



# More Precision

indu**SENSOR** MSC7602 // Controller for inductive displacement sensors





- *Universal controller - compatible with LVDT and half-bridge sensors*
- *Standard housing for DIN rail*
- *Ideal for serial applications in machine building and automation*
- *High resolution and linearity*
- *User-friendly set up and configuration via buttons or software*
- *Multi-channel capability & synchronous operation*

The new MSC7602 controller is designed to be operated with DTA (LVDT) and LDR measuring gauges and displacement sensors.

The controller is ideally suited to multi-channel applications. The bus connector on the rear side significantly reduces the wiring effort. It can be easily set via buttons/LEDs or software.

A large variety of compatible, inductive displacement sensors and gauges from Micro-Epsilon combined with an optimized price/performance ratio opens up numerous fields of applications in automation technology and machine building.

**DIP switch:**

**Address assignment**

Address		Switch setting						
Sensor 1	Sensor 2	S1	S2	S3	S4	S5	S6	Binary
126 <sup>1)2)</sup>	125 <sup>1)2)</sup>	0	0	0	0	0	0	000000
2	1	1	0	0	0	0	0	000001
4	3	0	1	0	0	0	0	000010
6	5	1	1	0	0	0	0	000011
...	...	...	...	...	...	...	...	...
124	123	0	1	1	1	1	1	111110
126	125	1	1	1	1	1	1	111111

**Synchronization**

Switch setting		Operation	
S1	S2	Sensor 1	Sensor 2
0 <sup>1)</sup>	0 <sup>1)</sup>	independent	independent
0	1	Master	Slave
1	0	Slave	independent
1	1	Slave	Slave

Extract of DIP switch on induSENSOR MSC7602 for synchronization  
<sup>1)</sup> Factory settings  
 0 = OFF, 1 = ON  
 The prerequisites for sync operation are described in the operating instructions.

Address assignment on the induSENSOR MSC7602 controller  
<sup>1)</sup> Factory settings  
<sup>2)</sup> The address can be set using the sensorTOOL (see operating instructions).  
 0 = OFF, 1 = ON  
 Requirements:  
 Each address is only permitted once on the same bus.  
 Address channel 1: even value; address channel 2: odd value  
 Master address of Micro-Epsilon products: "1"

Model		MSC7602
Resolution <sup>1)</sup>	DTA series	13 bits (0.012 % FSO) at 50 Hz 12 bits (0.024 % FSO) at 300 Hz
	LDR series	12 bits (0.024 % FSO) at 50 Hz 11 bits (0.048 % FSO) at 300 Hz
Frequency response (-3dB)		300 Hz (adjustable only via software)
Linearity		≤ ± 0.02 % FSO
Temperature stability	DTA series	≤ 100 ppm FSO/K
	LDR series	≤ 125 ppm FSO/K
Supply voltage		14 ... 30 VDC (5 ... 30 VDC <sup>2)</sup> )
Max. current consumption		80 mA
Input impedance <sup>3)</sup>		> 100 kOhm
Analog output <sup>4)</sup>		(0)2 ... 10 V; 0.5 ... 4.5 V; 0 ... 5 V (R <sub>a</sub> > 1 kOhm) or 0(4) ... 20 mA (load < 500 Ohm)
Connection		Sensor: screw terminal AWG 16 to AWG 28 Supply/signal: screw terminal AWG 16 to AWG 28 Supply/Sync/RS485: DIN rail bus connector
Installation		DIN rail 35 mm
Temperature range	Storage	-40 ... +85 °C
	Operation	-40 ... +85 °C
Shock (DIN-EN 60068-2-27)		5 g / 6 ms in 6 axes, 1000 shocks each 15 g / 11 ms in 6 axes, 10 shocks
Vibration (DIN-EN 60068-2-6)		± 2 mm / 10 ... 15.77 Hz in 3 axes, 10 cycles each ± 2 g / 15.77 ... 2000 Hz in 3 axes, 10 cycles each
Protection class (DIN-EN 60529)		IP20
Material		Polyamide
Weight		approx. 120 g
Compatibility		full-bridge sensor/LVDT (DTA series) and half-bridge sensor (LDR series)
No. of measurement channels		2

FSO = Full Scale Output

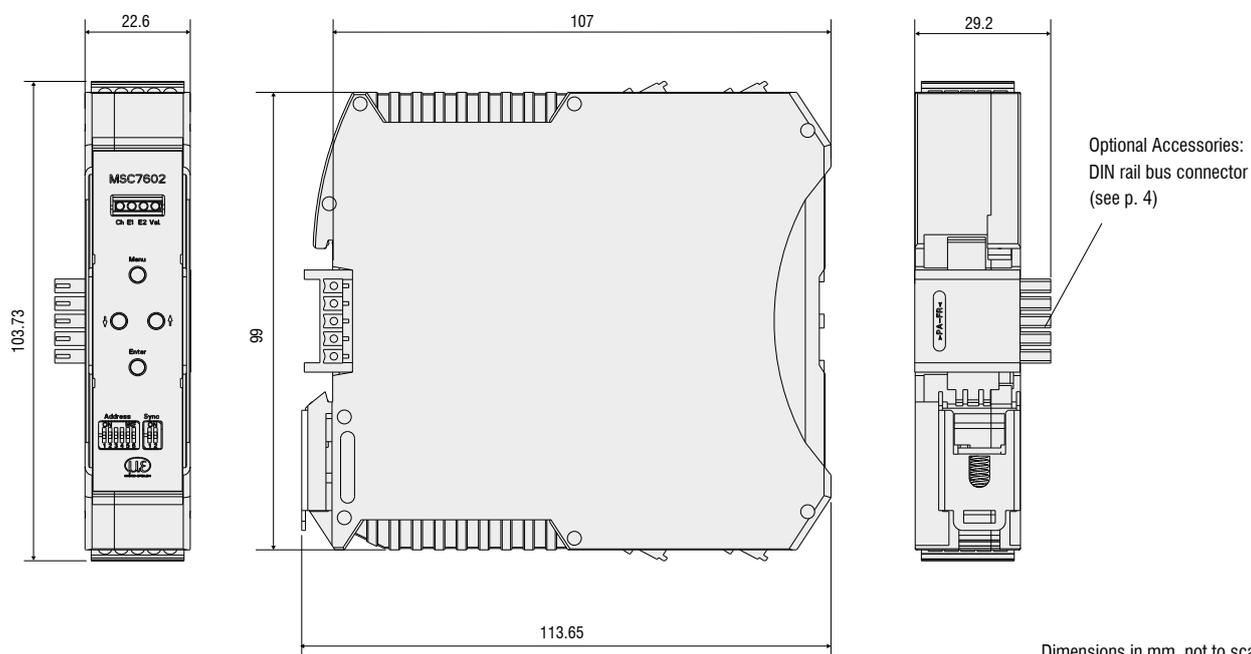
<sup>1)</sup> Noise: AC RMS measurement via RC low-pass filter of the 1st order with  $f_c = 5$  kHz

<sup>2)</sup> With technical restrictions of the output signal (load and signal span)

<sup>3)</sup> Sensor side

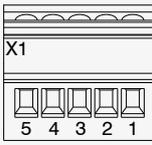
<sup>4)</sup> With controllers including a current output, the output signal is limited to approx. 21 mA

## MSC7602



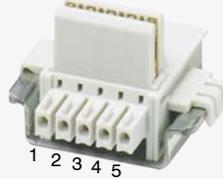
### Pin assignment of supply and analog output

Assignment	Pin X1	Color (cable: PC7400-6/4)
Supply voltage +24 V	1	White
Supply/signal ground	2	Brown
Analog output for channel 1	3	Yellow
Analog output for channel 2	4	Green
Cable shield sensor 2 (direct connection to DIN rail)	5	-



### Pin assignment Bus connector

Assignment	Pin
Supply voltage +24 V	1
Ground 0 V	2
RS485 A	3
RS485 B	4
Sync-signal	5



ME22.5 TBUS 1,5/4P1S KMGY (Phoenix: 2201732);  
Suitable mating plug: MCVR 1.5/5-ST-3.81 (Phoenix: 1827156)

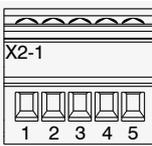
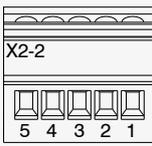
### Pin assignment Sensor 1 + 2 (DTA/LVDT)

Assignment	Pin X2-x	DTA-x-CA-x DTA-x-CR-x Cable C701-x	DTA-x-CA-x	DTA-xG8-x
Secondary center tap	1	Gray	Gray	Gray
Secondary +	2	White	White	Black
Secondary -	3	Brown	Black	White
Primary +	4	Green	Green	Blue
Primary -	5	Yellow	Yellow	Brown

Cable shield sensor 1 + 2, see X1 and X3

### Pin assignment Sensor 1 + 2 (LDR)

Assignment	Pin X2-x	LDR-x-CA LVP-25-Z20-x	Cable C7210-x
Secondary center tap	1	Green	Black
Secondary +	2	White	Brown
Secondary -	3	Brown	Blue
Primary +	4	-	-
Primary -	5	-	-

Cable shield sensor 1 + 2, see X1 and X3

### Pin assignment Digital interface X3

Assignment	Pin X3	Color (IF7001)
A (RS485)	1	Brown
B (RS485)	2	White
-	3	-
-	4	-
Cable shield sensor 1 (direct connection to DIN rail)	5	-

