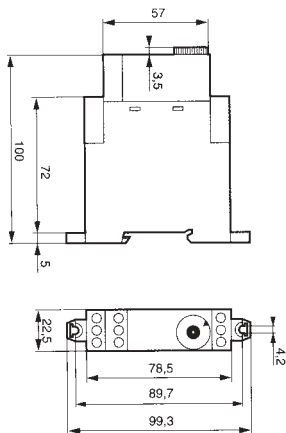


**Liquid Level Control Relay
EN Series**

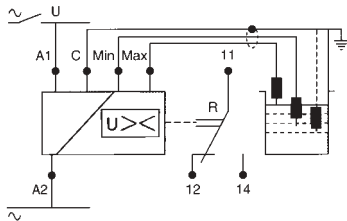


DIN rail mounted relay for level control of conductive liquids. The principle is based on the measurement of apparent resistance of the liquid between two submerged probes. When this value is lower than the preset threshold, the output relay changes state. 'Up' filling or 'down' emptying control selectable via front face dip switch. Applications for level control include environmental, chemical industries and food technology etc. Also available is a 3 probe electrode set with probes of 1000mm (which may be cut to length) complete with a light, compact electrode holder which is particularly suitable for drinks vending machines or applications where space is limited.

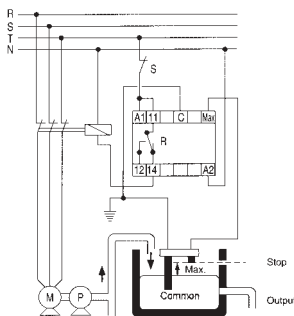
- Supply voltage 230 VAC
- Operating range 0.85 to 1.15 x Un
- Power consumption 3 VA
- Adjustable sensitivity 5K to 100K ohm
- Measured accuracy 0 to 30% at max. sensitivity
- Electrode voltage max. 24 VAC 50/60 Hz
- Electrode current max. 1 mA 50/60 Hz
- Response time 300ms (high level), 500ms (low level)
- Output relay 1 AgCdO changeover, 8A VAC max.
- Galvanic isolation Class II VDE 0551 (4kV, 8mm creepage distance)
- Contact isolation 2.5kV
- Temperature -20°C to +60°C



Wiring Diagrams and Applications



A1 - A2 : Power supply

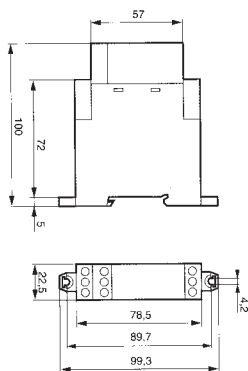


Applications

Note: The probe cables do not require screening but should not be run in parallel with the power supply cables. A screened cable can be used with the screening connected to the common.

Stock No.	Manf Ref'	Type	Voltage	Unit Price		
				1-4	5-9	10+
3261644	84 870 004	230VAC RELAY		39.71	37.33	35.34
3266465	79 696 044	ELECTRODE SET		30.70	28.24	24.25

**Phase Control Relay
EWS Series**

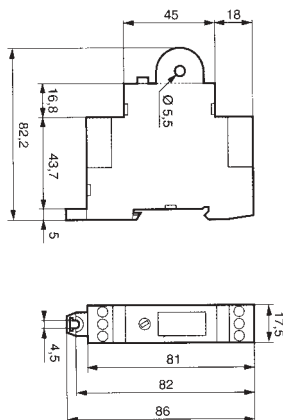


DIN rail mounted 3 phase control relays which monitors phase sequence and loss of one of three phases. Multi-voltage powered from the supply being measured. LED indication of relay status. Available with 1 or 2 changeover relay outputs.

- Voltage range 3 x 200 VAC to 3 x 500 VAC (SPCO)
3 x 200 VAC to 3 x 460 VAC (DPCO)
- Power consumption 5VA at 200 VAC, 25VA at 460 VAC
- Relay output SPCO or DPCO
- Contact rating 8A at 250 VAC
- Pick up delay 200ms max.
- Drop out delay 300ms max. on loss of phase
- Dielectric strength 2.5 kV
- Electrical life 10⁵ at 2kVA resistive
- Mechanical life 2 x 10⁶
- Temperature -20°C to +60°C

Stock No.	Manf Ref'	Type	Unit Price		
			1-4	5-9	10+
3261713	84 892 299	SPCO	30.50	28.67	27.15
3266361	84 873 004	DPCO	34.60	32.52	30.79

**AC Current Control Relay
MCI Series**



DIN rail mounted AC current control relay to monitor currents from 1A to 20A through an integrated current transformer. Output relay changes state at the end of a time delay T1 when the value of controlled current reaches the preset threshold. It returns to its initial state at the end of T2 when the current drops below the fixed hysteresis of 15%.

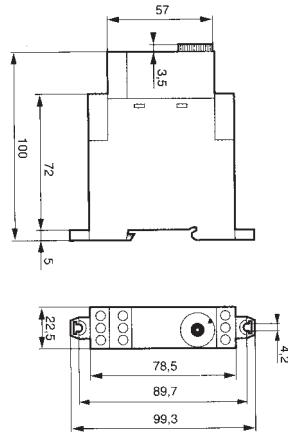
- Supply voltage 24 VAC/DC, 110-240 VAC, 50/60Hz
- Power consumption 0.6W at 24 VDC, 9VA at 240 VAC
- Current range 1A to 20A
- Threshold crossing delay 400ms upward / 120ms downward (± 50%)
- Hysteresis adjustment Fixed 15% of preset threshold
- Display accuracy ± 10% of full scale
- Repetition accuracy ± 0.45%
- Relay output One normally open contact
- Contact rating 5A at 250 VAC
- Temperature -20°C to +60°C

Stock No.	Manf Ref'	Type	Unit Price		
			1-4	5-9	10+
3266364	84 871 102	MCI RELAY	48.88	45.95	43.50

**Current Control Relay
EI Series**



Subject to design change

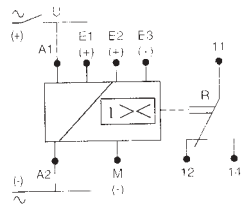


DIN rail mounted over and under current control relays to monitor AC & DC current between 2-500mA (EIL) or 0.1-10A (EIH). Output relay will change state at the end of a time delay T1 when the value of control current reaches the preset threshold. It returns instantly to its initial state when the current drops below the hysteresis threshold or when power is removed, except in latch mode where power has to be removed before the relay will return to its initial state. It also provides a power on inhibit delay T2 of up to 20 secs so that start-up current surges can be ignored. Separate adjustment for threshold and hysteresis setting. Selection of overcurrent and undercurrent by means of dip switch.

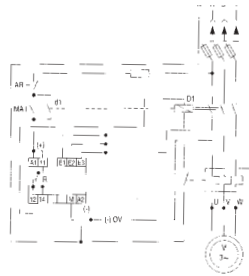
Supply voltage	230 VAC (galvanic isolation by transformer) 24 VDC (no galvanic isolation)
Power consumption	1W dc, 3VA ac
Signal frequency	40 - 500Hz
Adjustable hysteresis	5 - 50% of the displayed threshold
Threshold value	10 - 100% of the measurement range
Repetition accuracy	± 0.1%
Energisation delay T2	1s - 20s ±10%
Threshold crossing delay	0.1s - 3s
Relay output	SPCO
Contact rating	8A at 250 VAC
Temperature	-20°C to +60°C

Wiring Diagrams and Applications

EIL / EIH



A1 - A2 : Power supply



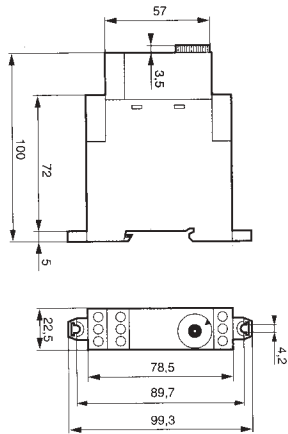
Applications

Measurement range	EIL			EIH		
Inputs	E1-M	E2-M	E3-M	E1-M	E2-M	E3-M
Sensitivity	2 to 20mA	10 to 100mA	50 to 500mA	0.1 to 1A	0.5 to 5A	1 to 10A
Input res. ohm	5	1	0.2	0.1	0.02	0.01

Note:The negative poles of the auxiliary power supply and the measurement circuit are connected inside the unit.

Stock No.	Manf Ref'	Type	Voltage	Measurement range	Unit Price		
					1-4	5-9	10+
3261647	84 871 020	EIL	24VDC	2mA - 500mA	59.57	56.00	53.02
3261650	84 871 024	EIL	230VAC	2mA - 500mA	59.57	56.00	53.02
3261653	84 871 030	EIH	24VDC	0.1A - 10A	59.57	56.00	53.02
3261665	84 871 034	EIH	230VAC	0.1A - 10A	59.57	56.00	53.02

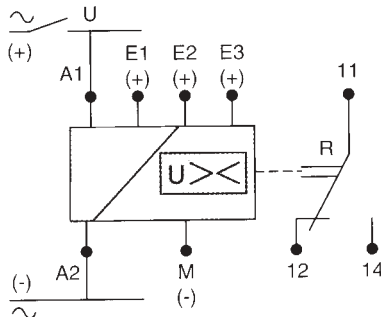
**Voltage Control Relay
EU Series**



DIN rail mounted over and under voltage control relays to monitor AC & DC voltages between 15 to 600V. Output relay will change state at the end of a time delay T when the value of control voltage reaches the preset threshold level, which can be set between 0.1 and 3s. It returns instantly to its initial state when the voltage drops below 5 to 50% of the hysteresis threshold, except in latch mode where power has to be removed before the relay will return to its initial state. Separate adjustment for threshold and hysteresis setting.

Measurement range	15 to 600V
Supply voltage	230 VAC (galvanic isolation by transformer) 24 VDC (no galvanic isolation)
Power consumption	1W dc, 3VA ac
Operating range	0.85 to 1.15% Un
Signal frequency	40 - 500Hz
Hysteresis adjustment	5 - 50% of the displayed threshold
Threshold adjustment	1 - 100% of the measurement range
Display accuracy	± 10% of the full scale
Threshold crossing delay	0.1s - 3s
Relay output	SPCO
Contact rating	8A at 250 VAC
Temperature	-20°C to +60°C

Wiring Diagrams and Applications



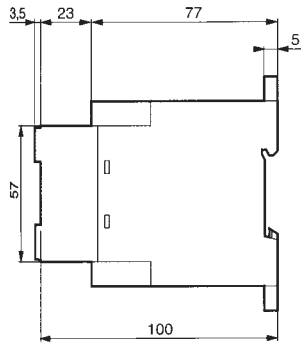
A1 - A2 : Power supply

Measurement range	E1-M	E2-M	E3-M
Inputs	0.2 to 2V	1 to 10V	6 to 60V
Sensitivity	2k	1k	60k
Input res. ohm			

Note:The negative poles of the auxiliary power supply and the measurement circuit are connected inside the unit.

Stock No.	Manf Ref'	Type	Voltage	Measurement range	Unit Price		
					1-4	5-9	10+
3261671	84 872 030	EUH	24VDC	15 - 600V	56.52	52.13	50.30
3261680	84 872 034	EUH	230VAC	15 - 600V	56.52	52.13	50.30

**Underspeed Control Relay
FRL Series**



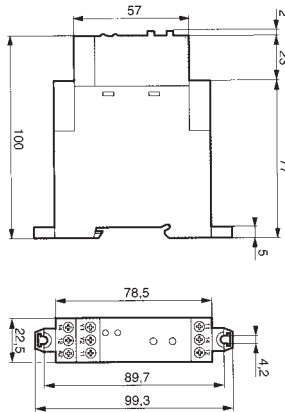
DIN rail mounted control relay to monitor underspeed, stopping or jamming of motors. Typically an inductive proximity sensor is mounted close to a toothed wheel to provide an output pulse proportional to shaft rotation. The relay output is energised upon receiving pulses of frequency above a preset level and de-energises when the frequency falls below this level. Optional lockout mode with manual reset. LED indication of relay status and power supply.

Supply voltage	24 VDC (without galvanic isolation)
Power consumption	1W
Input signal	Sensor (3 wire or namur), volt free contact or voltage
Timing ranges	0.1-1s, 1-10s, 0.1-1min, 1-10min
Hysteresis adjustment	5% of displayed threshold
Display accuracy	± 10% of full scale
Repetition accuracy	± 0.5% with constant parameters
Relay output	SPCO, 8A at 100 VAC
LED indication	Yellow/relay status, green/power supply
Temperature	-20°C to +60°C

Stock No.	Manf Ref'	Type	Unit Price		
			1-4	5-9	10+
3261710	84 874 300	UNDERSPEED RELAY	70.21	66.00	62.49

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**Motor Thermal Protection
Relay, ETM2**

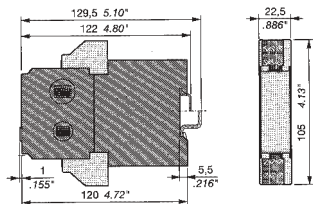


DIN rail mounted motor thermal protection relay to be used in combination with PTC thermistor probes for protection of machines (motors, alternators, transformers, etc). Relay will detect a rise in temperature via an increase in resistance of the probes and open the power supply to the protected equipment. Test button to simulate thermal overload. Optional lockout mode with manual or automatic reset. Line break or probe short-circuit detection.

Supply voltage	24 VDC or 230 VAC
Max res. of cold probes	1500 ohm
Trip threshold	3100 ohm ± 10%
Reset threshold	1650 ohm ± 10%
Reset time	< 500ms
Response time	< 50ms
Relay output	SPCO, 8A at 250 VAC
LED indication	Yellow/relay status, green/power supply
Temperature	-20°C to +60°C

Stock No.	Manf Ref'	Type	Unit Price		
			1-4	5-9	10+
3266367	84 874 025	24VDC	35.10	32.99	31.24
3266370	84 874 024	230VAC	35.10	32.99	31.24

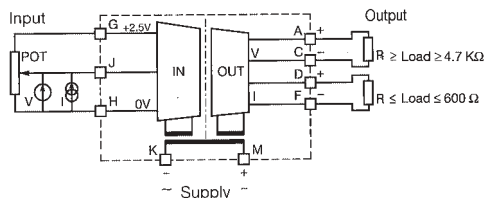
Analogue Signal Converter



DIN rail mounted analogue signal converters offering more than 120 different configurations of standard signal conversion. Unit may be configured to fail safe either high or low upon loss of input signal. Outputs are short circuit protected. Plug-in omniconnect terminals for all connections provide easy installation.

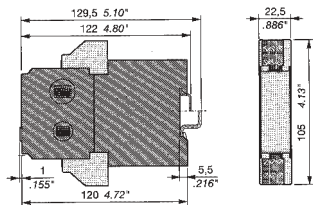
Input circuit range	
Current	0-20mA, 4-20mA, 10-50mA, 0-1mA
Voltage	0-100mV, 0-1V, 0-5V, 0-10V, 2-10V ± 10%
Potentiometer	470 ohm to 1M ohm
Output circuit range	
Current	0-1mA, 0-20mA, 4-20mA, 0-10mA, 2-10mA
Voltage	0-10V, 2-10V, 0-5V, 1-5V
Accuracy	0.1% of end value
Supply circuit	
Supply voltage	24-48 VDC or 110-230 VAC
Power consumption	2W at 24 VDC, 4.5 VA at 230VAC
Isolation	1.5kV (all circuits)
LED display	Green, supply on indication
Temperature	-20°C to +60°C

Wiring Diagram



Stock No.	Manf Ref'	Type	Voltage	Unit Price		
				1-4	5-9	10+
3502831	0040 000.17	C.A.I.S. UNI	24-48VDC	145.90	141.52	137.15
3502834	0040 001.04	C.A.I.S. UNI	110-230VAC	145.90	141.52	137.15

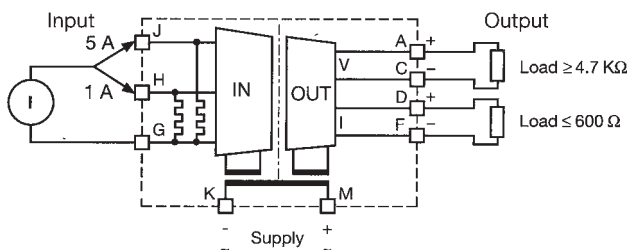
RMS Current Signal Converter



DIN rail mounted RMS converters for current signals up to 1A and up to 5A with any waveform, within a frequency range from 0 to 600Hz. Outputs are short circuit protected. Plug-in omniconnect terminals for all connections provide easy installation.

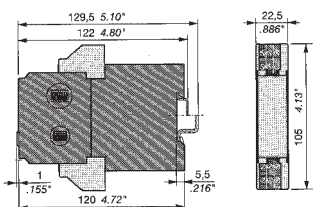
Input circuit range	
Input signal	0-1A or 0-5A, AC or DC
Frequency	0-600Hz
Overload current	10 x In for 2secs
Output circuit range	
Current	0-1mA, 0-20mA, 4-20mA, 0-10mA, 2-10mA
Voltage	0-10V, 2-10V, 0-5V, 1-5V
Accuracy	0.5%
Supply circuit	
Supply voltage	24-48 VDC or 110-230 VAC
Power consumption	2W at 24 VDC, 4.5 VA at 230 VAC
Isolation	1.5kV (all circuits)
LED display	Green, supply on indication
Temperature	-20°C to +60°C

Wiring Diagram



Stock No.	Manf Ref'	Type	Voltage	Unit Price		
				1-4	5-9	10+
3502684	0040 006.01	C.A.I.S. UNI-RMS-I	24-48VDC	172.50	167.33	162.15
3502687	0040 007.02	C.A.I.S. UNI-RMS-I	110-230VAC	172.50	167.33	162.15

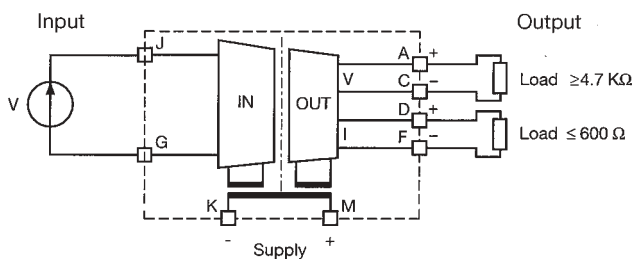
RMS Voltage Signal Converter



DIN rail mounted RMS converters for voltage signals up to 600V with any waveform, within a frequency range from 0 to 600Hz. Outputs are short circuit protected. Plug-in omniconnect terminals for all connections provide easy installation.

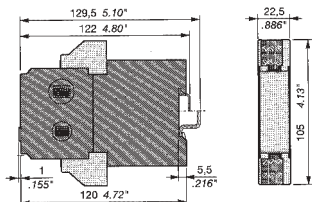
Input circuit range	
Input signal	8 ranges between 0-600V
Frequency	0-600Hz
Input load	>800K ohm
Offset	adjustable ± 20%
Output circuit range	
Current	0-1mA, 0-20mA, 4-20mA, 0-10mA, 2-10mA
Voltage	0-10V, 2-10V, 0-5V, 1-5V ± 10%
Accuracy	0.5%
Supply circuit	
Supply voltage	24-48 VDC or 110-230 VAC
Power consumption	2W at 24 VDC, 4.5 VA at 230 VAC
Isolation	1.5kV (all circuits)
LED display	Green, supply on indication
Temperature	-20°C to +60°C

Wiring Diagram



Stock No.	Manf Ref'	Type	Voltage	Unit Price		
				1-4	5-9	10+
3502690	0040 008.13	C.A.I.S. UNI-RMS-V	24-48VDC	174.50	169.27	164.03
3502693	0040 009.14	C.A.I.S. UNI-RMS-V	110-230VAC	174.50	169.27	164.03

**PT 10, PT 100, PT 1000
Signal Converter**

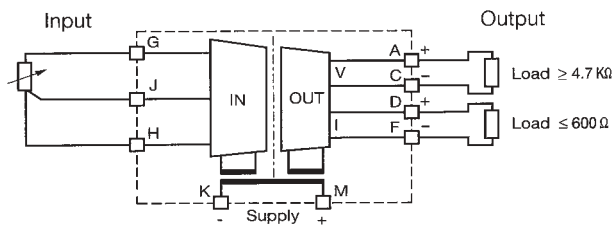


DIN rail mounted temperature signal converters for PT 10, PT100, PT1000 signals. Unit may be configured to fail safe either high or low upon loss of input signal. Outputs are short circuit protected. Plug-in omniconnect terminals for all connections provide easy installation.

- Input circuit range**
- Temperature ranges Adjustable from 0°C to max.
- PT10 0-500°C, 0-650°C, 0-850°C
- PT100 0-50°C, 0-500°C,
- PT1000 0-20°C, 0-60°C
- Output circuit range**
- Current 0-1mA, 0-20mA, 4-20mA, 0-10mA, 2-10mA
- Voltage 0-5V, 1-5V, 0-10V, 2-10V, all ±10%
- Accuracy 0.2% of end value
- Supply circuit**
- Supply voltage 24-48 VDC or 110-230 VAC
- Power consumption 2W at 24 VDC, 4.5 VA at 230 VAC
- Isolation 1.5kV (all circuits)
- LED display Green, supply on indication
- Temperature -20°C to +60°C

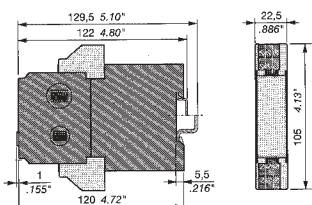
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Wiring Diagram



Stock No.	Manf Ref'	Type	Voltage	Unit Price		
				1-4	5-9	10+
3502696	0040 002.05	C.A.I.S. UNI-RTD	24-48VDC	176.00	170.72	165.44
3502699	0040 003.06	C.A.I.S. UNI-RTD	110-230VAC	176.00	170.72	165.44

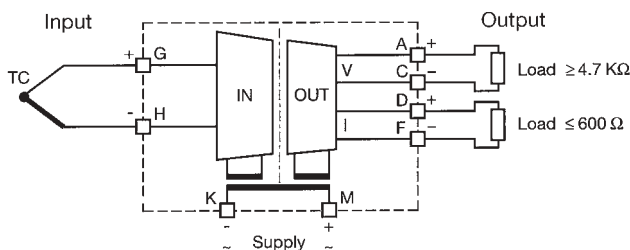
**Thermocouple
Signal Converter**



DIN rail mounted temperature signal converters for types K, J, T, S, E, N, R, B thermoelement sensors plus an additional adjustable voltage signal input. Differential temperature measurement using two thermocouples. Unit may be configured to fail safe either high or low upon loss of input signal. Outputs are short circuit protected. Plug-in omniconnect terminals provide easy installation.

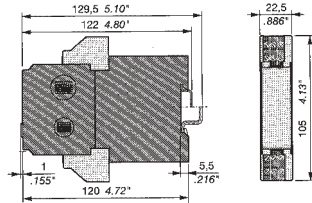
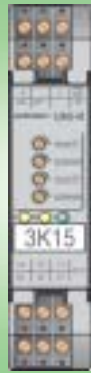
- Input circuit range**
- Thermocouples K, J, T, S, E, N, R, B
- Offset adjustable ±10%
- Voltage input 0-2mV, 0-50mV continuously adjustable between 2 & 50mV
- Output circuit range**
- Current 0-1mA, 0-20mA, 4-20mA, 0-10mA, 2-10mA
- Voltage 0-5V, 1-5V, 0-10V, 2-10V, -10-+10V, -5-+5V
- Accuracy 0.1% of end value
- Supply circuit**
- Supply voltage 24-48 VDC or 110-230 VAC
- Power consumption 2W at 24 VDC, 4.5 VA at 230 VAC
- Isolation 1.5kV (all circuits)
- LED display Green, supply on indication
- Temperature -20°C to +60°C

Wiring Diagram



Stock No.	Manf Ref'	Type	Voltage	Unit Price		
				1-4	5-9	10+
3502702	0040 004.07	C.A.I.S. UNI-TC	24-48VDC	174.50	169.27	164.03
3502705	0040 005.00	C.A.I.S. UNI-TC	110-230VAC	174.50	169.27	164.03

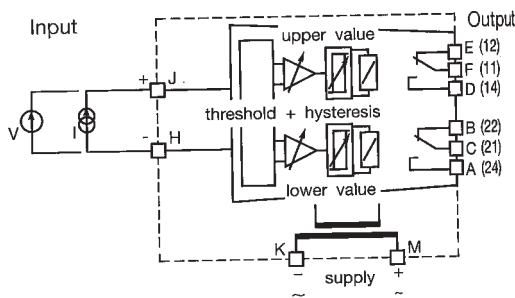
**Analogue Signal Converter
Dual Level Threshold Relay**



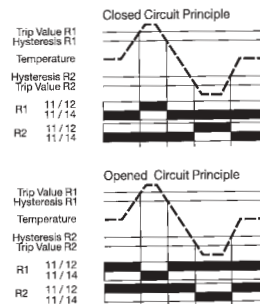
DIN rail mounted analogue signal converters with single pole change-over relay contacts for adjustable upper and lower level thresholds. Open or closed circuit system adjustable by dip switches. Thresholds and hysteresis adjustable by front side potentiometers. Yellow LED's for indication of relay status. Outputs are short circuit protected. Plug-in omniconnect terminals for all connections provide easy installation.

- Input circuit range**
 Current 0-20mA, 4-20mA
 Voltage 0-10V, 0-1V, 0-5V, -10-+10V
 Input load 50 ohm (current), >5M ohm (voltage)
 Adjustable threshold 2-100% of the configured input range
 Adjustable hysteresis 5-50% of the adjusted threshold
- Output circuit range**
 Contact arrangement 2 x SPCO
 Contact rating 4A at 230 VAC, 4A at 24 VDC (resistive)
 3A at 230 VAC, 2A at 24 VDC (inductive)
- Supply circuit**
 Supply voltage 24-48 VDC or 110-230 VAC
 Power consumption 2W at 24 VDC, 4.5 VA at 230 VAC
 Isolation 1.5kV (all circuits)
 LED display Green/supply on, yellow/relay status
 Temperature -20°C to +60°C

Wiring Diagram

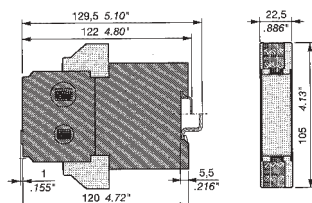


Basic Configurations



Stock No.	Manf Ref'	Type	Voltage	Unit Price		
				1-4	5-9	10+
3502708	0040 010.00	C.A.I.S. UNI-R	24-48VDC	120.00	116.40	112.80
3502711	0040 011.25	C.A.I.S. UNI-R	110-230VAC	120.00	116.40	112.80

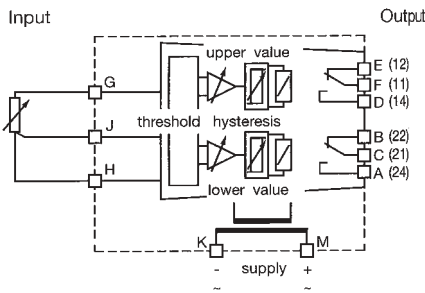
**PT100 Signal Converter
Dual Level Threshold Relay**



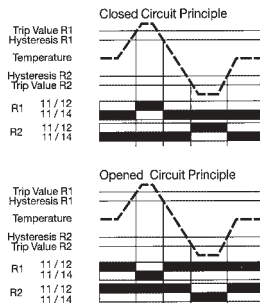
DIN rail mounted PT100 signal converters with single pole changeover relay contacts for adjustable upper and lower level thresholds. Open or closed circuit system adjustable by dip switches. Thresholds and hysteresis adjustable by front side potentiometers. Yellow LED's for indication of relay status. Outputs are short circuit protected. Plug-in omniconnect terminals for all connections provide easy installation.

- Input circuit range**
 Resistance thermometer PT100
 Adjustable threshold 2-100% of the configured input range
 Adjustable hysteresis 5-50% of the adjusted threshold
- Output circuit range**
 Contact arrangement 2 x SPCO
 Contact rating 4A at 230 VAC, 4A at 24 VDC (resistive)
 3A at 230 VAC, 2A at 24 VDC (inductive)
- Supply circuit**
 Supply voltage 24-48 VDC or 110-230 VAC
 Power consumption 2W at 24 VDC, 4.5 VA at 230 VAC
 Isolation 1.5kV (all circuits)
 LED display Green/supply on, yellow/relay status
 Temperature -20°C to +60°C

Wiring Diagram

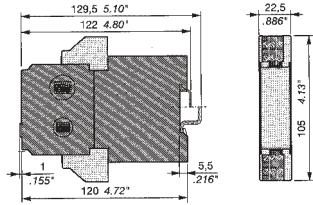
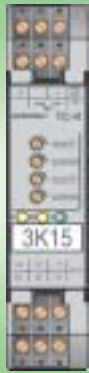


Basic Configurations



Stock No.	Manf Ref'	Type	Voltage	Unit Price		
				1-4	5-9	10+
3502714	0040 012.26	C.A.I.S. UNI-RTD-R	24-48VDC	135.70	131.63	127.56
3502717	0040 013.27	C.A.I.S. UNI-RTD-R	110-230VAC	135.70	131.63	127.56

**Thermocouple Converter
Dual Level Threshold Relay**



DIN rail mounted temperature signal converters for types K, J, T, S, thermoelement sensors with single pole changeover relay contacts for adjustable upper and lower level thresholds. Open or closed circuit system adjustable by dip switches. Thresholds and hysteresis adjustable by front side potentiometers. Yellow LED's for indication of relay status. Outputs are short circuit protected. Plug-in omniconnect terminals for all connections provide easy installation.

Input circuit range

Thermocouples K, J, T, S
Adjustable threshold 2-100% of the configured input range
Adjustable hysteresis 5-50% of the adjusted threshold

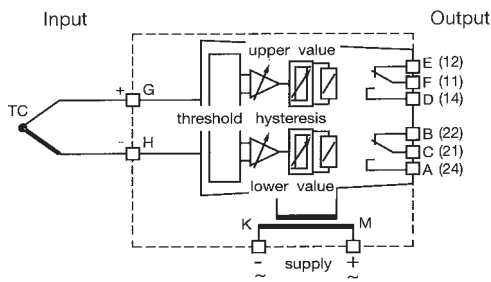
Output circuit range

Contact arrangement 2 x SPCO
Contact rating 4A at 230 VAC, 4A at 24 VDC (resistive)
3A at 230 VAC, 2A at 24 VDC (inductive)

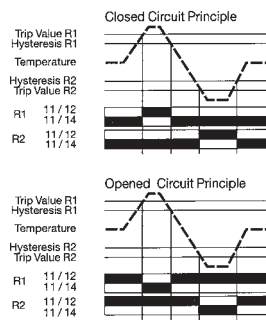
Supply circuit

Supply voltage 24-48 VDC or 110-230 VAC
Power consumption 2W at 24 VDC, 4.5 VA at 230 VAC
Isolation 1.5kV (all circuits)
LED display Green/supply on, yellow/relay status
Temperature -20°C to +60°C

Wiring Diagram



Basic Configurations



Stock No.	Manf Ref'	Type	Voltage	Unit Price		
				1-4	5-9	10+
3502720	0040 014.20	C.A.I.S. UNI-TC-R	24-48VDC	135.70	131.63	127.56
3502723	0040 015.21	C.A.I.S. UNI-TC-R	110-230VAC	135.70	131.63	127.56

