

# BCD to 4-20mA Converter

Configuration:

$1_{\text{BCD}} = 4\text{mA}$

$21_{\text{BCD}} = 20\text{mA}$

80	40	20	10	8	4	2	1	GND
Input								
<b>BCD to 4-20mA Converter</b> Ser.Nr.: P0217 <small>IBE Ermisch GmbH Hermann-Mende-Str. 5-7 D-01069 Dresden</small>								
<b>Power</b>		Configuration					<b>Output</b>	
0V	24V	Input01 = 04 mA Output Input21 = 20 mA Output					-	+

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### 1. Purpose of the device

The BCD to 4-20mA Converter is designed to convert BCD signals (for example from tap changers) to a 4-20mA DC current.

### 2. Electrical characteristics

Power Supply	24V DC
Power Supply / Input Isolation	1500 V, 50/60 Hz, 1 min.
Power Supply / Output Isolation	1500 V, 50/60 Hz, 1 min.
Input / Output Isolation	1500 V, 50/60 Hz, 1 min.
Power Consumption	≤ 1W
Operating Temperature	-40 to 85 °C
Operating Humidity	10 to 90% without condensation
Output Current	4-20mA (other options also available)
Maximum Output Load	650Ω
Number of Tap Positions	21 (other options also available)

### 3. Operating Principle

The device converts a 0V (low) 24V (high) BCD Signal to a proportional current, corresponding to the configuration of the output current and the number of tap positions.

In normal operation the green power led will blink with ~1Hz to show the device is working properly. Any other behavior of the power LED shows implies an error of the device or the input signal.

If a BCD signal is applied to the input which is not a valid BCD code or is not compliant with the configuration, the device will always output 4mA and the power LED will blink faster (~10Hz) than in normal operation.

If the red open circuit LED is on, there is a faulty output connection, which means no output current is flowing.

80	40	20	10	8	4	2	1	BCD	I <sub>OUT</sub> in mA
							X	1	4.0
						X		2	4.8
						X	X	3	5.6
					X			4	6.4
					X	X		5	7.2
					X	X		6	8.0
					X	X	X	7	8.8
				X				8	9.6
				X			X	9	10.4
			X					10	11.2
			X				X	11	12.0
			X			X		12	12.8
			X			X	X	13	13.6
					X			14	14.4
					X	X		15	15.2
					X	X		16	16.0
					X	X	X	17	16.8
				X				18	17.6
				X			X	19	18.4
		X						20	19.2
		X					X	21	20.0

Any other input signal will result in an output of 4mA and LED 1 will blink faster (about 10HZ) to show the error.