Catalogue

Open Loop Hall Effect AC/DC Current Sensors

Transducers Mounted on Primary Cable

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Contents

Split Core Hall Effect AC/DC Current Sensor CYHCS-EKT

This Hall Effect current sensor is based on open loop principle and designed with a split core and a high galvanic isolation between primary conductor and secondary circuit. It can be used for measurement of AC/DC current etc. The output of the transducer reflects the real wave of the current carrying conductor. It can be mounted on the primary cable directly.

Product Characteristics	Applications
• Excellent accuracy • Very good linearity • Light in weight • Less power consumption • Window structure, easily mounting • Electrically isolating the output of the transducer from the current carrying conductor • No insertion loss • Current overload capability	• Photovoltaic equipment • Frequency conversion timing equipments • Various power supply • Uninterruptible power supplies (UPS) • Electric welding machines • Numerical controlled machine tools • Electrolyzing and electroplating equipments • Electric powered locomotive • Microcomputer monitoring • Electric power network monitoring

Electrical Data

Primary Nominal Current I_r (A)	Primary Current Measuring Range I_p(A)	Output Voltage (V)	Part number
10A	0 ~ ± 20A	2.5V±1V ±1.0%	CYHCS-EKT-10A-n
20A	0 ~ ± 40A		CYHCS-EKT-20A-n
25A	0 ~ ± 50A		CYHCS-EKT-25A-n
50A	0 ~ ± 80A		CYHCS-EKT-50A-n

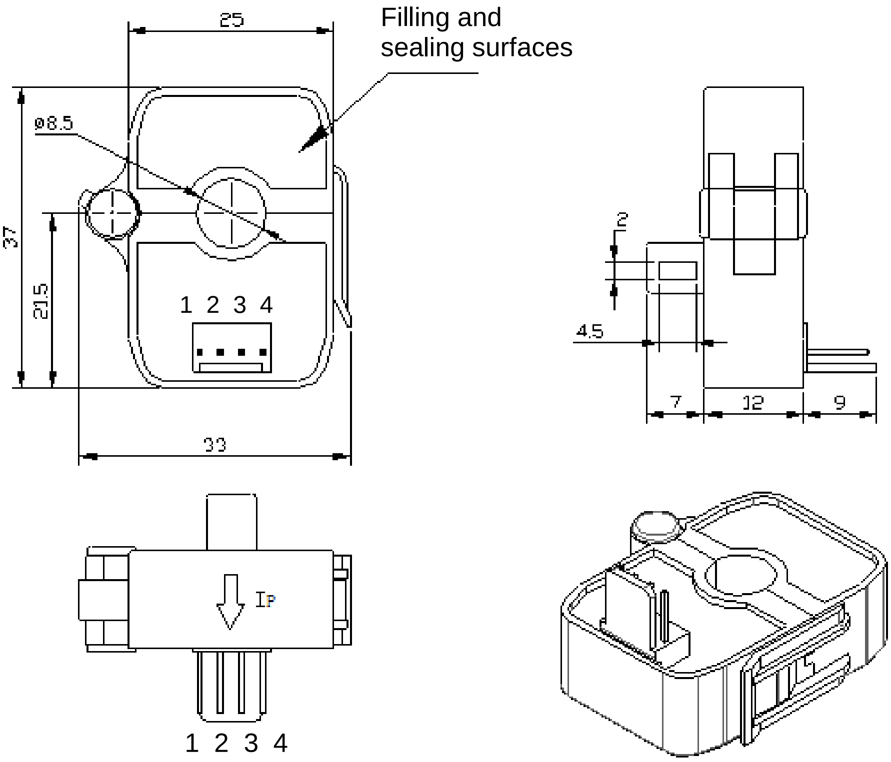
n=2 for power supply: +5VDC; n=3 for power supply: +12VDC

Supply Voltage:	V_{cc}=+12VDC ±25% or +5VDC
Current Consumption	I_c < 10mA
Isolation Voltage	2,5kV, 50/60Hz, 1min
Output Voltage at I_r, T_A=25°C:	V_{out} =2.5V±1V ±1.0%
Reverse Voltage:	V_{rev}=18V >1hr
Output Impedance:	R_{out} < 150Ω
Load Resistor:	R_L > 4.7kΩ
Accuracy at I_r, T_A=25°C (without offset),	X <1.0%
Linearity from 0 to I_r, T_A=25°C,	E_L <0.5% FS
Electric Offset Voltage, T_A=25°C,	V_{oe} = 2.5V±25mV
Magnetic Offset Voltage ($I_r \rightarrow 0$)	V_{om} <±20mV
Thermal Drift of Offset Voltage (Ip=0, -25°C~+85°C),	V_{ot} <±0.25mV/°C
Thermal Drift (-10°C to 50°C),	T.C. < ±0.1% /°C
Response Time at 90% of I_P (f=1k Hz)	t_r < 7µs
Frequency Bandwidth (-3dB),	f_b = DC-2.2 kHz

General Data

Ambient Operating Temperature,	T_A =-40°C ~ +85°C
Ambient Storage Temperature,	T_S =-55°C ~ +100°C
Unit weight:	21g / unit

PIN Definition and Dimensions

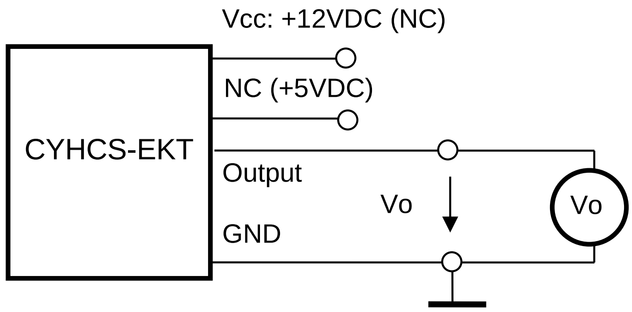


1) Pin arrangement:

1 (V+): +12V
2 (NC): NC
3 (OUT): OUTPUT
4 (GND): 0V (GND)

2) Pin arrangement:

1 (NC): NC
2 (V+): +5VDC
3 (OUT): OUTPUT
4 (GND): 0V (GND)



Notes:

1. Connect the terminals of power source, output respectively and correctly, never make wrong connection.
2. Two potentiometers can be adjusted, only if necessary, by turning slowly to the required accuracy with a small screwdriver.
3. The best accuracy can be achieved when the window is fully filled with bus-bar (current carrying conductor).
4. The in-phase output can be obtained when the direction of current of current carrying conductor is the same as the direction of arrow marked on the transducer

Split Core Hall Effect AC/DC Current Sensor CYHCS-EKC

This Hall Effect current sensor is based on open loop principle and designed with a split core and a high galvanic isolation between primary conductor and secondary circuit. It can be used for measurement of AC/DC current etc. The output of the transducer reflects the real wave of the current carrying conductor. It can be mounted on the primary cable directly.

Product Characteristics	Applications
• Excellent accuracy • Very good linearity • Light in weight • Less power consumption • Window structure, easily mounting • Electrically isolating the output of the transducer from the current carrying conductor • No insertion loss • Current overload capability	• Photovoltaic equipment • Frequency conversion timing equipment • Various power supply • Uninterruptible power supplies (UPS) • Electric welding machines • Numerical controlled machine tools • Electrolyzing and electroplating equipments • Electric powered locomotive • Microcomputer monitoring • Electric power network monitoring

Electrical Data

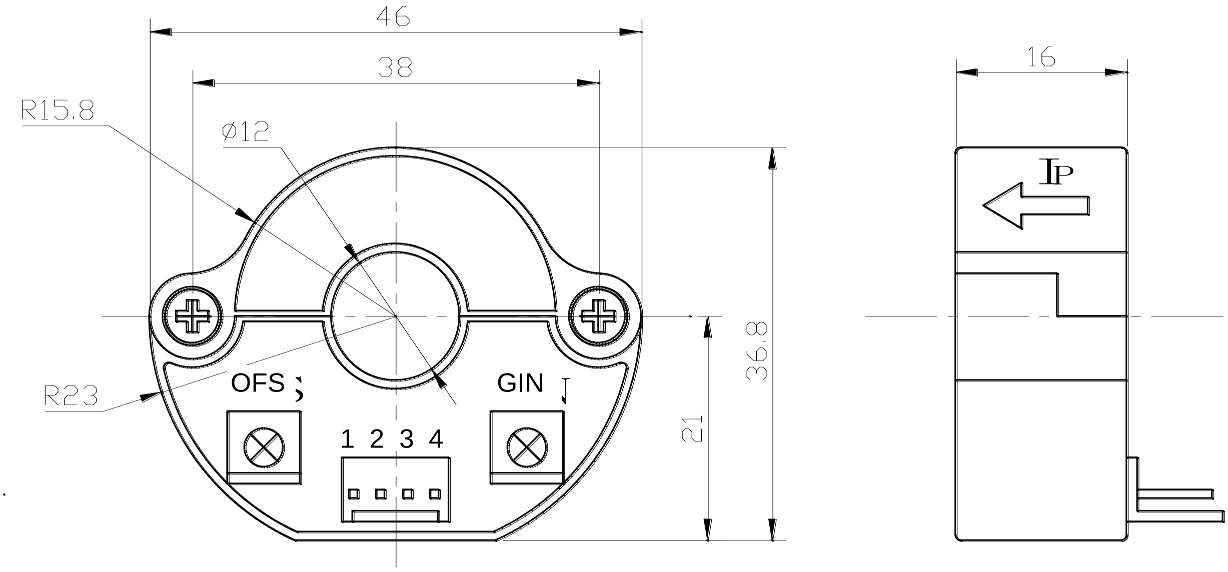
Primary Nominal Current I_r (A)	Primary Current Measuring Range I_p(A)	Output Voltage (Analog) (V)	Part number
30A	0 ~ ± 60A	4 ±1.0%	CYHCS-EKC-30A
50A	0 ~ ± 100A		CYHCS-EKC-50A
80A	0 ~ ± 160A		CYHCS-EKC-80A
100A	0 ~ ± 200A		CYHCS-EKC-100A
200A	0 ~ ± 400A		CYHCS-EKC-200A
300A	0 ~ ± 600A		CYHCS-EKC-300A

Supply Voltage:	V_{cc}=±12V~±15VDC ± 5%
Current Consumption	I_c < 25mA at Vcc=±15VDC
Isolation Voltage	2,5kV, 50/60Hz, 1min
Output Voltage at I_r, T_A=25°C:	V_{out} =4VDC
Output Impedance:	R_{out} < 150Ω
Load Resistor:	R_L > 10kΩ
Accuracy at I_r, T_A=25°C (without offset),	X <1.0%
Linearity from 0 to I_r, T_A=25°C,	E_L <1.0% FS
Electric Offset Voltage, T_A=25°C,	V_{oe} <±25mV
Magnetic Offset Voltage ($I_r \to 0$)	V_{om} <±25mV
Thermal Drift of Offset Voltage, -25°C~+85°C	V_{ot} <±1.0mV/°C
Thermal Drift (-10°C to 50°C),	T.C. < ±0.1% /°C
Response Time at 90% of I_P (f=1k Hz)	t_r < 7µs
Frequency Bandwidth (-3dB),	f_b = DC-20 kHz

General Data

Ambient Operating Temperature,	T_A =-25°C ~ +85°C
Ambient Storage Temperature,	T_S =-40°C ~ +100°C
Unit weight:	43g / unit

PIN Definition and Dimensions

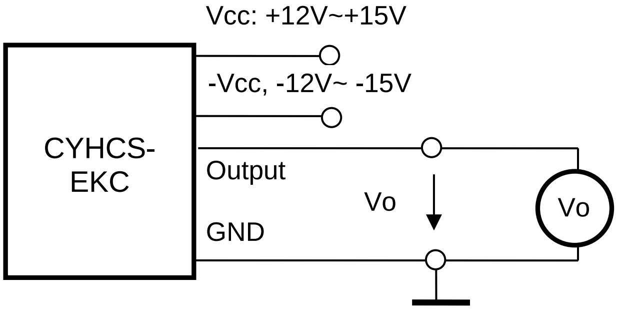


OFS: Offset Adjustment

GIN: Gain Adjustment

Pin arrangement:

1 (V+):	Vcc	2 (V-):	-Vcc
3 (OUT):	OUTPUT	4 (GND):	0V (GND)



Notes:

1. Connect the terminals of power source, output respectively and correctly, never make wrong connection.
2. Two potentiometers can be adjusted, only if necessary, by turning slowly to the required accuracy with a small screwdriver.
3. The best accuracy can be achieved when the window is fully filled with bus-bar (current carrying conductor).
4. The in-phase output can be obtained when the direction of current of current carrying conductor is the same as the direction of arrow marked on the transducer

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Split Core Hall Effect AC/DC Current Sensor CYHCS-EKGT

This Hall Effect current sensor is based on open loop principle and designed with a split core and a high galvanic isolation between primary conductor and secondary circuit. It can be used for measurement of AC/DC current etc. The output of the transducer reflects the real wave of the current carrying conductor. It can be mounted on the primary cable directly.

Product Characteristics	Applications
• Excellent accuracy • Very good linearity • Light in weight • Less power consumption • Window structure, easily mounting • Electrically isolating the output of the transducer from the current carrying conductor • No insertion loss • Current overload capability	• Photovoltaic equipment • Frequency conversion timing equipment • Various power supply • Uninterruptible power supplies (UPS) • Electric welding machines • Numerical controlled machine tools • Electrolyzing and electroplating equipment • Electric powered locomotive • Microcomputer monitoring • Electric power network monitoring

Electrical Data

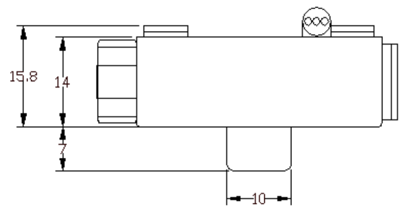
Primary Nominal Current I_r (A)	Primary Current Measuring Range I_p(A)	Output Voltage (Analog) (V)	Part number
50A	0 ~ ± 60A	2.5V±2V ±1.0%	CYHCS-EKGT-50A
100A	0 ~ ± 120A		CYHCS-EKGT-100A
200A	0 ~ ± 240A		CYHCS-EKGT-200A
300A	0 ~ ± 360A		CYHCS-EKGT-300A
400A	0 ~ ± 480A		CYHCS-EKGT-400A
500A	0 ~ ± 600A		CYHCS-EKGT-500A

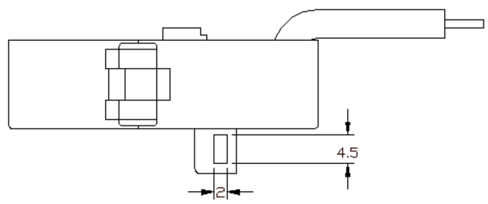
Supply Voltage:	V_{cc}=+12VDC ± 5%
Current Consumption	I_c < 25mA
Isolation Voltage	2,5kV, 50/60Hz, 1min
Output Voltage at I_r, T_A=25°C:	V_{out} =2.5V±2V ±1.0%
Output Impedance:	R_{out} < 150Ω
Load Resistor:	R_L > 10kΩ
Accuracy at I_r, T_A=25°C (without offset),	X <1.0%
Linearity from 0 to I_r, T_A=25°C,	E_L <1.0% FS
Electric Offset Voltage, T_A=25°C,	V_{oe} =2.5V±1.0%
Magnetic Offset Voltage ($I_r \rightarrow 0$)	V_{om} <±20mV
Thermal Drift of Offset Voltage, (-25°C~+85°C)	V_{ot} <±0.5mV/°C
Thermal Drift (-10°C to 50°C),	T.C. < ±0.1% /°C
Response Time at 90% of I_P (f=1k Hz)	t_r < 7µs
Frequency Bandwidth (-3dB),	f_b = DC-20 kHz

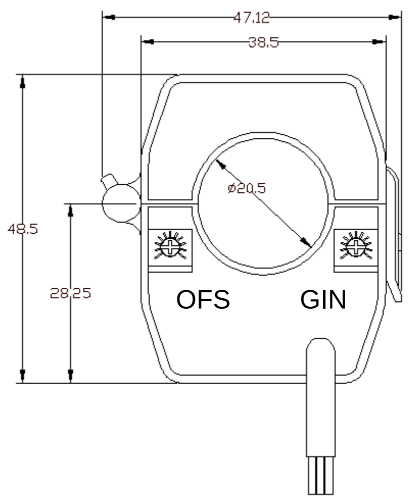
General Data

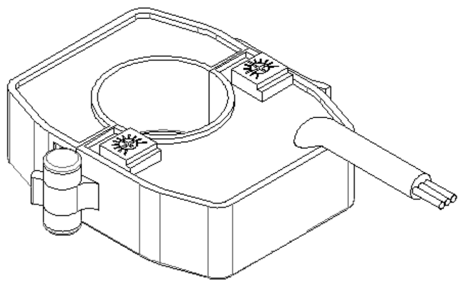
Ambient Operating Temperature,	T_A =-25°C ~ +85°C
Ambient Storage Temperature,	T_S =-40°C ~ +100°C

PIN Definition and Dimensions







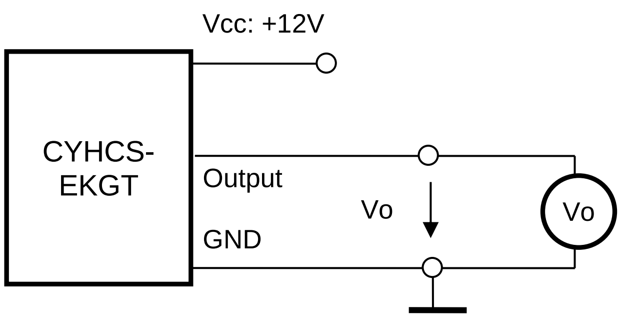


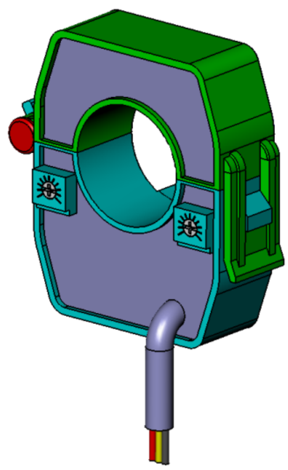
OFS: Offset Adjustment

GIN: Gain Adjustment

Cable arrangement:

1 (red):	Vcc
2 (yellow):	OUTPUT
3 (black):	0V (GND)





Notes:

1. Connect the terminals of power source, output respectively and correctly, never make wrong connection.
2. Two potentiometers can be adjusted, only if necessary, by turning slowly to the required accuracy with a small screwdriver.
3. The best accuracy can be achieved when the window is fully filled with bus-bar (current carrying conductor).
4. The in-phase output can be obtained when the direction of current of current carrying conductor is the same as the direction of arrow marked on the transducer

Hall Effect AC/DC Current Sensor CYHCS-EDT

This Hall Effect current sensor is based on open loop principle and designed with a solid core and a high galvanic isolation between primary conductor and secondary circuit. It can be used for measurement of AC/DC current etc. The output of the transducer reflects the real wave of the current carrying conductor. It can be mounted on the primary cable directly.

Product Characteristics	Applications
• Excellent accuracy • Very good linearity • Light in weight • Less power consumption • Window structure, easily mounting • Electrically isolating the output of the transducer from the current carrying conductor • No insertion loss • Current overload capability	• Photovoltaic equipment • Frequency conversion timing equipment • Various power supply • Uninterruptible power supplies (UPS) • Electric welding machines • Numerical controlled machine tools • Electrolyzing and electroplating equipment • Electric powered locomotive • Microcomputer monitoring • Electric power network monitoring

Electrical Data/Input

Primary Nominal Current I_r (A)	Primary Current Measuring Range I_p(A)	Output Voltage (Analog) (V)	Part number
30A	0 ~ ± 45A	2.5V±1.25 ±1.0%	CYHCS-EDT-30A
50A	0 ~ ± 75A		CYHCS-EDT-50A
100A	0 ~ ± 150A		CYHCS-EDT-100A
200A	0 ~ ± 300A		CYHCS-EDT-200A
300A	0 ~ ± 450A		CYHCS-EDT-300A
400A	0 ~ ± 600A		CYHCS-EDT-400A
500A	0 ~ ± 750A		CYHCS-EDT-500A

Supply Voltage:	V_{cc}=+5VDC ± 5%
Current Consumption	I_c < 20mA
Isolation Voltage	2,5kV, 50/60Hz, 1min

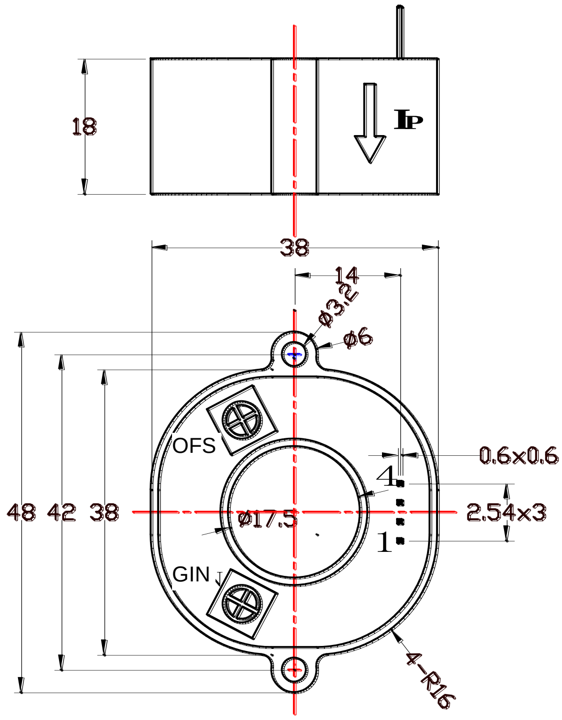
Electrical Data/Output

Output Voltage at I_r, T_A=25°C:	V_{out} =2.5V±1.25V ±1.0%
Output Impedance:	R_{out} < 150Ω
Load Resistor:	R_L > 2kΩ

Accuracy

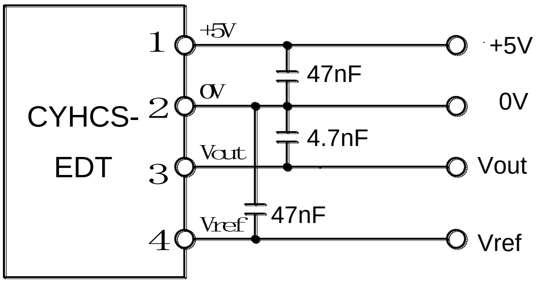
Accuracy at I_r, T_A=25°C (without offset),	X <1.0%
Linearity from 0 to I_r, T_A=25°C,	E_L <0.5% FS
Electric Offset Voltage, T_A=25°C,	V_{oe} =2.5V±0.025V
Thermal Drift of Offset Voltage (Ip=0, -40°C~+100°C),	V_{ot} <±0.5mV/°C
Thermal Drift (-10°C to 50°C),	T.C. < ±0.1% /°C
Response Time at 90% of I_P (f=1k Hz)	t_r < 7µs
Frequency Bandwidth (-3dB),	f_b = DC-20 kHz
Ambient Operating Temperature,	T_A =-25°C ~ +85°C
Ambient Storage Temperature,	T_S =-40°C ~ +105°C

PIN Definition and Dimensions



OFS: Offset Adjustment

GIN: Gain Adjustment



Pin arrangement:

1 (Vcc): +5V
2 (GND): 0V
3 (OUT): OUTPUT
4 (Ref): Vref=2.5V

Window size Φ17.5mm

Notes:

1. Connect the terminals of power source, output respectively and correctly, never make wrong connection.
2. Two potentiometers can be adjusted, only if necessary, by turning slowly to the required accuracy with a small screwdriver.
3. The best accuracy can be achieved when the window is fully filled with bus-bar (current carrying conductor).
4. The in-phase output can be obtained when the direction of current of current carrying conductor is the same as the direction of arrow marked on the transducer

Hall Effect AC/DC Current Sensor CYHCS-ED

This Hall Effect current sensor is based on open loop principle and designed with a solid core and a high galvanic isolation between primary conductor and secondary circuit. It can be used for measurement of AC/DC current etc. The output of the transducer reflects the real wave of the current carrying conductor. It can be mounted on the primary cable directly.

Product Characteristics	Applications
• Excellent accuracy • Very good linearity • Light in weight • Less power consumption • Window structure, easily mounting • Electrically isolating the output of the transducer from the current carrying conductor • No insertion loss • Current overload capability	• Photovoltaic equipment • Frequency conversion timing equipment • Various power supply • Uninterruptible power supplies (UPS) • Electric welding machines • Numerical controlled machine tools • Electrolyzing and electroplating equipment • Electric powered locomotive • Microcomputer monitoring • Electric power network monitoring

Electrical Data/Input

Primary Nominal Current I_r (A)	Primary Current Measuring Range I_p(A)	Output Voltage (Analog) (V)	Part number
30A	0 ~ ± 60A	4 ±1.0%	CYHCS-ED-30A
40A	0 ~ ± 80A		CYHCS-ED-40A
50A	0 ~ ± 100A		CYHCS-ED-50A
100A	0 ~ ± 200A		CYHCS-ED-100A
200A	0 ~ ± 400A		CYHCS-ED-200A
300A	0 ~ ± 600A		CYHCS-ED-300A
400A	0 ~ ± 800A		CYHCS-ED-400A
500A	0 ~ ± 1000A		CYHCS-ED-500A
600A	0 ~ ± 1200A		CYHCS-ED-600A

Supply Voltage: V_{cc}=±15VDC ± 5%
Current Consumption I_c < 20mA
Isolation Voltage 2,5kV, 50/60Hz, 1min

Electrical Data/Output

Output Voltage at I_r, T_A=25°C: V_{out} =4VDC
Output Impedance: R_{out} < 150Ω
Load Resistor: R_L > 10kΩ

Accuracy

Accuracy at I_r, T_A=25°C (without offset), X <1.0%
Linearity from 0 to I_r, T_A=25°C, E_L <1.0% FS
Electric Offset Voltage, T_A=25°C, V_{oe} <±25mV
Magnetic Offset Voltage (I_r →0) V_{om} <±20mV
Thermal Drift of Offset Voltage, V_{ot} <±1.0mV/°C
Thermal Drift (-10°C to 50°C), T.C. < ±0.1% /°C
Response Time at 90% of I_P (f=1k Hz) t_r < 7µs
Frequency Bandwidth (-3dB), f_b = DC-20 kHz

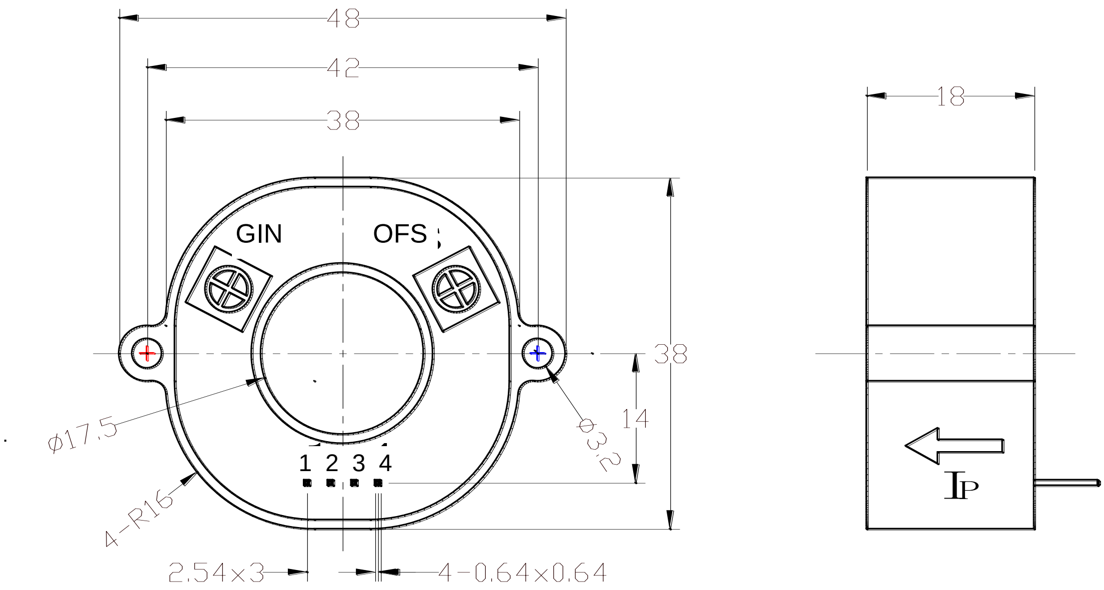
General Data

Ambient Operating Temperature, T_A =-25°C ~ +85°C

Ambient Storage Temperature, T_S =-40°C ~ +100°C

Unit weight: 60g /unit

PIN Definition and Dimensions



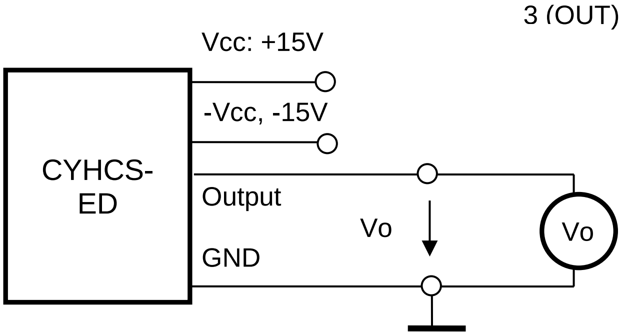
OFS: Offset Adjustment

GIN: Gain Adjustment

Pin arrangement:

1 (V+): Vcc 2 (V-): -Vcc

3 (OUT): OI)



Notes:

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2. Two potentiometers can be adjusted, only if necessary, by turning slowly to the required accuracy with a small screwdriver.
3. The best accuracy can be achieved when the window is fully filled with bus-bar (current carrying conductor).
4. The in-phase output can be obtained when the direction of current of current carrying conductor is the same as the direction of arrow marked on the transducer