Analog signal converters CC range
The signal converter range for every application

The universal signal converters – multifunctional, flexible and precise

The new product range of universal signal converters CC-U is ideally suited to the requirements of industrial measuring values and processing. They convert existing electrical and physical values into proportional standard signals or relay thresholds. The 3-way electrical isolation of inputs, outputs and supply (1.5 kV) prevents interference such as ground loops, voltage transfers and coupled-in dispersions. Further on the expensive measuring equipment connected to the converters is protected from damage.

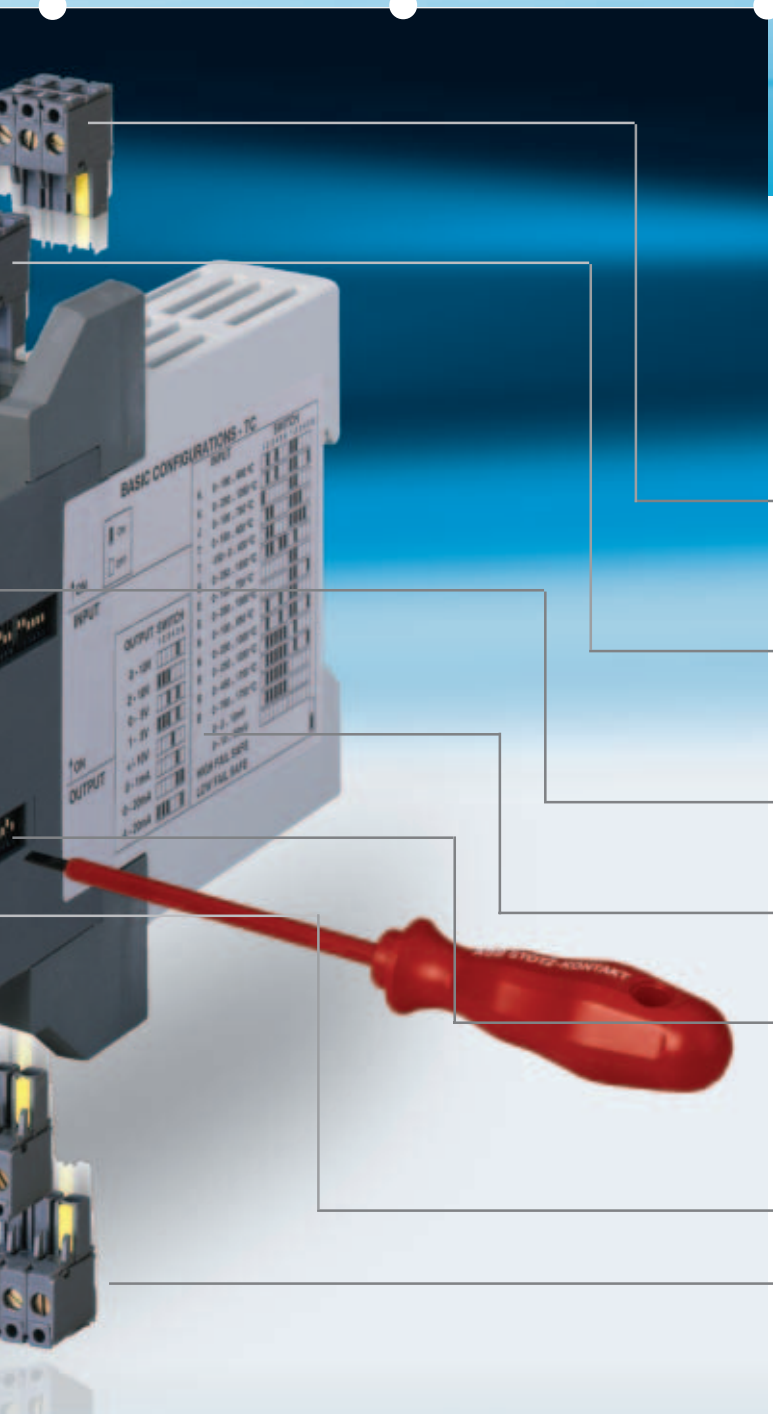
Safe application

High precision ensures signals without additional tolerances, so that all signals are transmitted precisely and interference is prevented. Additionally the signal outputs are short-circuit proof so that the converter is protected from damage. The output reaction can be configured, so that the connected controller can take measurements in case of interrupted input signal
The product range of universal signal converters CC-U ensures safety and reliability of the plants and processes.

- **Universal**
  8 different signal converters, input and output universally configurable, also with option of 2 threshold relay outputs.
- **Convenient**
  Front-face operating elements, pluggable terminals, easily and directly accessible configuration.
- **Safe**
  High precision, 3-way electrical isolation, short-circuit proof signal outputs, CE marked.

Precise adjustment

All front-face configurations by clear and easily comprehensible operating elements.



The product range CC-U
offers devices for conversion of standard signals, temperature signals for RTD sensors (PT10, PT100, PT1000) and thermocouple signals as well as products for measuring RMS values of currents and voltages.

Eight different signal converters
for the conversion of all types of signals in processes and plants.

Pluggable connection terminals
for quick exchange without rewiring.

Terminal marking
on the front face.

Clear description of the configuration
printed on side adhesive labels.

Input and output signal ranges
configurable by directly accessible and easily comprehensible lateral DIP-switches (without opening of the enclosure).

Marker label

Eight different standard signal outputs in one device
By means of the universally designed output ranges the user can choose between 6 standard voltage outputs and 4 standard current outputs. Also there are devices with two threshold relay outputs.

Gain coarse
Amplification, preselection, coarse adjustment

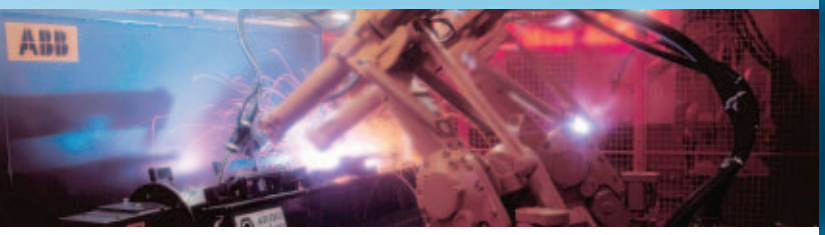
Gain fine
Amplification, fine adjustment

Offset
Potentiometer for offset adjustment

U
Supply voltage, green LED

Dimensions
22,5 x 105 x 120 mm

Economy series analog signal conversion



The product range CC-E
offers devices for the conversion of standard signals, temperature signal for RTD sensors, thermocouple signals, and converters for current measurement.

DIN-rail mounting
width 22,5 mm.

Terminal marking
on the printed front face.

Clear description of the configuration
printed on side adhesive labels.

Safety by 3-way electrical isolation.

Input and output signal ranges
of the universally configurable devices can be adjusted by directly accessible and easily comprehensible lateral DIP-switches (without opening of the enclosure).

Conversion
of all types of signals in processes and plants.

Output signals
0...5 V
0...10 V
0...20 mA
4...20 mA

Dimensions
22,5 x 75 x 107 mm

Gain
Front-face potentiometer for gain adjustment (universally configurable devices)

Offset
Front-face potentiometer for offset adjustment (universally configurable devices)

U
Supply voltage, green LED

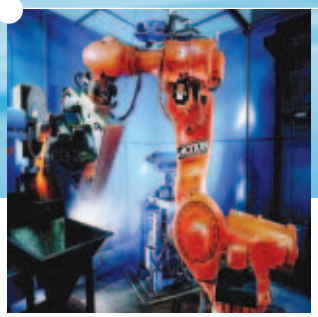
The new product range CC-E for analog signal conversion includes 76 devices in four functional groups (standard signals, temperature measurement by means of PT100 sensors or by means of thermocouples types J and K, current measurement). Each functional group includes one universally configurable device as well as single-function devices. Supply voltage is 24 V DC or 110-240 V AC.

The single-function devices do not require any adjustments – thus saving time and money. The input and output signal ranges of the four universal devices can be configured by means of directly accessible lateral DIP-switches. The gain and the offset of the universal converters can be adjusted within a range of +/- 5 % with the front-face potentiometer. All devices feature 3-way electrical isolation between input, output and supply (2,5 kV) to prevent disturbing influences / interferences which can falsify the measuring signals or destroy expensive measuring equipment connected to the converters. This way you are ensured a safe and correct transmission of the processed signal within the application. The CC-E converters contribute to the safety in processes and plants at a very attractive price/performance ratio.

CC-E is the cost-efficient solution in the field of analog signal conversion.

- **76 devices**
  in four functional groups for the conversion of all types of signals in processes and plants
- **Universally**
  configurable and single-function devices
- **Safety**
  by 3-way electrical isolation
- **Clear**
  and comprehensive terminal marking
- **CE marked**

Analog signal converters CC range – product overview



Standard signal converter, CC-E range

Approvals	c UL us LISTED, UL 1604 Class I, Div. 2 [1]		
Dimensions	22,5 x 75 x 102 mm		
Supply voltage 24 V DC			
Type	*Input signal*	*Output signal*	*Order code*
Universal device			
CC-E/STD	0-5 V, 0-10 V 0-20 mA, 4-20 mA	0-5 V, 0-10 V 0-20 mA, 4-20 mA	1SVR 011 700 R 0000[1]
Single-function devices			
CC-E V/V	0-10 V	0-10 V	1SVR 011 710 R 2100
CC-E V/I		0-20 mA	1SVR 011 711 R 1600
CC-E V/I		4-20 mA	1SVR 011 712 R 1700
CC-E I/V	0-20 mA	0-10 V	1SVR 011 713 R 1000
CC-E I/I		0-20 mA	1SVR 011 714 R 1100
CC-E I/I		4-20 mA	1SVR 011 715 R 1200
CC-E I/V	4-20 mA	0-10 V	1SVR 011 716 R 1300
CC-E I/I		0-20 mA	1SVR 011 717 R 1400
CC-E I/I		4-20 mA	1SVR 011 718 R 2500
CC-E V/V	–10…+10V	–10…+10V	1SVR 011 719 R 2600
Supply voltage 110-240 V AC			
Type	*Input signal*	*Output signal*	*Order code*
Universal device			
CC-E/STD	0-5 V, 0-10 V 0-20 mA, 4-20 mA	0-5 V, 0-10 V 0-20 mA, 4-20 mA	1SVR 011 705 R 2100
Single-function devices			
CC-E V/V	0-10 V	0-10 V	1SVR 011 720 R 2300
CC-E V/I		0-20 mA	1SVR 011 721 R 1000
CC-E V/I		4-20 mA	1SVR 011 722 R 1100
CC-E I/V	0-20 mA	0-10 V	1SVR 011 723 R 1200
CC-E I/I		0-20 mA	1SVR 011 724 R 1300
CC-E I/I		4-20 mA	1SVR 011 725 R 1400
CC-E I/V	4-20 mA	0-10 V	1SVR 011 726 R 1500
CC-E I/I		0-20 mA	1SVR 011 727 R 1600
CC-E I/I		4-20 mA	1SVR 011 728 R 2700
CC-E V/V	–10…+10V	–10…+10V	1SVR 011 729 R 2000

Temperature signal converters for PT100 sensors , CC-E range

Approvals	c UL us LISTED, UL 1604 Class I, Div. 2 [1]		
Dimensions	22,5 x 75 x 102 mm		
Supply voltage 24 V DC			
Type	*Input signal*	*Output signal (linearized)*	*Order code*
Universal device			
CC-E/RTD	PT100, 0...100 °C - 0...500 °C, -50 °C...+50 °C - -50 °C...+450 °C	0-10 V, 0-20 mA, 4-20 mA	1SVR 011 701 R 2500 [1]
Single-function devices			
CC-E RTD/V	PT100, 0...100 °C	0-10 V	1SVR 011 730 R 2500
CC-E RTD/I		0-20 mA	1SVR 011 731 R 1200
CC-E RTD/I		4-20 mA	1SVR 011 732 R 1300
CC-E RTD/V	PT100, -50...+50 °C	0-10 V	1SVR 011 733 R 1400
CC-E RTD/I		0-20 mA	1SVR 011 734 R 1500
CC-E RTD/I		4-20 mA	1SVR 011 735 R 1600
CC-E RTD/V	PT100, 0...300 °C	0-10 V	1SVR 011 736 R 1700
CC-E RTD/I		0-20 mA	1SVR 011 737 R 1000
CC-E RTD/I		4-20 mA	1SVR 011 738 R 2100
CC-E RTD/V	PT100, -50...+250 °C	0-10 V	1SVR 011 739 R 2200
CC-E RTD/I		0-20 mA	1SVR 011 740 R 0700
CC-E RTD/I		4-20 mA	1SVR 011 741 R 2400
Supply voltage 110-240 V AC			
Type	*Input signal*	*Output signal (linearized)*	*Order code*
Universal device			
CC-E/RTD	PT100, 0...100 °C - 0...500 °C, -50 °C...+50 °C - -50 °C...+450 °C	0-10 V, 0-20 mA, 4-20 mA	1SVR 011 706 R 2200
Single-function devices			
CC-E RTD/V	PT100, 0...100 °C	0-10 V	1SVR 011 788 R 2400
CC-E RTD/I		0-20 mA	1SVR 011 789 R 2500
CC-E RTD/I		4-20 mA	1SVR 011 790 R 2200
CC-E RTD/V	PT100, -50...+50 °C	0-10 V	1SVR 011 791 R 1700
CC-E RTD/I		0-20 mA	1SVR 011 792 R 1000
CC-E RTD/I		4-20 mA	1SVR 011 793 R 1100
CC-E RTD/V	PT100, 0...300 °C	0-10 V	1SVR 011 794 R 1200
CC-E RTD/I		0-20 mA	1SVR 011 795 R 1300
CC-E RTD/I		4-20 mA	1SVR 011 796 R 1400
CC-E RTD/V	PT100, -50...+250 °C	0-10 V	1SVR 011 797 R 1500
CC-E RTD/I		0-20 mA	1SVR 011 798 R 2600
CC-E RTD/I		4-20 mA	1SVR 011 799 R 2700

Standard signal converter, CC-U range

Approvals	c UL us LISTED, UL 1604 Class I, Div. 2 [1]			
Dimensions	22,5 x 105 x 120 mm			
Type	*Supply voltage*	*Input signals*	*Output signals*	*Order code*
CC-U/STD	24-48 V DC / 24 V AC 50/60 Hz	current signals ±0,9mA...±55mA, voltage signals ±45 mV...±11V,	all common standard signals	1SVR 040 000 R 1700 [1]
	110-240 V AC 50/60 Hz / 100-300 V DC	potentiometer 470 W...1 MW, continuously adjustable	up to ±55mA and ±11V, continuously	1SVR 040 001 R 0400 [1]
CC-U/STDR	24-48 V DC / 24 V AC 50/60 Hz	0-10V, 0-5V, 0-1V, –10V - +10V, 1-5V; 0-20mA, 4-20mA	2 threshold relay outputs, thresholds	1SVR 040 010 R 0000
	110-240 V AC 50/60 Hz / 100-300 V DC	open- or closed-circuit principle selectable	adjustable 2...100% of the input range	1SVR 040 011 R 2500

Temperature signal converter for PT10, PT100, PT1000 sensors, CC-U range

Approvals	c UL us LISTED, UL 1604 Class I, Div. 2 [1]			
Dimensions	22,5 x 105 x 120 mm			
Type	*Supply voltage*	*Input signals*	*Output signals*	*Order code*
CC-U/RTD	24-48 V DC / 24 V AC 50/60 Hz	PT10, 0…500 °C - 850 °C; PT100, 0…50 °C - 500 °C	all common standard signals	1SVR 040 002 R 0500 [1]
	110-240 V AC 50/60 Hz / 100-300 V DC	PT1000 0…6 °C - 60 °C	up to ±55mA and ±11V, continuously, linearized	1SVR 040 003 R 0600 [1]
CC-U/RTDR	24-48 V DC / 24 V AC 50/60 Hz	PT100, 0…100 °C - 800 °C	2 threshold relay outputs, thresholds	1SVR 040 012 R 2600
	110-240 V AC 50/60 Hz / 100-300 V DC	open- or closed-circuit principle selectable	adjustable 2...100% of the input range	1SVR 040 013 R 2700

Temperature signal converters for thermocouples type J and K, CC-E range

Approvals	c UL us LISTED; UL 1604 Class I, Div. 2 [1]		
Dimensions	22,5 x 75 x 102 mm		
Supply voltage 24 V DC			
Type	*Input signal*	*Output signal*	*Order code*
Universal device			
CC-E/TC	Thermocouples type J (0…600°C), type K (0…1000 °C)	0-10 V, 0-20 mA, 4-20 mA	1SVR 011 702 R 2600 [1]
Single-function devices			
CC-E TC/V	type J 0...600 °C	0-10 V	1SVR 011 750 R 0100
CC-E TC/I		0-20 mA	1SVR 011 751 R 2600
CC-E TC/I		4-20 mA	1SVR 011 752 R 2700
CC-E TC/V	type K 0...1000 °C	0-10 V	1SVR 011 753 R 2000
CC-E TC/I		0-20 mA	1SVR 011 754 R 2100
CC-E TC/I		4-20 mA	1SVR 011 755 R 2200
Supply voltage 110-240 V AC			
Type	*Input signal*	*Output signal*	*Order code*
Universal device			
CC-E/TC	Thermocouples type J (0…600°C), type K (0...1000 °C)	0-10 V, 0-20 mA, 4-20 mA	1SVR 011 707 R 2300
Single-function devices			
CC-E TC/V	type J 0...600 °C	0-10 V	1SVR 011 760 R 0300
CC-E TC/I		0-20 mA	1SVR 011 761 R 2000
CC-E TC/I		4-20 mA	1SVR 011 762 R 2100
CC-E TC/V	type K 0...1000 °C	0-10 V	1SVR 011 763 R 2200
CC-E TC/I		0-20 mA	1SVR 011 764 R 2300
CC-E TC/I		4-20 mA	1SVR 011 765 R 2400

Measuring converters for current signals (AC/DC), CC-E range

Approvals	c UL us LISTED; UL 1604 Class I, Div. 2 [1]		
Dimensions	22,5 x 75 x 102 mm		
Supply voltage 24 V DC			
Type	*Input signal*	*Output signal*	*Order code*
Universal device			
CC-E/I	0-5 A, 0-20 A, AC/DC	0-10 V, 0-20 mA, 4-20 mA	1SVR 011 703 R 2700 [1]
Single-function devices			
CC-E I_{AC}/V	0-5 A, 0-20 A, AC	0-10 V	1SVR 011 770 R 0500
CC-E I_{AC}/I		0-20 mA	1SVR 011 771 R 2200
CC-E I_{AC}/I		4-20 mA	1SVR 011 772 R 2300
CC-E I_{DC}/V	0-5 A, 0-20 A, DC	0-10 V	1SVR 011 773 R 2400
CC-E I_{DC}/I		0-20 mA	1SVR 011 774 R 2500
CC-E I_{DC}/I		4-20 mA	1SVR 011 775 R 2600
Supply voltage 110-240 V AC			
Type	*Input signal*	*Output signal*	*Order code*
Universal device			
CC-E/I	0-5 A, 0-20 A, AC/DC	0-10 V, 0-20 mA, 4-20 mA	1SVR 011 708 R 0400
Single-function devices			
CC-E I_{AC}/V	0-5 A, 0-20 A, AC	0-10 V	1SVR 011 780 R 1100
CC-E I_{AC}/I		0-20 mA	1SVR 011 781 R 0600
CC-E I_{AC}/I		4-20 mA	1SVR 011 782 R 0700
CC-E I_{DC}/V	0-5 A, 0-20 A, DC	0-10 V	1SVR 011 783 R 0000
CC-E I_{DC}/I		0-20 mA	1SVR 011 784 R 0100
CC-E I_{DC}/I		4-20 mA	1SVR 011 785 R 1100

Approvals	c UL us LISTED		
Dimensions	18 x 62 x 65 mm		
Type	*Input signal*	*Output signal*	*Order code*
loop powered			
CC-E I_{AC}/ILPO	0-1 A, 0-5 A, AC, loop powered	4-20 mA	1SVR 010 203 R 0500

Temperature signal converters for thermocouples type K, J, T, S, E, N, R, B, CC-U range

Approvals	c UL us LISTED; UL 1604 Class I, Div. 2 [1]			
Dimensions	22,5 x 105 x 120 mm			
Type	*Supply voltage*	*Input signals*	*Output signals*	*Order code*
CC-U/TC	24-48 V DC / 24 V AC 50/60 Hz	TC.J, TC.K, TC.T, TC.S, TC.E, TC.N, TC.R, TC.B, cold-junction compensation can be switched off for differential temperature measurement	all common standard signals up to ±55mA and ±11V, continuously	1SVR 040 004 R 0700 [1]
	110-240 V AC 50/60 Hz / 100-300 V DC			1SVR 040 005 R 0000 [1]
CC-U/TCR	24-48 V DC / 24 V AC 50/60 Hz	TC.J, TC.K, TC.T, TC.S open- or closed-circuit principle selectable	2 threshold relay outputs, thresholds adjustable 2...100% of the input range	1SVR 040 014 R 2000
	110-240 V AC 50/60 Hz / 100-300 V DC			1SVR 040 015 R 2100

Measuring converters for current or voltage RMS values, CC-U range

Approvals	c UL us LISTED			
Dimensions	22,5 x 105 x 120 mm			
Type	*Supply voltage*	*Input signals*	*Output signals*	*Order code*
CC-U/I	24-48 V DC / 24 V AC 50/60 Hz	0…1 A, 0…5 A , selectable via connection of input terminals, any curve forms 0…600 Hz	all common standard signals up to ±55mA and ±11V	1SVR 040 006 R 0100
	110-240 V AC 50/60 Hz / 100-300 V DC			1SVR 040 007 R 0200
CC-U/V	24-48 V DC / 24 V AC 50/60 Hz	0…100 V - 600 V, 8 ranges selectable, any curve forms 0…600 Hz	all common standard signals up to ±55mA and ±11V,	1SVR 040 008 R 1300
	110-240 V AC 50/60 Hz / 100-300 V DC			1SVR 040 009 R 1400

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