



PN 103 308 (Type A2)  
53mm(W) x 90mm(H) x 58mm (max. above mounting rail)

The **Micha** HART 4-20mA Transducer Modules Type A2 incorporate the STATUS SEM310 4-20mA transducer and can be used with both millivolt input signals as well as higher voltages when used with the built-in potential divider network.

PN **103 308** is Loop-Powered. PN **103 309** (Type B) will be available from 2018 Q3, and will include an isolated DC-DC converter to allow the transducer to source the 4-20mA signal.

The transducer is factory programmed to accept any DC input voltage from typically  $\pm 0$ -60mVDC up to  $\pm 80$ VDC. The module is configured and programmed to provide the appropriate output range, for example:

- 100mV to +200mV = 4-20mA
- +18VDC to +36VDC = 4-20mA

The input circuits include a resettable fuse to protect the transducer from overvoltage.

The transducers are supplied with a printed label that identifies the module configuration. Alternatively, they can be supplied with blank labels for customer configuration, using a USB cable and appropriate software. The transducers are fully HART compliant.

### Transducer Specification

#### General:

Warm-up Time:	120s to full accuracy
Input/Output Breakdown Isolation:	500 VAC
Operating Range:	-40 to +85 °C
Storage Temperature:	-50 to +85 °C
Humidity Range:	0-95% (non-condensing)

#### Terminal Blocks:

Plug and socket type.  
Max cable size: 2.5mm<sup>2</sup>

#### DIN-Rail Housing:

Grey Polycarbonate 53mm(W) x 90mm(H) x 58mm(D) Clips onto standard 35mm DIN rail

#### Input to Transducer:

Maximum Range:	$\pm 200$ mV or $\pm 80$ V (Internal Link setting)
Minimum Span:	$\pm 5$ mV
Basic Accuracy:	$\pm 10$ $\mu$ V $\pm 0.07$ % rdg
Input Impedance:	10 M $\Omega$
Thermal Drift	Zero 0.1 $\mu$ V/ $^{\circ}$ C Span 0.01 %/ $^{\circ}$ C

#### Output (loop):

Maximum Output Load:	$[(V_{supply}-10)/21.5]$ K $\Omega$ , 250 $\Omega$ minimum loop load. For supply voltages over 30V a minimum loop load of 500 $\Omega$ is necessary.
Burnout Levels:	Low 3.75 mA, High 21.5 mA
Input Out of Range:	Low 3.8 mA, High 20.5 mA
Output Range:	4 to 20mA, (Min. 3.75 mA, Max. 21.5 mA)
Accuracy:	$\pm 5$ $\mu$ A
Thermal Drift:	1 $\mu$ A/ $^{\circ}$ C
Supply Voltage:	10 to 40VDC

#### Potential Divider:

Resistor Accuracy:	$\pm 0.1$ %
Thermal drift:	$\pm 15$ ppm

### Ordering Information:

	HART 4-20mA Transducer PN: 103 308
Serial No:	18-01234
Transducer No:	1
Output Signal:	Bat Volts
Input Range:	18-36V
	HART 4-20mA Transducer PN: 103 308
Serial No:	18-01235
Transducer No:	2
Output Signal:	Bat Current
Input Range:	$\pm 60$ mV
	HART 4-20mA Transducer PN: 103 308
Serial No:	18-01236
Transducer No:	3
Output Signal:	Load Volts
Input Range:	22-26V

The Transducer Modules can be ordered for user configuration, or factory configured by supplying the following information:

**Transducer No:** For reference when multiple transducers are used in the same cabinet

**Output Signal** Description of what the output (4-20mA) signal represents.

**Input Range:** The actual input values to which the transducer is calibrated. Voltages, such as Battery or Load, can be offset to provide a more useful range – e.g. 18-30V for a nominal 24V Battery. Current signals are typically taken from a shunt, and would represent the voltage across the shunt. Unequal inputs can be taken into account where, for example, charge and discharge currents are different. In this case, the input could be calibrated to -20mV to +60mV outputs 4-20mA. (An input of 0mV would output 8mA, +20mV would output 12mA, etc.)

**Out of Range:** Where feasible, the transducers can be programmed to output an 'error' value. For example, if a transducer is calibrated to have a minimum input of 18V, in the event the input falls below this level, the output will fall below 4mA. As standard, the output range is fixed at a 4mA minimum.