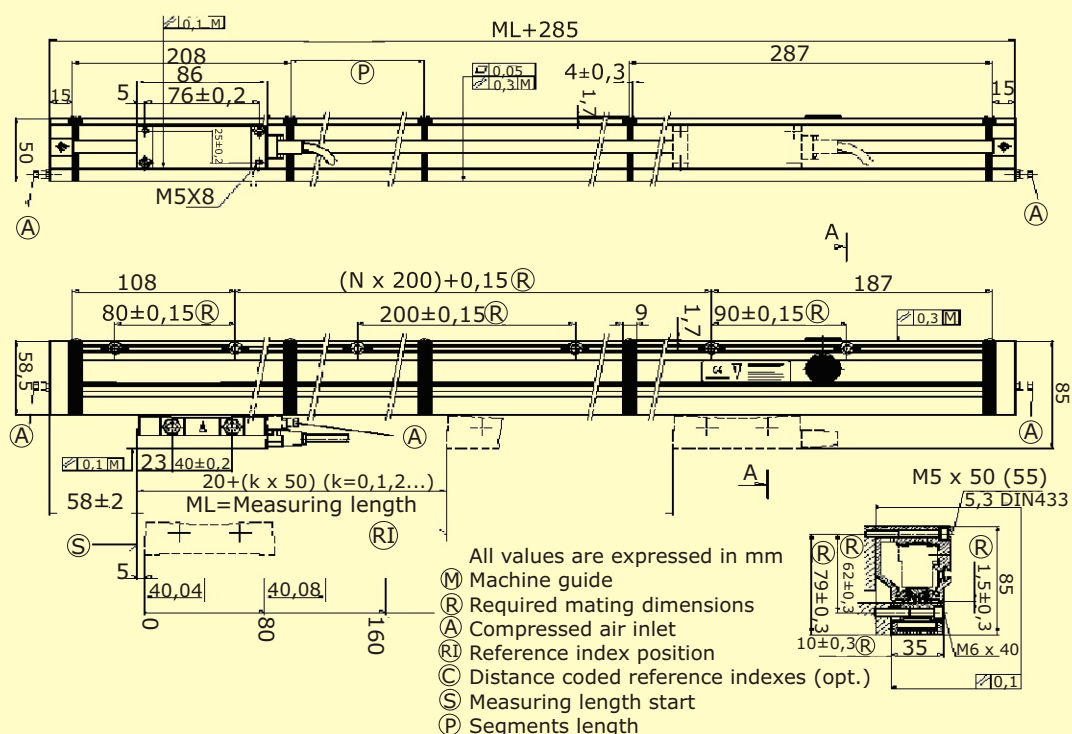
Optical scale GMS T



Characteristics

- Robust and durable anodised aluminum profiles
- Resolution up to 0.5 microns
- Accuracy $\pm 10 \mu\text{m}$
- Therm. expansion: $=10,6 \times 10^{-6} \text{ }^{\circ}\text{C}^{-1}$
- Reference index in the desired position
- High protection against reverse polarity and short circuits at the output port
- Output signal: TTL

Dimensions and drilling plan



Electrical data

Sensor emitter	Infrared light emitter
Power supply	5 V±5%
Power consumption	150 mA _{MAX}
A, B and I ₀ output signals	LINE DRIVER
Phase displacement	90°

Mechanical data

Weight	1,8 kg+ 3,3 kg/m
Grating pitch	40 µm
Accuracy µm/m	±10 µm
Thermal expansion coefficient	10,6 x 10 ⁻⁶ °C ⁻¹
Max. traversing speed	60 m/min
Max. acceleration	30 m/s ²
Required moving force	≤ 6N (0.6 Kgf)
Protection class	IP 53 standard IP64 pressurized
Operating temperature	0°C - 50°C
Storage temperature	-20°C - 70°C
Measuring lengths	Up to 3004 mm with steps of 200 mm Segments length: 1000, 1200, 1400, 1600, 1800, 2000 mm

Output signals

	Signal amplitude	LINE DRIVER ($V_{OH} \geq 2,5 \text{ V}$ $V_{OL} \leq 0.5 \text{ V}$), TTL
	Load per channel	$R = 120\Omega$ $I_L = \pm 20 \text{ mA}_{MAX}$
	A- and B- phase displacement	90°±5° electrical

Pin assignment

Signals	Conductor color
A	green
$\bar{A}$	brown
B	red
$\bar{B}$	black
I_0	pink
$\bar{I}_0$	grey
not connected	violet
V-sense	blue
V+sense	white
V-	green-white
V+	green-yellow
Shield	Shield

Ordering example

Example: GMS - T05C - 03240 - 05VL - M04/S - CC6 - PR

Model	Resolution Index	Length	Power supply Output signals	Cable length	Connector wiring	Special, pressurized
GMS	T05C	03240	05VL	M04/S	CC6	PR
T 10=10 µm 5=5 µm 1=1 µm 05= 0,5 µm C= index at coded distance P= index at constant step E= selectable index 05V=5 V L=LINE DRIVER Cnn=progressive Mnn=length in m M04=4 m (standard) M50=50 m S=unarmored cable T=tubeflex No cod. =standard SP= special nn PR= pressurized						