

# Analog signal converters CC range

## The signal converter range for every application



2CDC 285.001 F0005

# The universal signal converters – multifunctional, flexible and precise



**T**he 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

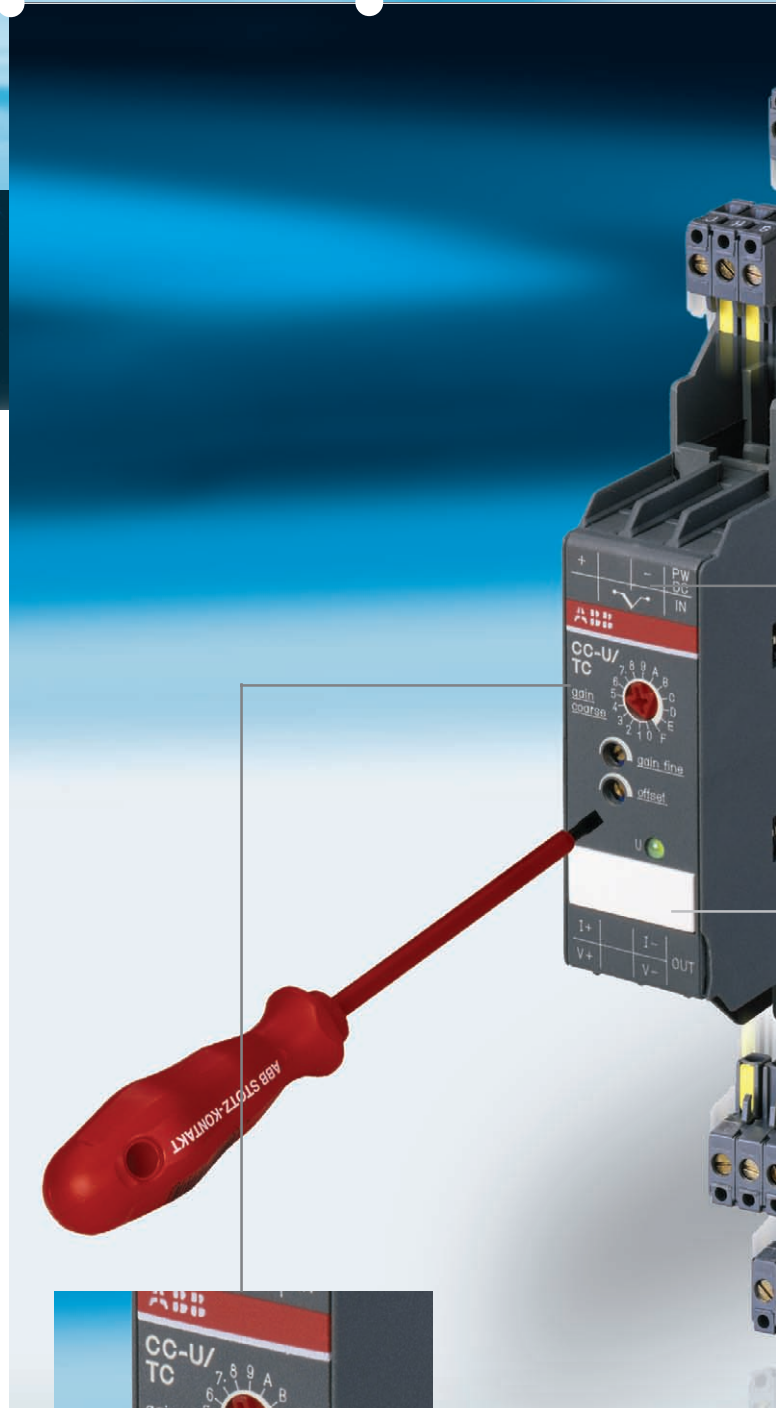
8 different signal converters, input and output universally configurable, also with option of 2 threshold relay outputs.

### ■ Convenient

Front-face operating elements, pluggable terminals, easily and directly accessible configuration.

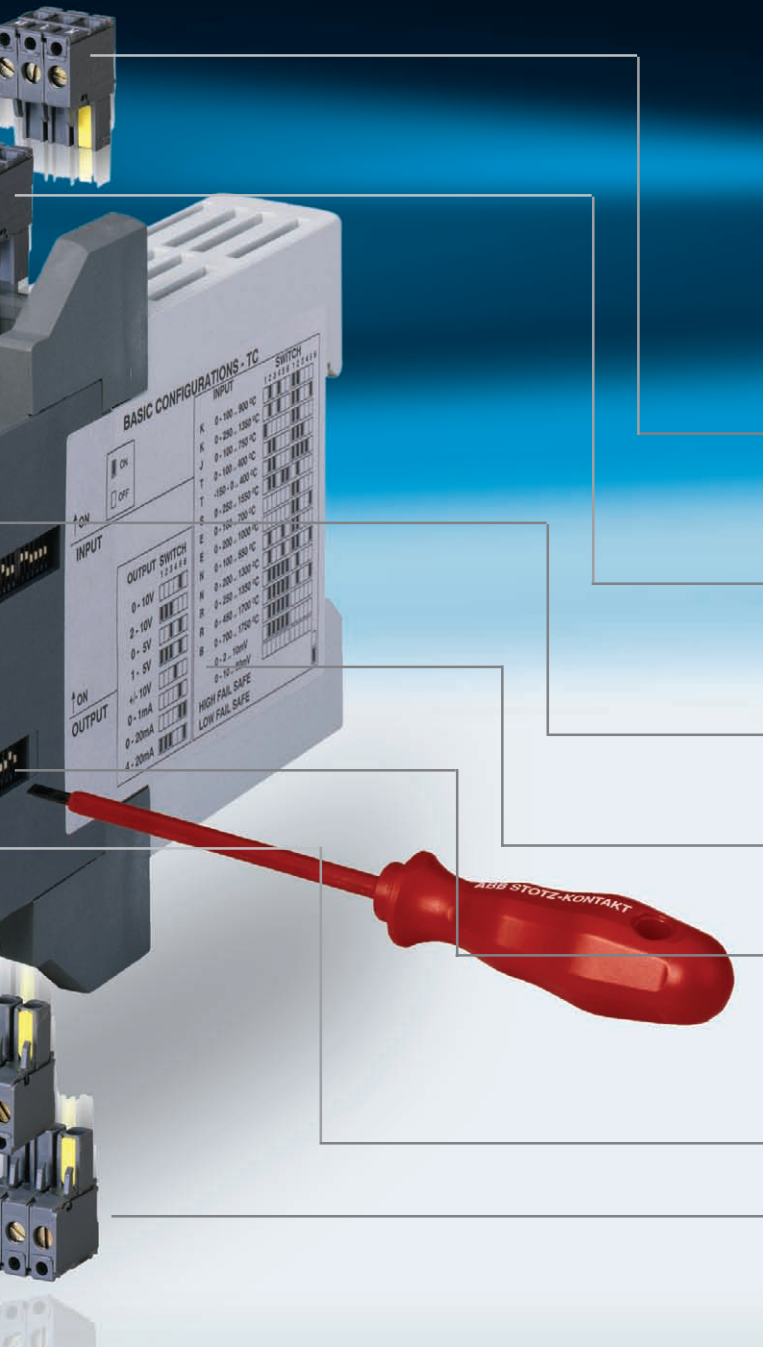
### ■ Safe

High precision, 3-way electrical isolation, short-circuit proof signal outputs.



## 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 devices 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.

### Dimensions

22,5 x 105 x 120 mm

### Gain coarse

Amplification, preselection, coarse adjustment

### Gain fine

Amplification, fine adjustment

### Offset





Potentiometer for offset adjustment

### U

Supply voltage, green LED

2CDC283 016 F0003

## Approvals



 1604 Class I, Div. 2<sup>1)</sup>,
 
 CB<sup>2)</sup>,
 
 CCC<sup>2)</sup>

## Marks

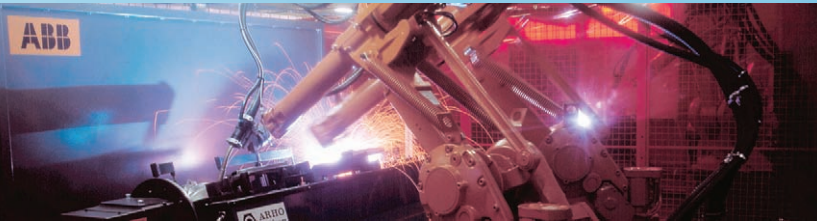



<sup>1)</sup> depending on type

<sup>2)</sup> pending



# Economy series analog signal conversion



## The product range CC-E

offers devices for the conversion of standard signals, temperature signals 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 product range CC-E for analog signal conversion includes 79 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 interference 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.

- **79 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
- **Approvals**  
c  ,  1604 Class I, Div.2<sup>1)</sup>,  <sup>2)</sup>, 

- **Marks**  
 , 

<sup>1)</sup> depending on type  
<sup>2)</sup> pending

2CDC 286 002 F0005

2CDC 281 010 F0003



# Analog signal converters CC range – product overview



## Standard signal converters, CC-E range

<b>Approvals</b>			
1604 Class I, Div. 2 <sup>1)</sup>			
<b>Dimensions</b>			
22,5 x 75 x 102 mm			
<b>Supply voltage 24 V DC</b>			
<b>Type</b>	<b>Input signal</b>	<b>Output signal</b>	<b>Order code</b>
<i>Universal device</i>			
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 R0000 <sup>1)</sup>
<i>Single-function devices</i>			
CC-E V/V	0 - 10 V	0 - 10 V	1SVR 011 710 R2100
CC-E V/I		0 - 20 mA	1SVR 011 711 R1600
CC-E V/I		4 - 20 mA	1SVR 011 712 R1700
CC-E I/V	0 - 20 mA	0 - 10 V	1SVR 011 713 R1000
CC-E I/I		0 - 20 mA	1SVR 011 714 R1100
CC-E I/I		4 - 20 mA	1SVR 011 715 R1200
CC-E I/V	4 - 20 mA	0 - 10 V	1SVR 011 716 R1300
CC-E I/I		0 - 20 mA	1SVR 011 717 R1400
CC-E I/I		4 - 20 mA	1SVR 011 718 R2500
CC-E V/V	-10...+10V	-10...+10V	1SVR 011 719 R2600
<b>Supply voltage 110-240 V AC</b>			
<b>Type</b>	<b>Input signal</b>	<b>Output signal</b>	<b>Order code</b>
<i>Universal device</i>			
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 R2100
<i>Single-function devices</i>			
CC-E V/V	0 - 10 V	0 - 10 V	1SVR 011 720 R2300
CC-E V/I		0 - 20 mA	1SVR 011 721 R1000
CC-E V/I		4 - 20 mA	1SVR 011 722 R1100
CC-E I/V	0 - 20 mA	0 - 10 V	1SVR 011 723 R1200
CC-E I/I		0 - 20 mA	1SVR 011 724 R1300
CC-E I/I		4 - 20 mA	1SVR 011 725 R1400
CC-E I/V	4 - 20 mA	0 - 10 V	1SVR 011 726 R1500
CC-E I/I		0 - 20 mA	1SVR 011 727 R1600
CC-E I/I		4 - 20 mA	1SVR 011 728 R2700
CC-E V/V	-10...+10V	-10...+10V	1SVR 011 729 R2000



## Passive current isolators, CC-E range

<b>Approvals</b>			
1604 Class I, Div. 2 <sup>1)</sup>			
<b>Dimensions</b>			
18 x 62 x 65 mm			
<b>Type</b>	<b>Number of channels</b>	<b>Input/Output</b>	<b>Order code</b>
CC-E/I-1	1 channel	0 - 20 mA or 4 - 20 mA	1SVR 010 200 R1600
CC-E/I-2	2 channel	0 - 20 mA or 4 - 20 mA	1SVR 010 201 R0300



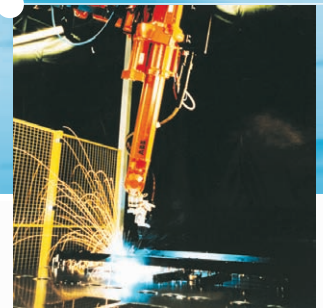
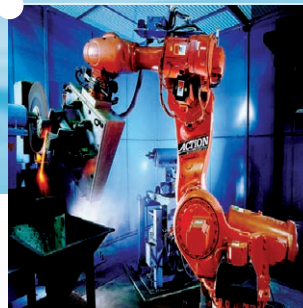
## Standard signal converters, CC-U range

<b>Approvals</b>				
1604 Class I, Div. 2 <sup>1)</sup> CB * <small>scheme</small>				
<b>Dimensions</b>				
22,5 x 105 x 120 mm				
<b>Type</b>	<b>Supply voltage</b>	<b>Input signals</b>	<b>Output signals</b>	<b>Order code</b>
CC-U/STD	24-48 V DC / 24 V AC 50/60 Hz	current signals ±0,9mA...±55mA, voltage signals ±45 mV...±11V, potentiometer 470 W...1 MW, continuously adjustable	all common standard signals	1SVR 040 000 R1700 <sup>1)</sup>
	110-240 V AC 50/60 Hz / 100-300 V DC		up to ±55mA and ±11V, continuously	1SVR 040 001 R0400 <sup>1)</sup>
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 adjustable 2...100% of the input range	1SVR 040 010 R0000
	110-240 V AC 50/60 Hz / 100-300 V DC	open- or closed-circuit principle selectable		1SVR 040 011 R2500



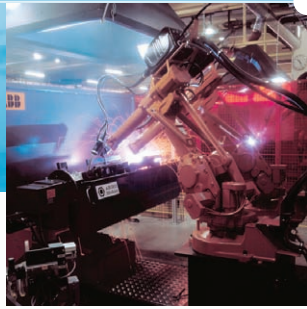
## Temperature signal converters for PT10, PT100, PT1000 sensors, CC-U range

<b>Approvals</b>				
1604 Class I, Div. 2 <sup>1)</sup> CB * <small>scheme</small>				
<b>Dimensions</b>				
22,5 x 105 x 120 mm				
<b>Type</b>	<b>Supply voltage</b>	<b>Input signals</b>	<b>Output signals</b>	<b>Order code</b>
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 R0500 <sup>1)</sup>
	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 R0600 <sup>1)</sup>
CC-U/RTDR*	24-48 V DC / 24 V AC 50/60 Hz	PT100, 0...100 °C - 800 °C	2 threshold relay outputs, thresholds adjustable 2...100% of the input range	1SVR 040 012 R2600
	110-240 V AC 50/60 Hz / 100-300 V DC	open- or closed-circuit principle selectable		1SVR 040 013 R2700



## Temperature signal converters for PT100 sensors, CC-E range

<b>Approvals</b>			
1604 Class I, Div. 2 <sup>1)</sup>			
<b>Dimensions</b>			
22,5 x 75 x 102 mm			
<b>Supply voltage 24 V DC</b>			
<b>Type</b>	<b>Input signal</b>	<b>Output signal (linearized)</b>	<b>Order code</b>
<i>Universal device</i>			
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 R2500 <sup>1)</sup>
<i>Single-function devices</i>			
CC-E RTD/V	PT100, 0...100 °C	0 - 10 V	1SVR 011 730 R2500
CC-E RTD/I		0 - 20 mA	1SVR 011 731 R1200
CC-E RTD/I		4 - 20 mA	1SVR 011 732 R1300
CC-E RTD/V	PT100, -50...+50 °C	0 - 10 V	1SVR 011 733 R1400
CC-E RTD/I		0 - 20 mA	1SVR 011 734 R1500
CC-E RTD/I		4 - 20 mA	1SVR 011 735 R1600
CC-E RTD/V	PT100, 0...300 °C	0 - 10 V	1SVR 011 736 R1700
CC-E RTD/I		0 - 20 mA	1SVR 011 737 R1000
CC-E RTD/I		4 - 20 mA	1SVR 011 738 R2100
CC-E RTD/V	PT100, -50...+250 °C	0 - 10 V	1SVR 011 739 R2200
CC-E RTD/I		0 - 20 mA	1SVR 011 740 R0700
CC-E RTD/I		4 - 20 mA	1SVR 011 741 R2400
<b>Supply voltage 110-240 V AC</b>			
<b>Type</b>	<b>Input signal</b>	<b>Output signal (linearized)</b>	<b>Order code</b>
<i>Universal device</i>			
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 R2200
<i>Single-function devices</i>			
CC-E RTD/V	PT100, 0...100 °C	0 - 10 V	1SVR 011 788 R2400
CC-E RTD/I		0 - 20 mA	1SVR 011 789 R2500
CC-E RTD/I		4 - 20 mA	1SVR 011 790 R2200
CC-E RTD/V	PT100, -50...+50 °C	0 - 10 V	1SVR 011 791 R1700
CC-E RTD/I		0 - 20 mA	1SVR 011 792 R1000
CC-E RTD/I		4 - 20 mA	1SVR 011 793 R1100
CC-E RTD/V	PT100, 0...300 °C	0 - 10 V	1SVR 011 794 R1200
CC-E RTD/I		0 - 20 mA	1SVR 011 795 R1300
CC-E RTD/I		4 - 20 mA	1SVR 011 796 R1400
CC-E RTD/V	PT100, -50...+250 °C	0 - 10 V	1SVR 011 797 R1500
CC-E RTD/I		0 - 20 mA	1SVR 011 798 R2600
CC-E RTD/I		4 - 20 mA	1SVR 011 799 R2700



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

<b>Approvals</b>			
cUL <sub>US</sub> LISTED UL 1604 Class I, Div. 2 <sup>1)</sup>			
<b>Dimensions</b>			
22,5 x 75 x 102 mm			
<b>Supply voltage 24 V DC</b>			
Type	Input signal	Output signal	Order code
<i>Universal device</i>			
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 R2600 <sup>1)</sup>
<i>Single-function devices</i>			
CC-E TC/V		0 - 10 V	1SVR 011 750 R0100
CC-E TC/I	type J 0...600 °C	0 - 20 mA	1SVR 011 751 R2600
CC-E TC/I		4 - 20 mA	1SVR 011 752 R2700
CC-E TC/V		0 - 10 V	1SVR 011 753 R2000
CC-E TC/I	type K 0...1000 °C	0 - 20 mA	1SVR 011 754 R2100
CC-E TC/I		4 - 20 mA	1SVR 011 755 R2200
<b>Supply voltage 110-240 V AC</b>			
Type	Input signal	Output signal	Order code
<i>Universal device</i>			
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 R2300
<i>Single-function devices</i>			
CC-E TC/V		0 - 10 V	1SVR 011 760 R0300
CC-E TC/I	type J 0...600 °C	0 - 20 mA	1SVR 011 761 R2000
CC-E TC/I		4 - 20 mA	1SVR 011 762 R2100
CC-E TC/V		0 - 10 V	1SVR 011 763 R2200
CC-E TC/I	type K 0...1000 °C	0 - 20 mA	1SVR 011 764 R2300
CC-E TC/I		4 - 20 mA	1SVR 011 765 R2400



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

<b>Approvals</b>			
cUL <sub>US</sub> LISTED UL 1604 Class I, Div. 2 <sup>1)</sup>			
<b>Dimensions</b>			
22,5 x 75 x 102 mm			
<b>Supply voltage 24 V DC</b>			
Type	Input signal	Output signal	Order code
<i>Universal device</i>			
CC-E/I	0 - 5 A, 0 - 20 A, AC/DC	0 - 10 V, 0 - 20 mA, 4 - 20 mA	1SVR 011 703 R2700 <sup>1)</sup>
<i>Single-function devices</i>			
CC-E I <sub>AC</sub> /V		0 - 10 V	1SVR 011 770 R0500
CC-E I <sub>AC</sub> /I	0 - 5 A, 0 - 20 A, AC	0 - 20 mA	1SVR 011 771 R2200
CC-E I <sub>AC</sub> /I		4 - 20 mA	1SVR 011 772 R2300
CC-E I <sub>DC</sub> /V		0 - 10 V	1SVR 011 773 R2400
CC-E I <sub>DC</sub> /I	0 - 5 A, 0 - 20 A, DC	0 - 20 mA	1SVR 011 774 R2500
CC-E I <sub>DC</sub> /I		4 - 20 mA	1SVR 011 775 R2600
<b>Supply voltage 110-240 V AC</b>			
Type	Input signal	Output signal	Order code
<i>Universal device</i>			
CC-E/I	0 - 5 A, 0 - 20 A, AC/DC	0 - 10 V, 0 - 20 mA, 4 - 20 mA	1SVR 011 708 R0400
<i>Single-function devices</i>			
CC-E I <sub>AC</sub> /V		0 - 10 V	1SVR 011 780 R1100
CC-E I <sub>AC</sub> /I	0 - 5 A, 0 - 20 A, AC	0 - 20 mA	1SVR 011 781 R0600
CC-E I <sub>AC</sub> /I		4 - 20 mA	1SVR 011 782 R0700
CC-E I <sub>DC</sub> /V		0 - 10 V	1SVR 011 783 R0000
CC-E I <sub>DC</sub> /I	0 - 5 A, 0 - 20 A, DC	0 - 20 mA	1SVR 011 784 R0100
CC-E I <sub>DC</sub> /I		4 - 20 mA	1SVR 011 785 R1100

<b>Approvals</b>			
cUL <sub>US</sub> LISTED			
<b>Dimensions</b>			
18 x 62 x 65 mm			
Type	Input signal	Output signal	Order code
<i>loop powered</i>			
CC-E I <sub>AC</sub> /ILPO	0-1 A, 0 - 5 A, AC, loop powered	4 - 20 mA	1SVR 010 203 R0500

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

<b>Approvals</b>				
cUL <sub>US</sub> LISTED UL 1604 Class I, Div. 2 <sup>1)</sup> CB* scheme				
<b>Dimensions</b>				
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 R0700 <sup>1)</sup>
CC-U/TCR*	24-48 V DC / 24 V AC 50/60 Hz	TC.J, TC.K, TC.T, TC.S	2 threshold relay outputs, thresholds adjustable 2...100% of the input range	1SVR 040 005 R0000 <sup>1)</sup>
	110-240 V AC 50/60 Hz / 100-300 V DC	open- or closed-circuit principle selectable		1SVR 040 014 R2000
				1SVR 040 015 R2100

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

<b>Approvals</b>				
cUL <sub>US</sub> LISTED UL 1604 Class I, Div. 2				
<b>Dimensions</b>				
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 R0100
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 040 007 R0200
	110-240 V AC 50/60 Hz / 100-300 V DC			1SVR 040 008 R1300
				1SVR 040 009 R1400



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