

Current to Current Converter

CYCCC Series

User's Manual

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The signal converter is specifically designed to expand the application range of conventional current sensors. It proportionally transforms the output current of closed-loop Hall current sensors into a standard current signal as the input signal required by downstream application systems. By adjusting the component parameters inside the converter, the conversion ratio can be flexibly configured to meet the varying current range requirements of different backend acquisition devices.

1. Characteristics

- DC/AC current scaling conversion
- High measuring accuracy and linearity
- Analog current output signal (0-20mA, 0-40mA or custom-made)
- Protection against overvoltage
- Protection against reversed polarity
- Output protection against electrical disturbances

2. Technical Data

Rated input current	0-600mA (max)
Rated output current	0-20mA, 0-40mA or custom-made
Load Resistance	20-120 Ω (with default 40mA output)
Power supply	$\pm 15V \sim \pm 24V$ DC
Measuring accuracy	$\pm 0.05\%$
Linearity (10% -100%), 25°C	$\pm 0.005\%$
Isolation	between input, output and power supply
Isolation withstanding voltage	2.5 kV DC, 1min, leakage current 1mA
Response time	$\leq 3 \mu s$
Frequency Bandwidth (-3dB)	DC – 200kHz
Thermal drift of offset current	$\pm 0.1mA$ (-20°C ~ +70°C)

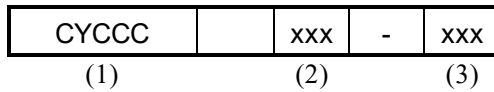
Power consumption $V_c = \pm 15VDC, \leq 36mA$ + Output Current + consumption of the connected sensor

$V_c = \pm 24VDC, \leq 40mA$ + Output Current + consumption of the connected sensor

General Data:

Operating temperature $-20^{\circ}C \sim +70^{\circ}C$
 Storage temperature $-25^{\circ}C \sim +85^{\circ}C$
 MTBF $\geq 100k$ hours

3. Definition of Part number



(1)	(2)	(3)
Series name	Rated input current	Output current
CYCCC	0-600mA	0-20mA 0-40mA Custom-made

Example 1:

Sensor Name: CYCCC400mA-20mA
 Rated Input Current: 400mA
 Rated Output Current: 20mA
 Power supply: $\pm 15V \sim \pm 24V$ DC

Relation between Input and Output:

Input Current (mA)	Analog Output Current (mA)
0	0
100	5
200	10
300	15
400	20

4. Case Style and Connection



Fig.1 Converter Case

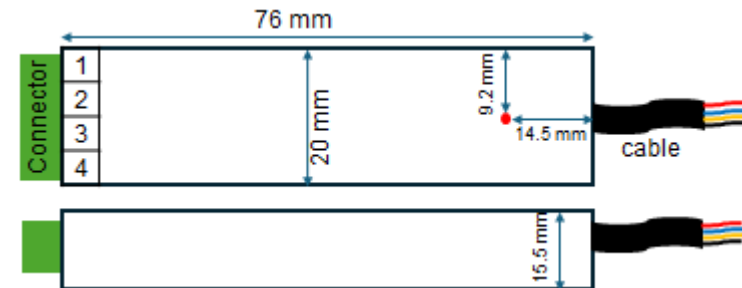


Fig.2 Case Dimensions

Pin Definition

Phoenix Connector

4 cores cable

Pin1: V+
 Pin2: V-
 Pin3: Output
 Pin4: GND

Red: V+
 Blue: V-
 Yellow: Input
 Black: GND

5. Measuring Procedure

Current sensor CYHCS-LF2000A will be used as an example.



Fig.3 Connection between converter and sensor

- 1) Install the sensor.
- 2) Connect the converter with the sensor under test using the 4-core cable supplied and make sure that the cores of different colors are connected correctly.
- 3) Connect the power supply and the output of the converter. The required measuring resistor R_m must be connected in parallel with output.
- 4) Switch on the power supply. The red indicator on the converter will light up to indicate that the converter is powered on.
- 5) For a given measured current to the sensor, the converter outputs a proportional current.

Example:

CYHCS-LF2000A and converter with default output 40mA

Sensor Input Current (A)	Sensor Output Current (mA)	Current Converter Output (mA)
0	0	0
1000	20	20
2000	400	40