

IMCA | LVDT EXTERNAL ELECTRONICS

for switch cabinet installation

- Configurable output signal (4...20 mA, 0...20 mA, 0...5 V, 0...10 V, ± 5 V, ± 10 V)
- DIN rail mounting
- Low residual noise
- Built-in cable break detection with alarm-output



TECHNICAL DATA

ELECTRONICS	IMCA LVDT EXTERNAL ELECTRONICS (DIN RAIL MOUNTING)
output signal	0...20 mA, 4...20 mA (load <300 Ohm) 0...5 V, ± 5 V (load >5 kOhm) 0...10 V, ± 10 V (load >10 kOhm)
temperature coefficient	-0,0055, ± 0,002 %/K
ripple	< 0,5 mV _{eff} up to 300 Hz, < 4 mV _{eff} up to 20 MHz
max. frequency	300 Hz/ -3 dB (6-pol. Bessel)
isolation stability	> 1000 VDC
power supply	9...36 VDC
current consumption	75 mA at 24 VDC 150 mA at 12 VDC
custom setting for sensor supply	3 V _{eff} 3 kHz
adjustable setting	frequency, amplitude, phase shift, offset, gain
working temperature	-40...+85 °C
storage temperature	-40...+85 °C
housing	polyamide PA6.6, meets UL94-VO
mounting	on DIN EN-rail

ELECTRICAL CONNECTION

external electronics IMCA (for DIN-rail mounting)

■ Connection
The external electronics IMCA is designed to be installed in switch cabinets (Din-rail mounting). The connection to the sensor is conducted as connector with push-in spring connection.

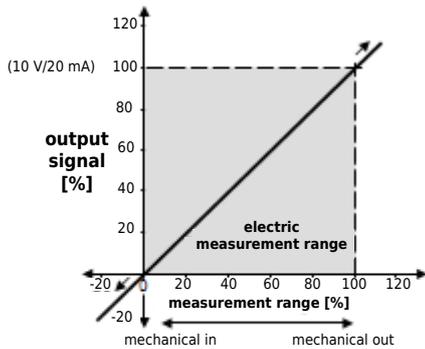
* Terminals 1 and 7 are internally connected.

CLAMP	CONNECTION	FUNCTION	WIRE COLOR	
			STANDARD TPE-CABLE	PTFE-CABLE (H-OPTION)
1	power	earth		
2		GND power		
3		power 9...36 VDC		
4	sensor	alarm		
5		primary coil 2	white	white
6		secondary coil 2	black	green
7		shield		
8		secondary coil 1	blue	brown
9		primary coil 1	brown	yellow
10	alarm			
11	signal	GND Signal		
12		voltage output		
13		current output		

ADJUSTMENT OF ZERO POINT AND GAIN

Each sensor, manufactured by eddylab, is basically adjusted and calibrated. You will receive a traceable calibrated measurement equipment, adjusted and tested in the company's own high-end calibration laboratory, and a calibration certificate. Please note: If the zero point or gain is changed the calibration certificate will lose validity. The potentiometers shall be protected by a label against unauthorised access. In some cases, it is necessary to adjust the zero point and gain, e.g. with hydraulic cylinders or reduced measurement ranges. In this case, the output signal can be adapted to the mechanical stroke of the measurement object precisely. Please note that the zero point and gain may shift for long cable length between sensor and electronics. Thus install the sensor with the according cable length to the electronics and then adjust zero point and gain.

- Push rod entirely in - adjust offset.
Move the sensor to the zero point of the measuring range and set the offset potentiometer on 4 mA/0 V for the output signal
- Push rod entirely out - adjust gain.
Move the sensor to the end of the measuring range (push rod moved out) and set the gain potentiometer on 20 mA /10 V/5 V for the output signal.



The output signal is referring to the electric measuring range. If the sensor is operated outside the measuring range or the measuring range is exceeded, the signal is also outside the defined range (i.e. > 10 V/20 mA or < 0 V/4 mA, in the graph: > 100 % or < 0 %). Please keep this in mind for control systems with cable break detection lower than 4 mA or for a maximum input voltage > 10 V of measuring instruments. If necessary install the sensor **before** connecting to the PLC.

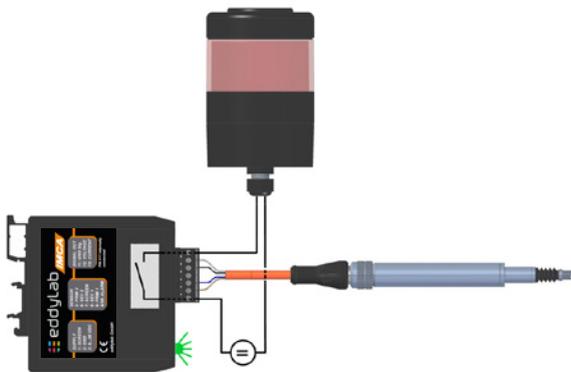
Running direction of signal: If the push rod is moving into the sensor (e.g. sprung load pushed in), the signal is reducing. If the push rod is moving out, the output signal is increasing. The running direction of the signal can also be inverted.

CABLE BREAK DETECTION

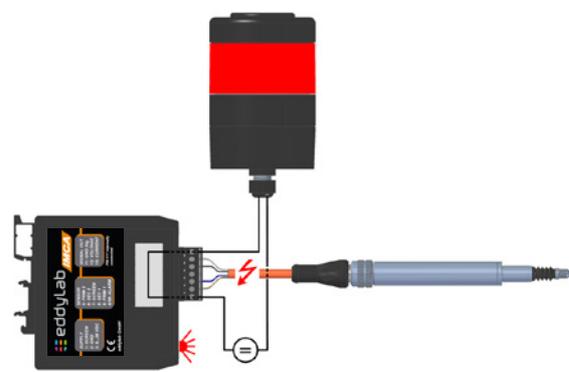
For the use of the cable break functions an alarm system (signal lamp, acoustic alarm device) or an alarm input of the PLC must be connected to the 7-pole terminal. The circuit board features a analog switch which is a normally open.

■ NORMAL OPERATION IMCA:

■ CABLE BREAK IMCA:



- The green „POWER-LED“ on the front side is on.
- The signal output is active.
- The alarm output is disabled.



- In case of a cable break the analog switch closes and the alarm system is activated or an electrical signal is conducted. Please note the maximum electrical values: 30 mA or 14 V.
- A front side „ERROR-LED“ flashes in case of an error.
- The signal output is deactivated. There is no current or voltage signal.