Analog signal converters CC-range

Serial data converter CI-range

Content

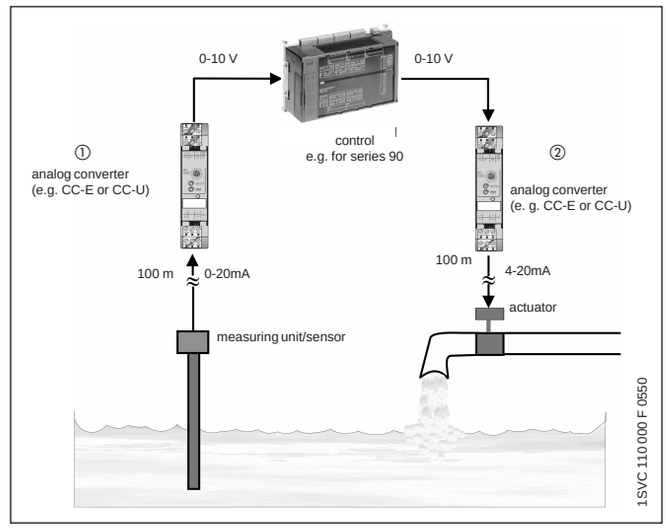
Examples for analog signal conversion

and the suitable solution with CC-E and CC-U converters

Nearly every process includes control circuits that receives and evaluates data by analog signals.

When transmitting analog signals numerous problems may arise which change or alter the desired signal.

In the following we have listed processing problems together with solutions to solve those problems.



Signal conversion

It is often necessary to convert the measured variable to a different type of signal. A signal converter is required for the conversion of single or different input signals into the desired output signal.

Signal amplification

When long distances or high burdens must be driven the signal must eventually be amplified.

CC-Analog signal converters require a low input load and provide a high output load. The converter can be connected at any position on the distance line, i.e.

- for signal repetition ① at the end of the line (low input load)
- for signal amplification ② at the beginning of the line (high output load)

Signal filtering

When long distances have to be recovered or in a rough industrial environment the signals are exposed to high electromagnetic interferences.

The original siganl can be raised to a higher frequency with a frequency converter. Depending on the requirement there are some analog signal converters with an incorporated low-pass filter at the input which can precisely detect these interferences.

Signal isolation

- **Protection against overvoltages**
  The increased use of µ-electronics make the controls much more sensitive against overvoltages, resulting from lightning discharges or from switching processes.
  Suppression diodes are incorporated in the input of the CC-analog signal converters in order to conduct overvoltages with a low energy level (switching processes) by themselves.
  The products feature a 3-way electrical isolation between input, output and supply circuit for protection of the output of the control connected.

- **Protection against ground loops**
  When components are used that refer to ground, the measuring signals can be falsified via a so-called ground loop. In this case a certain part of the signal is transmitted by earth and not by analog transmission, thus causing an incorrect evaluation of the signal.
  The electrical isolation of input and output separates these ground loops so that a correct signal transmission is ensured.

The product line for analog signal conversion CC-E

offers universally configurable converters and single function products in four functional groups to convert an existing/certain input signal into a defined output signal.

The CC-E line is a cost-efficient product line for serial application and for conversion of all kind of analog signals.

The product line for analog signal conversion CC-U

includes products for conversion of standard signals, resistance thermometer signals (PT10, PT100, PT 1000), thermocouple signals, and units to measure the RMS value of currents and voltages.

The universal output ranges allow the selection from standard voltage outputs and standard current outputs, as well s a wide range of non-standard values.
The line further includes products with two threshold relay outputs.
The products are available in DC or AC (50-60Hz) supply voltage versions.

CC-E/STD

CC-E/RTD

CC-U/TC

CC-U/RTDR

Selection guide analog signal converters

Current input

Current input	Output	Order code	Setting	DIP-switch I	DIP-switch O	Category	Supply voltage	Electrical Isolation	Page
0-20mA	0-5V	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	0-10V	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 713 R 1000	potentiometer	no	no	single function	24VDC	3-way	137
		1SVR 011 723 R 1200	potentiometer	no	no	single function	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	0-20mA	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 714 R 1100	potentiometer	no	no	single function	24VDC	3-way	137
		1SVR 011 724 R 1300	potentiometer	no	no	single function	110-240VAC	3-way	137
	4-20mA	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 715 R 1200	potentiometer	no	no	single function	24VDC	3-way	137
		1SVR 011 725 R 1400	potentiometer	no	no	single function	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
4-20mA	0-5V	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	0-10V	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 716 R 1300	potentiometer	no	no	single function	24VDC	3-way	137
		1SVR 011 726 R 1500	potentiometer	no	no	single function	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	0-20mA	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 717 R 1400	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 727 R 1600	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	4-20mA	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 718 R 2500	potentiometer	no	no	single function	24VDC	3-way	137
		1SVR 011 728 R 2700	potentiometer	no	no	single function	110-240VAC	3-way	137
Universal	universal	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	2 threshold relay	**1SVR 040 010 R 0000**	potentiometer	yes	yes	universal	24-48VDC	3-way	138
		1SVR 040 011 R 2500	potentiometer	yes	yes	universal	110-240VAC	3-way	138
0-1A 0-5A 0-20A	0(4)-20mA	**1SVR 010 203 R 0800**	potentiometer	yes	no	multirange	without	2-way	142
		1SVR 011 771 R 2200	potentiometer	no	no	single function	24VDC	3-way	142
		1SVR 011 781 R 0600	potentiometer	no	no	single function	110-240VAC	3-way	142
		1SVR 011 772 R 2300	potentiometer	no	no	single function	24VDC	3-way	142
		1SVR 011 782 R 0700	potentiometer	no	no	single function	110-240VAC	3-way	142
		1SVR 011 774 R 2500	potentiometer	no	no	single function	24VDC	3-way	142
		1SVR 011 784 R 0100	potentiometer	no	no	single function	110-240VAC	3-way	142
		1SVR 011 775 R 2600	potentiometer	no	no	single function	24VDC	3-way	142
		1SVR 011 785 R 1100	potentiometer	no	no	single function	110-240VAC	3-way	142
		1SVR 011 703 R 2700	potentiometer	no	no	single function	24VDC	3-way	142
		1SVR 011 708 R 0400	potentiometer	no	no	single function	110-240VAC	3-way	142
	0-10V	**1SVR 011 703 R 2700**	potentiometer	no	no	single function	24VDC	3-way	142
		1SVR 011 708 R 0400	potentiometer	no	no	single function	110-240VAC	3-way	142
		1SVR 011 770 R 0500	potentiometer	no	no	single function	24VDC	3-way	142
		1SVR 011 780 R 1100	potentiometer	no	no	single function	110-240VAC	3-way	142
		1SVR 011 773 R 2400	potentiometer	no	no	single function	24VDC	3-way	142
		1SVR 011 783 R 0000	potentiometer	no	no	single function	110-240VAC	3-way	142
0-1A RMS 0-5A RMS	universal	**1SVR 040 008 R 0100**	potentiometer	no	yes	universal	24-48VDC	3-way	143
		1SVR 040 007 R 0200	potentiometer	no	yes	universal	110-240VAC	3-way	143

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Voltage input

Voltage input	Output	Order code	Setting	DIP-Switch I	DIP-Switch O	Category	Supply voltage	Electrical isolation	Page
	0-20mA	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	4-20mA	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
0-5V	0-5V	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	0-10V	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	Potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	0(4)-20mA	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
1-5V	0-5V	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
0-10V	0-10V	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 710 R 2100	potentiometer	no	no	single function	24VDC	3-way	137
		1SVR 011 720 R 2300	potentiometer	no	no	single function	110-240VAC	3-way	137
	0-20mA	**1SVR 011 711 R 1600**	potentiometer	no	no	single function	24VDC	3-way	137
		1SVR 011 721 R 1000	potentiometer	no	no	single function	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 040 000 R 1700	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	4-20mA	**1SVR 011 712 R 1700**	potentiometer	no	no	single function	24VDC	3-way	137
		1SVR 011 722 R 1100	potentiometer	no	no	single function	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	universal	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
(+/-) 10V	(+/-) 10V	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 719 R 2600	potentiometer	no	no	single function	24VDC	3-way	137
		1SVR 011 729 R 2000	potentiometer	no	no	single function	110-240VAC	3-way	137
Universal	universal	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137
		1SVR 011 700 R 0000	potentiometer	yes	yes	universal	24VDC	3-way	137
		1SVR 011 705 R 2100	potentiometer	yes	yes	universal	110-240VAC	3-way	137
	2 threshold relay	**1SVR 040 010 R 0000**	potentiometer	yes	no	universal	24-48VDC	3-way	138
		1SVR 040 011 R 2500	potentiometer	yes	no	universal	110-240VAC	3-way	138
RMS voltages 0-600V	universal	**1SVR 040 008 R 1300**	potentiometer	yes	no	universal	24-48VDC	3-way	143
		1SVR 040 009 R 1400	potentiometer	yes	no	universal	110-240VAC	3-way	143

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Thermocouple input

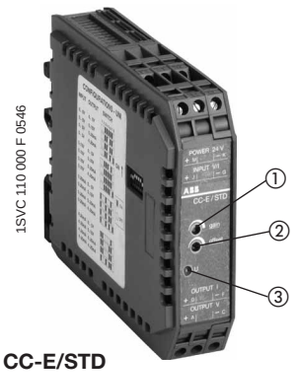
Input thermo-couple	Output	Order code	Setting	DIP-switch I	DIP-switch O	Category	Supply voltage	Electrical isolation	Page
	0-10V	**1SVR 011 702 R 2600**	potentiometer	yes	yes	universal	24VDC	3-way	140
		1SVR 011 707 R 2300	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 011 750 R 0100	potentiometer	no	no	single function	24VDC	3-way	140
		1SVR 011 760 R 0300	potentiometer	no	no	single function	110-240VAC	3-way	140
TCJ	0-20mA	**1SVR 011 702 R 2600**	potentiometer	yes	yes	universal	24VDC	3-way	140
		1SVR 011 707 R 2300	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 011 751 R 2600	potentiometer	no	no	single function	24VDC	3-way	140
		1SVR 011 761 R 2000	potentiometer	no	no	single function	110-240VAC	3-way	140
		1SVR 040 004 R 0700	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
	4-20mA	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 011 702 R 2600	potentiometer	yes	yes	universal	24VDC	3-way	140
		1SVR 011 707 R 2300	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 011 752 R 2700	potentiometer	no	no	single function	24VDC	3-way	140
		1SVR 011 762 R 2100	potentiometer	no	no	single function	110-240VAC	3-way	140
	0-10V	**1SVR 011 702 R 2600**	potentiometer	yes	yes	universal	24VDC	3-way	140
		1SVR 011 707 R 2300	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 040 004 R 0700	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 011 753 R 2000	potentiometer	no	no	single function	24VDC	3-way	140
		1SVR 011 763 R 2200	potentiometer	no	no	single function	110-240VAC	3-way	140
TCK	0-20mA	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 011 702 R 2600	potentiometer	yes	yes	universal	24VDC	3-way	140
		1SVR 011 707 R 2300	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 011 754 R 2100	potentiometer	no	no	single function	24VDC	3-way	140
		1SVR 011 764 R 2300	potentiometer	no	no	single function	110-240VAC	3-way	140
	4-20mA	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 011 755 R 2200	potentiometer	no	no	single function	24VDC	3-way	140
		1SVR 011 765 R 2400	potentiometer	no	no	single function	110-240VAC	3-way	140
	universal	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
		1SVR 011 702 R 2600	potentiometer	yes	yes	universal	24VDC	3-way	140
		1SVR 011 707 R 2300	potentiometer	yes	yes	universal	110-240VAC	3-way	140
TCS	universal	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
TCT	universal	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
TCE	universal	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
TCB	universal	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
TCN	universal	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
TCR	universal	**1SVR 040 004 R 0700**	potentiometer	yes	yes	universal	24-48VDC	3-way	140
		1SVR 040 005 R 0000	potentiometer	yes	yes	universal	110-240VAC	3-way	140
TCJ TCK TCT TCS	2 threshold relay output-contacts	**1SVR 040 014 R 2000**	potentiometer	yes	no	universal	24-48VDC	3-way	141
		1SVR 040 015 R 2100	potentiometer	yes	no	universal	110-240VAC	3-way	141

Selection guide temperature signal converters

RTD input and potentiometer input

Input	Output	Order code	Setting	DIP-switch I	DIP-switch O	Category	Supply voltage	Electrical isolation	Page
PT100	0-10V	**1SVR 011 730 R 2500**	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 788 R 2400	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 733 R 1400	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 791 R 1700	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 736 R 1700	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 794 R 1200	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 739 R 2200	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 797 R 1500	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 701 R 2500	potentiometer	yes	yes	universal	24VDC	3-way	138
		1SVR 011 706 R 2200	potentiometer	yes	yes	universal	110-240VAC	3-way	138
		1SVR 040 002 R 0500	potentiometer	yes	yes	universal	24-48VDC	3-way	139
		1SVR 040 003 R 0600	potentiometer	yes	yes	universal	110-240VAC	3-way	139
	0-20mA	**1SVR 011 731 R 1200**	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 789 R 2500	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 734 R 1500	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 792 R 1000	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 737 R 1000	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 795 R 1300	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 740 R 0700	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 798 R 2600	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 701 R 2500	potentiometer	yes	yes	universal	24VDC	3-way	138
		1SVR 011 706 R 2200	potentiometer	yes	yes	universal	110-240VAC	3-way	138
		1SVR 040 002 R 0500	potentiometer	yes	yes	universal	24-48VDC	3-way	139
		1SVR 040 003 R 0600	potentiometer	yes	yes	universal	110-240VAC	3-way	139
	4-20mA	**1SVR 011 732 R 1300**	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 790 R 2200	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 735 R 1600	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 793 R 1100	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 738 R 2100	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 796 R 1400	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 741 R 2400	potentiometer	no	no	single function	24VDC	3-way	138
		1SVR 011 799 R 2700	potentiometer	no	no	single function	110-240VAC	3-way	138
		1SVR 011 701 R 2500	potentiometer	yes	yes	universal	24VDC	3-way	138
		1SVR 011 706 R 2200	potentiometer	yes	yes	universal	110-240VAC	3-way	138
		1SVR 040 002 R 0500	potentiometer	yes	yes	universal	24-48VDC	3-way	139
		1SVR 040 003 R 0600	potentiometer	yes	yes	universal	110-240VAC	3-way	139
	2 threshold value relay	**1SVR 040 012 R 2600**	potentiometer	yes	no	universal	24-48VDC	3-way	139
		1SVR 040 013 R 2700	potentiometer	yes	no	universal	110-240VAC	3-way	139
	universal	**1SVR 040 002 R 0500**	potentiometer	yes	yes	universal	24-48VDC	3-way	139
		1SVR 040 003 R 0600	potentiometer	yes	yes	universal	110-240VAC	3-way	139
		1SVR 011 701 R 2500	potentiometer	yes	yes	universal	24VDC	3-way	138
		1SVR 011 706 R 2200	potentiometer	yes	yes	universal	110-240VAC	3-way	138
PT10 / PT 1000	universal	**1SVR 040 002 R 0500**	potentiometer	yes	yes	universal	24-48VDC	3-way	139
		1SVR 040 003 R 0600	potentiometer	yes	yes	universal	110-240VAC	3-way	139
Potentio-meter 420Ω-1MΩ	universal	**1SVR 040 000 R 1700**	potentiometer	yes	yes	universal	24-48VDC	3-way	137
		1SVR 040 001 R 0400	potentiometer	yes	yes	universal	110-240VAC	3-way	137

Analog standard signal converters
CC-E/STD, CC-U/STD
Ordering details



CC-E/STD

① Amplification adjustment
② Potentiometer for offset adjustment
③ LED green, supply voltage

CC-E

- 1 universally configurable converter (Type E-STD)
- 10 single function analog converters
- "Plug and Play", single function converters do not require adjustments
- Approvals

c UL us LISTED

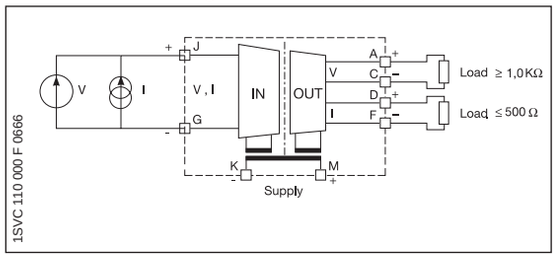
CC-U

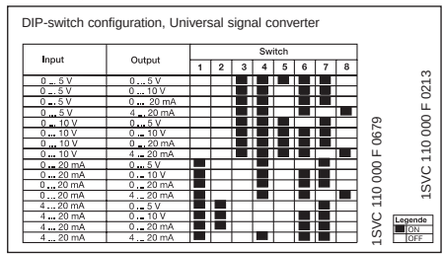
- More than120 different configurations
- Configurable output signal in case of input interrupts
- Short-circuit proof signal outputs prevent damage
- A very fast signal transmission allows the use in control circuits
- Approvals

c UL us LISTED

[1] UL 1604 Class I, Div.2

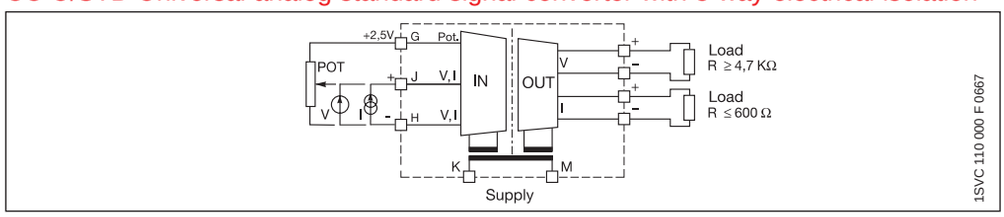
CC-E/STD Analog standard signal converter with 3-way electrical isolation

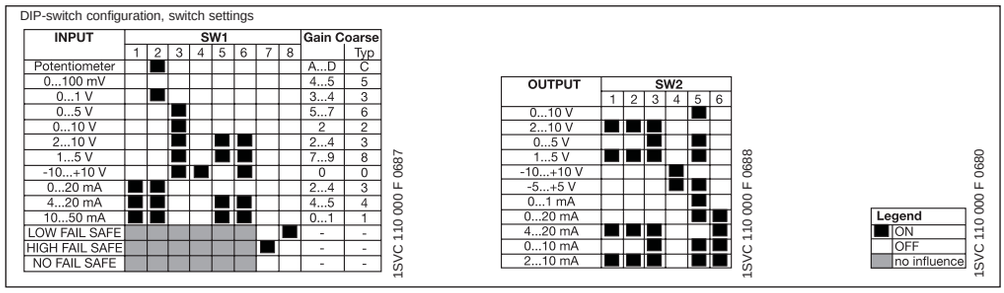




Type	Input signal	Output signal	Order code	Price 1 piece
Supply voltage: 24VDC				
CC-E/STD	0.5V, 0-10V,0-20mA, 4-20mA	0.5V, 0-10V,0-20mA, 4-20mA	**1SVR 011 700 R 0000**[1]	
CC-E V/V	0-10V	0-10V	**1SVR 011 710 R 2100**	
CC-E V/I		0-20mA	**1SVR 011 711 R 1600**	
CC-E V/I		4-20mA	**1SVR 011 712 R 1700**	
CC-E V/V	0-20mA	0-10V	**1SVR 011 713 R 1000**	
CC-E V/I		0-20mA	**1SVR 011 714 R 1100**	
CC-E V/I		4-20mA	**1SVR 011 715 R 1200**	
CC-E V/V	4-20mA	0-10V	**1SVR 011 716 R 1300**	
CC-E V/I		0-20mA	**1SVR 011 717 R 1400**	
CC-E V/I		4-20mA	**1SVR 011 718 R 2500**	
CC-E V/V	-10...+10V	-10...+10V	**1SVR 011 719 R 2600**	
Supply voltage: 110-240VAC				
CC-E/STD	0.5V, 0-10V,0-20mA, 4-20mA	0.5V, 0-10V,0-20mA, 4-20mA	**1SVR 011 705 R 2100**	
CC-E V/V	0-10V	0-10V	**1SVR 011 720 R 2300**	
CC-E V/I		0-20mA	**1SVR 011 721 R 1000**	
CC-E V/I		4-20mA	**1SVR 011 722 R 1100**	
CC-E V/V	0-20mA	0-10V	**1SVR 011 723 R 1200**	
CC-E V/I		0-20mA	**1SVR 011 724 R 1300**	
CC-E V/I		4-20mA	**1SVR 011 725 R 1400**	
CC-E V/V	4-20mA	0-10V	**1SVR 011 726 R 1500**	
CC-E V/I		0-20mA	**1SVR 011 727 R 1600**	
CC-E V/I		4-20mA	**1SVR 011 728 R 2700**	
CC-E V/V	-10...+10V	-10...+10V	**1SVR 011 729 R 2000**	

CC-U/STD Universal analog standard signal converter with 3-way electrical isolation





Type	Supply voltage	Order code	Pack. unit piece	Price 1 piece
CC-U/STD	24-48VDC/24VAC	**1SVR 040 000 R 1700**[1]	1	
	110-240VAC/100-300VDC	**1SVR 040 001 R 0400**[1]	1	

Packing unit: 1 piece

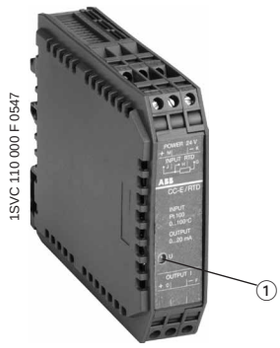
Universal analog standard signal converter CC-U/STDR
Temperature signal converter CC-E/RTD

Ordering details

CC-U/STDR

- 2 threshold relay outputs (2 c/o contacts)
- Open- or closed-circuits principle ajdustable by DIP switch
- Approvals

c UL us LISTED



CC-E RTD/I

① LED green-supply voltage

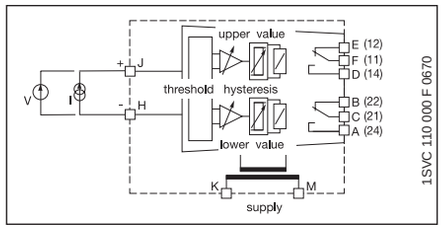
CC-E/RTD

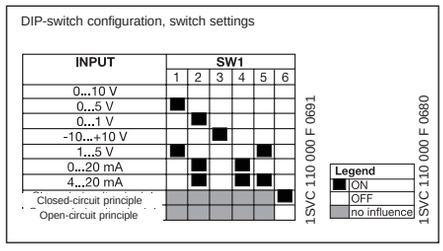
- Temperature signal converters for PT 100 sensors
- 2- or 3 sensor connection
- 1 universally configurable converter
- 12 single function models
- "Plug and Play", single function converters do not require adjustment
- Approvals

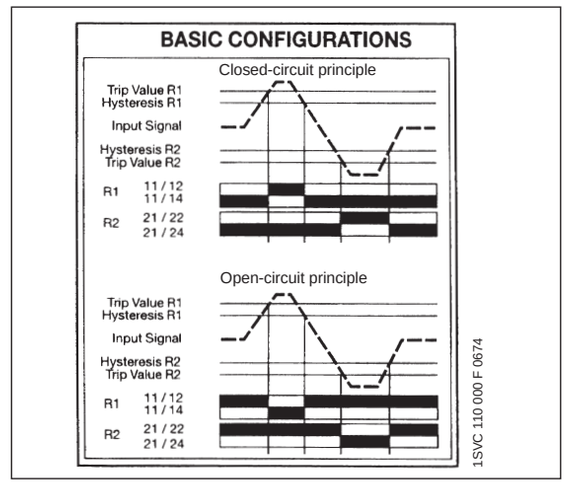
c UL us LISTED

[1] UL 1604 Class I, Div.2

CC-U/STDR Standard signal converter, with 2 threshold relay outputs (3-way isolated)

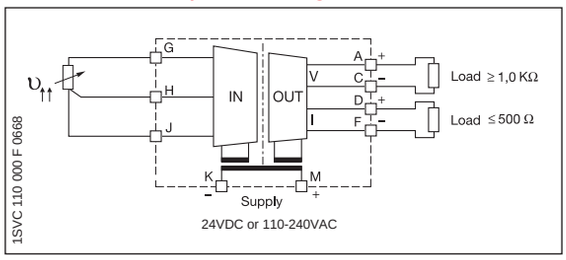


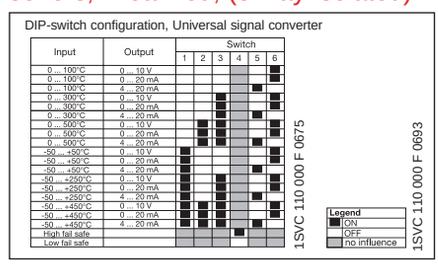




Type	Supply voltage	Order code	Pack. unit piece	Price 1 piece
CC-U/STDR	24-48VDC/24VAC	**1SVR 040 010 R 0000**[1]	1	
	110-240VAC/100-300VDC	**1SVR 040 011 R 2500**[1]	1	

CC-E/RTD Temperature signal converter PT 100 senors, linearized, (3-way isolated)



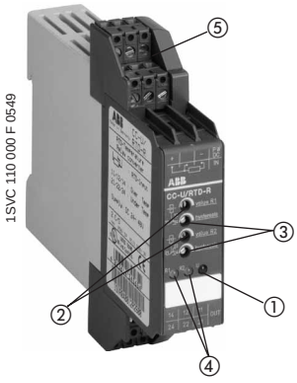


Type	Input signal	Output signal	Order code	Price 1 piece
Supply voltage: 24VDC				
CC-E/RTD	see table	0-10V, 0-20mA, 4-20mA	**1SVR 011 701 R 2500**[1]	
CC-E RTD/V	PT100 0...100°C	0-10V	**1SVR 011 730 R 2500**	
CC-E RTD/I		0-20mA	**1SVR 011 731 R 1200**	
CC-E RTD/I		4-20mA	**1SVR 011 732 R 1300**	
CC-E RTD/V	PT100 -50...+50°C	0-10V	**1SVR 011 733 R 1400**	
CC-E RTD/I		0-20mA	**1SVR 011 734 R 1500**	
CC-E RTD/I		4-20mA	**1SVR 011 735 R 1600**	
CC-E RTD/V	PT100 0...300°C	0-10V	**1SVR 011 736 R 1700**	
CC-E RTD/I		0-20mA	**1SVR 011 737 R 1000**	
CC-E RTD/I		4-20mA	**1SVR 011 738 R 2100**	
CC-E RTD/V	PT100 -50...+250°C	0-10V	**1SVR 011 739 R 2200**	
CC-E RTD/I		0-20mA	**1SVR 011 740 R 0700**	
CC-E RTD/I		4-20mA	**1SVR 011 741 R 2400**	
Supply voltage: 110-240VAC				
CC-E/RTD	see table	0-10V, 0-20mA, 4-20mA	**1SVR 011 706 R 2200**	
CC-E RTD/V	PT100 0...100°C	0-10V	**1SVR 011 788 R 2400**	
CC-E RTD/I		0-20mA	**1SVR 011 789 R 2500**	
CC-E RTD/I		4-20mA	**1SVR 011 790 R 2200**	
CC-E RTD/V	PT100 -50...+50°C	0-10V	**1SVR 011 791 R 1700**	
CC-E RTD/I		0-20mA	**1SVR 011 792 R 1000**	
CC-E RTD/I		4-20mA	**1SVR 011 793 R 1100**	
CC-E RTD/V	PT100 0...300°C	0-10V	**1SVR 011 794 R 1200**	
CC-E RTD/I		0-20mA	**1SVR 011 795 R 1300**	
CC-E RTD/I		4-20mA	**1SVR 011 796 R 1400**	
CC-E RTD/V	PT100 -50...+250°C	0-10V	**1SVR 011 797 R 1500**	
CC-E RTD/I		0-20mA	**1SVR 011 798 R 2600**	
CC-E RTD/I		4-20mA	**1SVR 011 799 R 2700**	

Packing unit: 1 piece

Universal temperature signal converter CC-U/RTD, CC-U/RTDR

Ordering details



CC-U/RTDR

① LED green-supply voltage
② R1/R2: upper/lower threshold
③ Hysteresis %: for R1/R2
④ LED yellow R1/R2 energized
⑤ Plug-in terminals

CC-U/RTD

- Temperature signal converter for PT10, PT100, PT1000 signals (acc. to IEC 751 and JIS C 1604*)
- Configurable output signals in case of the input signal os interrupts
- Short circuit proof signal outputs
- Approvals

c UL us LISTED

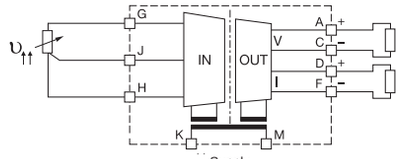
CC-U/RTDR

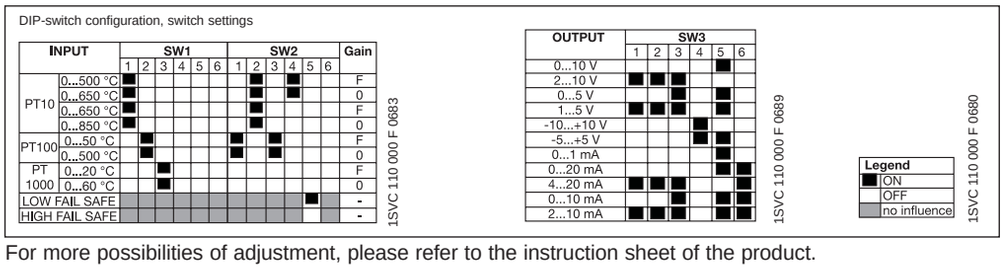
- Temperature singnal converter for PT100 signals and variable resistances 0-3800Ω
- 2 threshold relay outputs, upper and lower threshold adjustable
- Open- or closed-circuit principle ajustable by DIP-switches
- Approvals

c UL us LISTED

[1] UL 1604 Class I, Div.2

CC-U/RTD Universal temperature signal converter for PT10, PT100, PT1000 sensors linearized, with 3-way electrical isolation

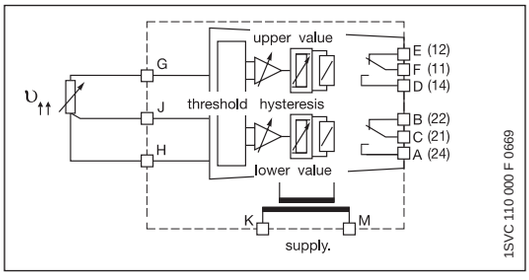


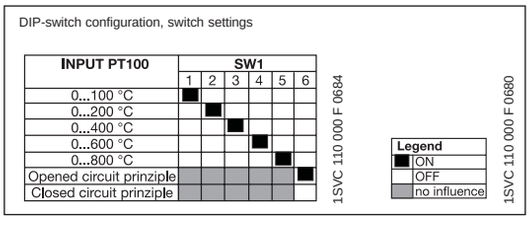


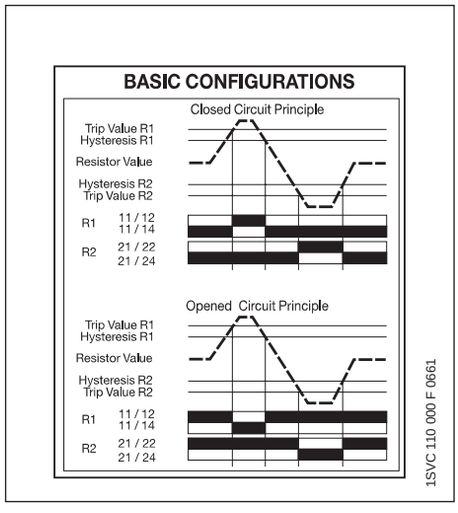
For more possibilities of adjustment, please refer to the instruction sheet of the product.

Type	Supply voltage	Order code	Pack. unit piece	Price 1 piece
CC-U/RTD	24-48VDC/24VAC 110-240VAC/100-300VDC	**1SVR 040 002 R 0500**[1] **1SVR 040 003 R 0600**[1]	1 1	

CC-U/RTDR Universal temperature singanl converter for PT100 sensors, with 2 threshold relay outputs (3-way isolated)





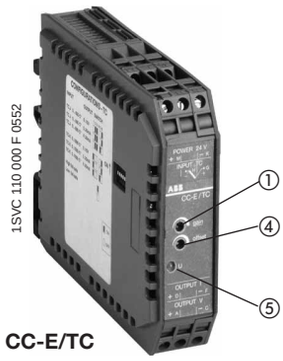


Type	Supply voltage	Order code	Pack.-unit piece	Price 1 piece
CC-U/RTDR	24-48VDC/24VAC 110-240VAC/100-300VDC	**1SVR 040 012 R 2600** **1SVR 040 013 R 2700**	1 1	

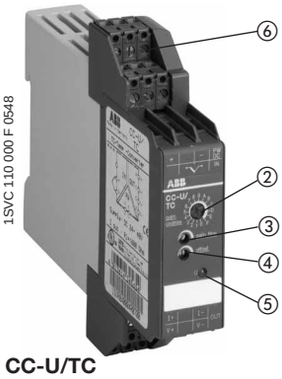
Packing unit: 1 piece

Temperature signal converters for thermocouple signals CC-E/TC, CC-U/TC

Ordering details



CC-E/TC



CC-U/TC

① Gain adjustment
② Gain coarse adjustment
③ Gain fine adjustment
④ Offset adjustment
⑤ LED green supply voltage
⑥ Plug in terminals

CC-E/TC

- 1 universally configurable thermocouple signal converter
- 6 single function models
- "Plug and Play", single function converters do not require adjustments
- Approvals

c UL us LISTED

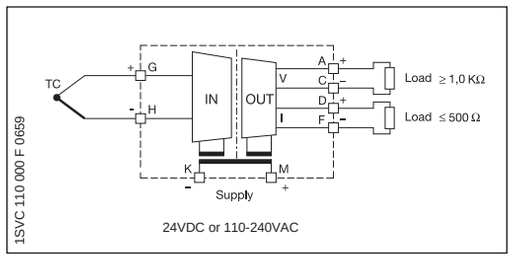
CC-U/TC

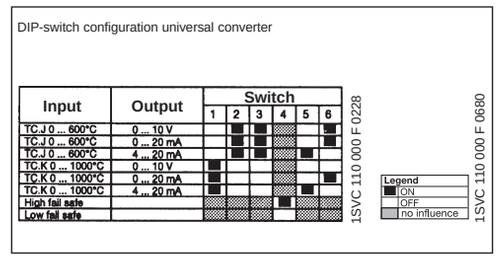
- For thermocouple sensors types K, J, T, S, E, N, R, B
- Adjustable voltage signal input 0-10mV and 0-50mV continously
- Differential temperature measurement 2)
- Configurable output signal in case of input signal interrupts
- Short-circuit proof outputs
- Approvals

c UL us LISTED

1) UL 1604 Class I, Div.2

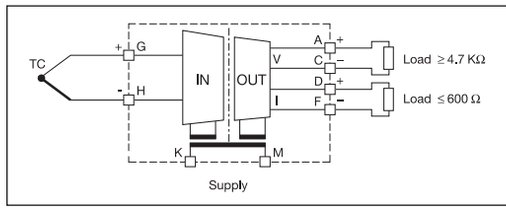
CC-E/TC Temperature signal converter for thermocouples type J and K,with 3-way electrical isolation

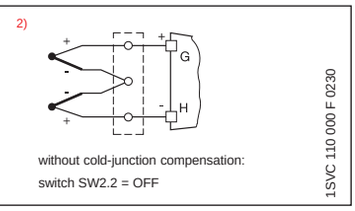


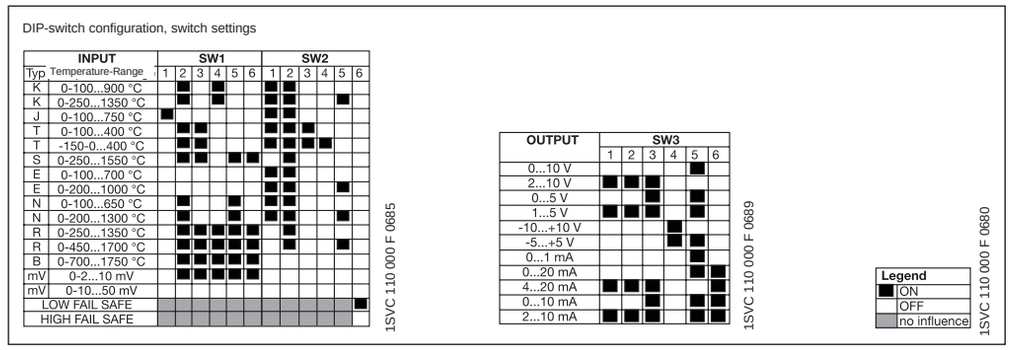


Type	Input signal	Output signal	Order code	Price 1 piece
Supply voltage: 24VDC				
CC-E/TC	thermocouples type J and K	0-10V, 0-20mA, 4-20mA	**1SVR 011 702 R 2600**[1]	
CC-E TC/V	type J 0-600°C	0-10V	**1SVR 011 750 R 0100**	
CC-E TC/I		0-20mA	**1SVR 011 751 R 2600**	
CC-E TC/I		4-20mA	**1SVR 011 752 R 2700**	
CC-E TC/V	type K 0-1000°C	0-10V	**1SVR 011 753 R 2000**	
CC-E TC/I		0-20mA	**1SVR 011 754 R 2100**	
CC-E TC/I		4-20mA	**1SVR 011 755 R 2200**	
Supply voltage: 110-240VAC				
CC-E/TC	thermocouples type J and K	0-10V, 0-20mA, 4-20mA	**1SVR 011 707 R 2300**	
CC-E TC/V	type J 0-600°C	0-10V	**1SVR 011 760 R 0300**	
CC-E TC/I		0-20mA	**1SVR 011 761 R 2000**	
CC-E TC/I		4-20mA	**1SVR 011 762 R 2100**	
CC-E TC/V	type K 0-1000°C	0-10V	**1SVR 011 763 R 2200**	
CC-E TC/I		0-20mA	**1SVR 011 764 R 2300**	
CC-E TC/I		4-20mA	**1SVR 011 765 R 2400**	

CC-U/TC Universal temperature signal converter for thermocouple signals (3-way isolated)







Type	Supply voltage	Order code	Pack. unit piece	Price 1 piece
CC-U/TC	24-48VDC/24VAC	**1SVR 040 004 R 0700**[1]	1	
	110-240VAC/100-300VDC	**1SVR 040 005 R 0000**[1]	1	

Packing unit: 1 piece

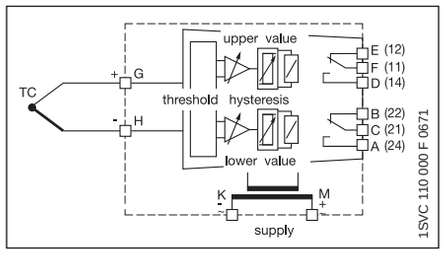
Temperature converter for thermocouple signals CC-U/TCR

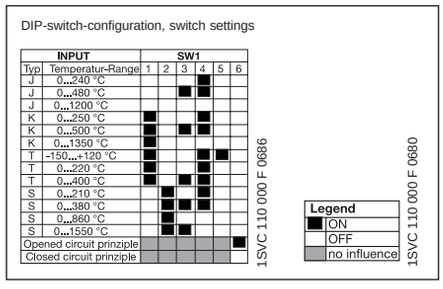
Ordering details

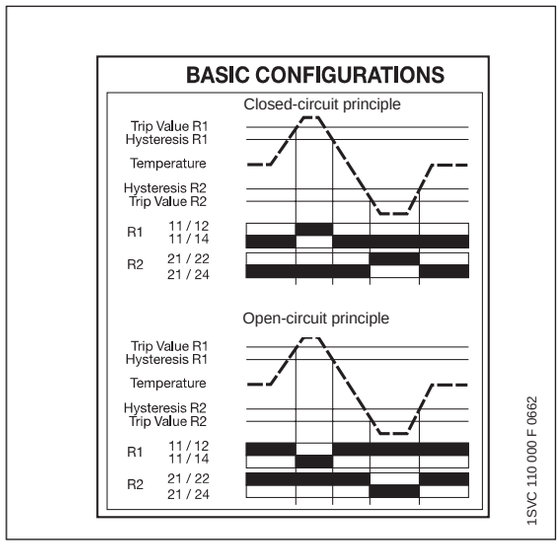
- For thermocouple sensor types J, K, T, S
- 2 threshold relay outputs, upper and lower threshold adjustable
- Open- or closed-circuit principle adjustable by DIP switches
- Thresholds and hysteresis adjustable by front face potentiometers
- Approval

c UL us LISTED

CC-U/TCR Universal temperature signal converter for thermocouple signals with 2 threshold relay outputs (3-way isolated)







Type	Supply voltage	Order code	Pack. unit piece	Price 1 piece
CC-U/TCR	24-48VDC/24VAC	**1SVR 040 014 R 2000**	1	
	110-240VAC/100-300VDC	**1SVR 040 015 R 2100**	1	

Packing unit: 1 piece

Measuring converters for sinusoidal and DC currents CC-E/I, CC-E/ILPO

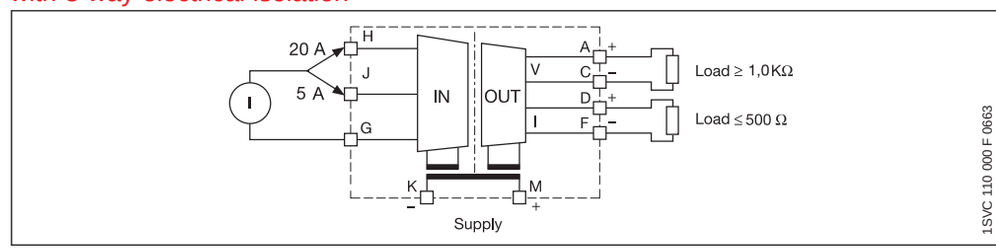
Ordering details

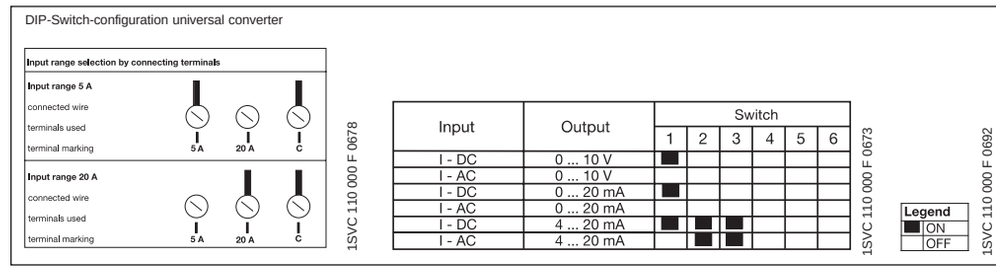
CC-E/I

- 1 universally configurable current signal converter
- 6 single function models
- "Plug and Play", single function converter do not require adjustments
- Approvals

c UL us LISTED

CC-E/I Current measuring converter for 5A, 20A, AC/DC, with 3-way electrical isolation



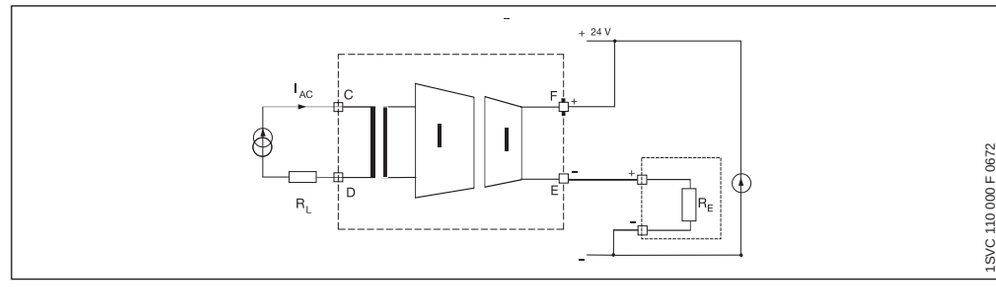


Type	Input signal	Output signal	Order code	Price 1 piece
Supply voltage: 24VDC				
CC-E/I	0-5A, 0-20A/AC/DC	0-10V, 0-20mA, 4-20mA	**1SVR 011 703 R 2700**[1)]	
CC-E I_{AC}/V	0-5A, 0-20A/AC	0-10V	**1SVR 011 770 R 0500**	
CC-E I_{AC}/I		0-20mA	**1SVR 011 771 R 2200**	
CC-E I_{AC}/I		4-20mA	**1SVR 011 772 R 2300**	
CC-E I_{DC}/V	0-5A, 0-20A/DC	0-10V	**1SVR 011 773 R 2400**	
CC-E I_{DC}/I		0-20mA	**1SVR 011 774 R 2500**	
CC-E I_{DC}/I		4-20mA	**1SVR 011 775 R 2600**	
Supply voltage: 110-240VAC				
CC-E/I	0-5A, 0-20A/AC/DC	0-10V, 0-20mA, 4-20mA	**1SVR 011 708 R 0400**	
CC-E I_{AC}/V	0-5A, 0-20A/AC	0-10V	**1SVR 011 780 R 1100**	
CC-E I_{AC}/I		0-20mA	**1SVR 011 781 R 0600**	
CC-E I_{AC}/I		4-20mA	**1SVR 011 782 R 0700**	
CC-E I_{DC}/V	0-5A, 0-20A/DC	0-10V	**1SVR 011 783 R 0000**	
CC-E I_{DC}/I		0-20mA	**1SVR 011 784 R 0100**	
CC-E I_{DC}/I		4-20mA	**1SVR 011 785 R 1100**	

CC-I/ILPO

- Measuring converter to measure sinusoidal AC currents (0-1A, 0-5A)
- Multi-range selection by front mounted slide-switch
- Output signal 0-20mA, proportional to the input current
- Requires no additional supply

CC-E/ILPO Current measuring converter, without auxilary power for sinusoidal currents 0-1A, 0-5A, 0(4) - 20mA output



Type	Input signal	Order code	Pack. unit piece	Price 1 piece
CC-E/ILPO	0-1A, 0-5A	**1SVR 010 203 R 0500**	1	

[1)] UL 1604 Class I, Div.2

Packing unit: 1 piece

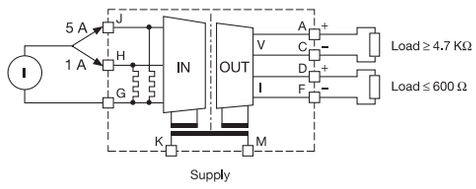
Universal signal converters for current or voltage RMS values CC-U/I, CC-U/V

Ordering details

- RMS converter for current signals up to 1 A and up to 5 A with any curve form
- Short-circuit proof outputs
- Approvals

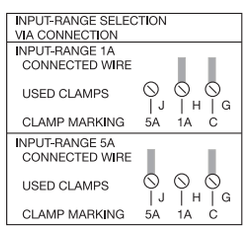
c UL us LISTED

CC-U/I Universal current measuring converter for RMS values 0-1A and 0-5A, with 3-way electrical isolation



1SVC 110 000 F 0664

DIP-switch configuration, universal signal converter



1SVC 110 000 F 0681

OUTPUT	SW1 1	2	3	4	5	6
0...10 V					■	
2...10 V	■	■	■			
0...5 V			■		■	
1...5 V	■	■	■		■	
-10...+10 V				■		
-5...+5 V				■	■	
0...1 mA					■	
0...20 mA					■	■
4...20 mA	■	■	■			■
0...10 mA			■		■	■
2...10 mA	■	■	■		■	■

1SVC 110 000 F 0690

Legend
■ ON
OFF
no influence

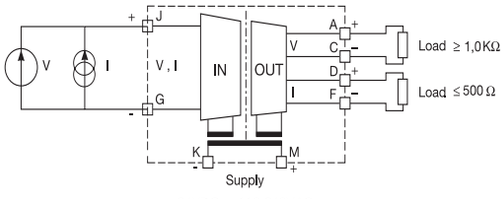
1SVC 110 000 F 0680

Type	Supply voltage	Order code	Pack. unit piece	Price 1 piece
CC-U/I	24-48VDC/24VAC	**1SVR 040 006 R 0100**	1	
	110-240VAC/100-300VDC	**1SVR 040 007 R 0200**	1	

- RMS converter for voltage signals up to 600V with any curve form
- Short-circuit proof outputs
- Approvals

c UL us LISTED

CC-U/V Universal voltage measuring converter for voltage RMS values 0-600V, with 3-way electrical isolation



1SVC 110 000 F 0666

Measuring voltage ranges:

DIP-switch configuration, universal signal converter

INPUT-RANGE SELECTION VIA FRONT-ROTARY-SWITCH	SWITCH-POSITION
0...100 V	1
0...150 V	2
0...250 V	3
0...300 V	4
0...400 V	5
0...450 V	6
0...550 V	7
0...600 V	8

1SVC 110 000 F 0682

OUTPUT	SW1 1	2	3	4	5	6
0...10 V					■	
2...10 V	■	■	■			
0...5 V			■		■	
1...5 V	■	■	■		■	
-10...+10 V				■		
-5...+5 V				■	■	
0...1 mA					■	
0...20 mA					■	■
4...20 mA	■	■	■			■
0...10 mA			■		■	■
2...10 mA	■	■	■		■	■

1SVC 110 000 F 0690

Legend
■ ON
OFF
no influence

1SVC 110 000 F 0680

Type	Supply voltage	Order code	Pack. unit piece	Price 1 piece
CC-U/V	24-48VDC/24VAC	**1SVR 040 008 R 1300**	1	
	110-240VAC/100-300VDC	**1SVR 040 009 R 1400**	1	

Packing unit: 1 piece

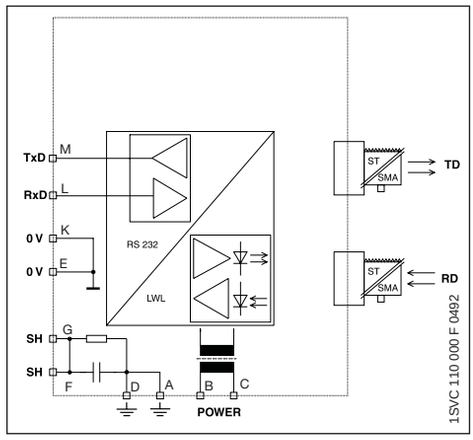
Serial link interface CI-RS 232/FO-S, CI-RS 232/FO-P, CI-RS 485/FO-S, CI-RS 485/FO-P

Ordering details

3-way electrically isolated converter for RS 232 to fiber optic (serial link plastic (P) or glas (S))

- 3-way electrical isolation between power supply, input and output
- Baud rate up to 115.2 kbit/s
- Available for plastic or glass fibers
- Transmission distance up to 4 km (glas)
- Usable in "very noisy" environments
- 24-42VAC/DC and 110-240VAC power supply
- CE-marked
- Approvals

c UL us LISTED

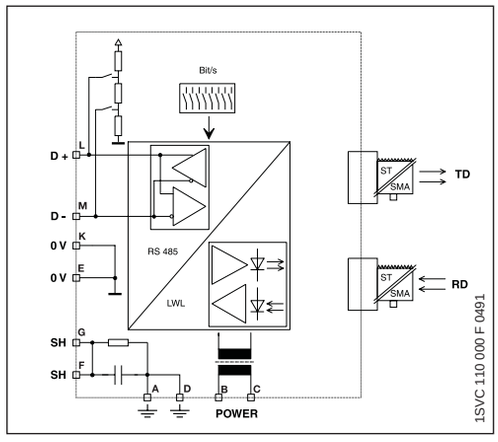


Type	Supply voltage	Order code	Pack.-unit piece	Price 1 piece
CI-RS 232/FO-S	24-42VAC/DC	**1SVR 084 236 R 1400**	1	
	110-240VAC/DC	**1SVR 084 237 R 1500**	1	
CI-RS 232/FO-P	24-42VAC/DC	**1SVR 084 238 R 2600**	1	
	110-240VAC/DC	**1SVR 084 239 R 2700**	1	

3-way electrically isolated converter for RS 485 (1-pair) to fiber optic (serial link plastic (P) or glass (S))

- 3-way electrical isolation between power supply and input/output
- Baud rate up to1.5 Mbit/s
- Available for plastic or glass fibers
- Transmission distance up to 4 km (glas)
- Usable in "very noisy" environments
- 24-42VAC/DC and 110-240VAC power supply
- CE-marked
- Approvals

c UL us LISTED



Baud rate:
SW1 DIP-switch configuration

Baudrate bit/s	SW 1 1	2	3	4	5	6	7	8
1500000		■		■	■			
500000	■		■		■			
375000	■	■				■		
187500	■		■		■	■		
136000		■				■		
115200		■	■		■			
93750	■	■	■	■			■	
75000	■		■	■		■	■	
57600			■	■	■	■	■	
38400			■		■	■	■	
19200	■		■			■	■	
9600		■				■	■	
4800		■	■	■	■	■		■
300			■					■

1SVC 110 000 F 0676

Legend: ■ on, □ off

End-of-line resistor, polarization
SW2 DIP switch configuration 2

	SW 2 1	2	3	4	5	6
Polarisation		■	■			
EOL 60 ohm				■	■	■
EOL 120 ohm						■
EOL 180 ohm				■	■	
EOL 240 ohm					■	
EOL indefinite						

1SVC 110 000 F 0677

Type	Supply voltage	Order code	Pack. unit piece	Price 1 piece
CI-RS 485/FO-S	24-42VAC/DC	**1SVR 084 246 R 2600**	1	
	110-240VAC/DC	**1SVR 084 247 R 2700**	1	
CI-RS 485/FO-P	24-42VAC/DC	**1SVR 084 248 R 0000**	1	
	110-240VAC/DC	**1SVR 084 249 R 0100**	1	

Packing unit: 1 piece

Analog signal converters CC-E/STD, CC-E/RTD, CC-E/TC, CC-E/I, CC-E/ILPO

Technical data

	CC-E/STD		CC-E/RTD	CC-E/TC
Input circuit J-G-H	current	voltage	resistance thermometer PT100	thermocouples (IEC 584-1 and 2)
Input signal	0-20mA / 4-20mA	0-5V / 0-10V/-10...+10V		
Input measuring range			-50...+500 °C	TC.K 0-1000°C, TCJ 0-600°C
Limitation of input signals	+55mA	± 11V		
Influence of line resistance			<0.01 % / Ω	> 0.5 %/100 Ω
Setting range gain (univ. converter)	± 5%			
Setting range offset (univ. converter)	± 5%			
Input impedance	50 Ω	1 mΩ		
Suppression at 50Hz				> 35 dB
Common mode suppression			100 dB	
Output circuits D-F A-C	current		voltage	
Output signal	0-20mA, 4-20mA		0-5V, 0-10V	
Output load	≤ 500 Ω		≥ 1.0 KΩ	
Accuracy	0.5 % of the end value			
Temperature coefficient	± 500 ppm / °C			
Residual ripple	< 0.5 %			
Response time	200 µs		10ms	
Transmission frequency	2kHz		80Hz	2Hz (up to 3db)
Reaction of an open input circuit			Low Fail Safe: Output voltage > 15 % of the measuring rang (only -/RTD and -/TC)* Low Fail Safe: Output current < -0.6V Output current = 0mA	

* Reaction of single-function devices on an input signal interruption by LOW FAIL SAFE

	CC-E/I		CC-E/ILPO
Input circuits J-G-H / C-D (E/ILPO)	current measuring AC	voltage measuring DC	2 measuring ranges selectable
Measuring signal / input signal (CC-E/ILPO)	0-5A / 0-20A	0-5A / 0-20A	0-1A, 0-5A sinusoidal
Measuring frequency	50-60Hz	-	50-60Hz
Current peak load allowance on the inputs	10 times for max. 1s		10 x I_{Nom} for max. 2s
Setting range gain (univ. converter)	± 5%		
Setting range offset (univ. converter)	± 5%		
Input impedance / Input resistance	5A = 65 Ω	20A = 2,5 mΩ	5mΩ
Output circuits D-F A-C / F-E (E/ILPO)	current	voltage	passive current output, proportional to the input current
Output signal	0-20mA / 4-20mA	0-10V	0-20mA / 4-20mA
Output load / Output voltage(CC-E/ILPO)	≤ 500 Ω	≥ 1.0 Ω	12VDC - 150 Ω / 24VDC - 750 Ω /30VDC - 1050 Ω
Accuracy	2 % from end value		±2%
Offset adjustable			±5%
Gain adjustable			±20%
Temperature coefficient	± 500 ppm / °C		300 ppm / °C
Residual ripple	< 0.5 %		
Response time	0.5 s		
Transmission frequency	DC; 50-60Hz		
Reaction to an open input circuit	Low Fail Safe: Output voltage <200mV Output current <400 µA		

	CC-E/STD	CC-E/RTD	CC-E/TC	CC-E/I	CC-E/ILPO
Supply circuit K - M	DC versions		AC versions		
Supply voltage	24VDC		110...240VAC - 50/60Hz		
Supply voltage tolerance	-15% ... + 15%		-15% ... + 10%		
Power consumption	type 1.5W		type 1.5VA		
Display of operational status	U				
Supply voltage	LED green				
Test voltage between all isolated circuits	2.5kVAC				
Operating temperature range	0 °C ... +60 °C				-20 °C ... +60 °C
Storage temperature range	-20 °C ... +80 °C				-40 °C ... +80 °C
Degree of protection to DIN 40050	IP 20				
Mounting position	Ventilation slots at bottom and top				
Mounting on DIN-rail (EN50022 an EN50035)	Snap-on mounting				
Cable size single-wire / fine stranded	4 mm² / 2.5 mm² (10/14 AWG)				1x 2.5 mm² (1x14 AWG)

Analog signal converter CC-U/STD, CC-U/RTD, CC-U/TC, CC-U/I, CC-U/V

Technical data

	CC-U/STD			CC-U/RTD	CC-U/TC
Input circuits J - G -H	current	voltage	potentiometer	PT10, PT100, PT1000 (IEL751 u. JICC1604)	Thermocouple (IEC584-1 u. 2)
Input signals	0-20mA/4-20mA 10-50mA/0-1mA	0-100mV/0-1V/0-5V 1-5V/0-10V/2-10V ±10V	470 Ω ...1MΩ		TC.K, TCJ, TC.T, TC.S, TC.E, TC.N, TC.R, TC.B
Limitation of input signals	±55mA	±11V	10kΩ		
Temperature range				Max. temperature adjustable from 20-60 °C for PT1000 from 50-500 °C for PT100 from 500-850 °C for PT10	refer to the temp. specs. of the individual thermocouples
Influence of the line resistance				0.015 °C / Ω	< 0.01 % / 100 Ω
Adjusting range of amplification (univ. converter)	0.9 - 110mA continuously	45mV- 22V continuously			
Offset, adjustable range (univ. converter)		-137.5% ... +62.5% continuously		adjustable ±5 %	adjustable ±10 %
Input impedance		for different fields			
Without detection of input interrupt	51 Ω	6 MΩ	3 GΩ		
With detection of input interrupt	51 Ω	3.5 MΩ	9.5 GΩ		
Suppression at 50Hz					> 40 dB
Common mode suppression				120 dB	105 dB
Output circuits D - F A - C			current	voltage	
Output signal			0-20mA, 4-20mA	0-5V, 1-5V, 0-10V, 2-10V, ±10V	
Output load			≤ 600 Ω	≥ 4.7KΩ	
Accuracy		0.1 % of the final value		0.2 % of the final value	0.1 % of the final value
Temperature coefficient		± 150 ppm / °C		± 250ppm / °C	±200 ppm/°C at min. Offset ±400 ppm/°C at max. Offset
Residual ripple				< 0.15 %	
Response time		200µs		10ms	200ms
Transmission frequency		1kHz		80Hz	2Hz (bis -3db)
Supply ciruits K - M					
Supply voltage			24-48VDC / 24VAC	110-240VAC / 100-300VDC	
Supply voltage tolerance			DC: -15% ... + 15%	AC: -15% ... + 10%	
Power consumption			2W at 24VDC	4.5VA at 230VAC	
General data					
Test voltage between all isolated circuits			1.5kV		
EWM-tests			EN 50 081-2; EN 50 082-2		
Operation temperature range			-20 °C ... +60 °C		
Storage temperature range			-40 °C ... +80 °C		
Mounting position			any		
Mounting on DIN-rail (EN50022)			Snap on mounting / Screw mounting by adapter		
Wire size stranded wire end			omniconnect plug connectors with screw terminals 1.5mm² (16 AWG)		

	CC-U/I	CC-U/V
Input circuits J-G-H	any current signals, effective value measurements	any voltage signals, effective value measurements
Measuring signal	0-1A / 0-5A	0-100V / 0-200V / 0-300V 0-400V / 0-500V / 0-600V
Measuring frequency	0 - 600Hz	
Current overload ability of the inputs	max. 10 I_{Nom} for max 2 s	
Input impedance	60mΩ / 12 mΩ	> 800kΩ
Offset	adjustable ±20%	
Amplification	± 15%	
Output circuits D-F / A-C	current	voltage
Output signals	0-20mA / 4-20mA	0-5V/1-5V/ 0-10V/ 2-10V/±10V
Output load	≤ 600 Ω	≤ 4.7 kΩ
Accuracy	0,5 %	
Temperature coefficient	±250 ppm/°C max.	300 ppm/°C max.
Residual ripple	<0.15 %	
Response time	150 ms	
Supply circuits K-M	current measuring AC	current measuring DC
Supply voltages	24-48VDC / 24VAC	110-240VAC / 100-300VDC
Supply voltage tolerances	DC: -15 % ... +15 %	AC: -15 % ... +10 %
Power consumption	2W at 24VDC	4.5VA at 230VAC
General data		
Testing voltage between all isolated circuits	1.5kVAC	
EMC-test	EN 50 081-2; EN 50 082-2	
Operating temperature range	-20 °C ... +60°C	
Strorage temperature range	-40 °C ... +80°C	
Mounting position	any	
Mounting on DIN-rail (EN 50 022)	Snap on mounting / Screw mounting by	
Wire size stranded with wire end ferules	plug connectors with screw terminals 1.5 mm² (16 AWG)	

Analog signal converters CC-U/xR with threshold relay outputs

Technical data

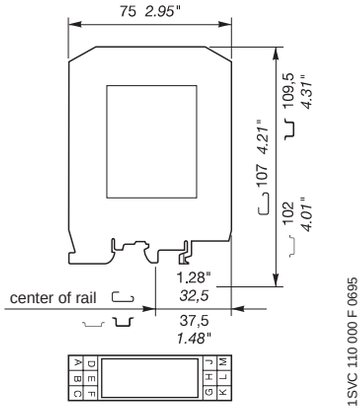
	CC-U/STDR		CC-U/RTDR	CC-U/TCR
Input circuits J - H	current	voltage	Resistance thermometer	Thermocouple (IEC 584-1/-2)
Measuring signal/Input measuring range	0-20/4-20mA	0-1/1-5/0-10/±10V	0-3800Ω	TC.K, J,T,S
Input load	50Ω	> 5mΩ		
Adjustable threshold	2-100% of the configured input range			
Adjustable hysteresis	5-50% of the adjusted threshold			
Repeating accuracy of the settings	0.50 %			
Temperature coefficient	±300ppm/°C			
Output circuits E - D - F, B - C - A	Relays, 2 c/o			
Switching voltage	250VAC			
Switching current AC12 (resistive)	4A (at 230V)			
Switching current AC15 (inductive)	3A (at 230V)			
Switching current DC12 (resistive)	4A (at 24V)			
Switching current DC13 (inductive)	2A (at 24V)			
Switching voltage min.	12V			
Switching current min./ switching power min.	10mA/0.6 VA(W)			
Response time	10ms			
Mechanical life max.	30 Mio. operations			
Electrical life max.	0.1 Mio. operations			
Supply circuits K - M				
Supply voltages	24-48VDC/24VAC		110-240VAC/100-300VDC	
Supply voltages tolerance	DC: -15%...+15%		AC: -15% ... +10%	
Power consumption	2W at 24VDC		4.5VA at 230VAC	
Display of operational status				
Supply voltage	LED green			
1st output relay energized	LED yellow			
2nd output relay energized	LED yellow			
General data				
Isolation test between all isolated circuits	1.5kV			
EMC test	EN 50 081-2; EN 50 082-2			
Operating temperature range	-20 °C ... +60 °C			
Storage temperature range	-40 °C ... +80 °C			
Mounting position	any			
Mounting on DIN rail (EN 50 022)	Snap on mounting / Screw mounting by adapter			
Wire size stranded with wire end ferrules	plug connectors with screw terminals 1.5 mm^2 (16 AWG)			

Serial data converter
CI-RS 232/FO-S, CI-RS 232/FO-P
CI-RS 485/FO-S, CI-RS 485/FO-P
Technical data

	CI-RS 232/FO-S, CI-RS 232/FO-P	CI-RS 485/FO-S, CI-RS 485/FO-P
Power supply	polary reverse protection for DC version	
Supply voltage	24-42VAC/DC	110-240VAC (50/60Hz)
Voltage tolerance	-15% ... +10%	-15% ... +10%
Power consumption	approx. 3W	approx. 3 VA
Connections	pluggable connector	
RS 232 interface 1	CCITT V.24/DIN 66020-CCITT V.28 DIN 66259-EIA232E	
Protection	integrated (transil 8kV 1.2/50µs)	
Max. speed/ Max. distance	max. 115.2kbits/s / max. 15m / 2500pF	
Connection	pluggable connector	
RS 422/485 interface1		ISO / IEC 8482 / DIN 66 259-4; EIA 485
Protection		integrated (transil 8kV 1.2/50µs)
Max. speed/ Max. distance		max. 1.5Mbits/s / max. 1200m (38.4kbit/s)
Connection		pluggable connector (Omniconnect)
Fiber optic interface 2	DIN VDE 0888-1	
Type of fiber / Connections	multimode fiber glass: ST connector / plastic: FSMA connector	
Wavelength	glass: 820nm / plastic: 655nm	
Max. transmission power	glass: 50/125µm: -14.4db/m glass: 62.5/125µm: -14db/m plastic: 980/1000µm: -8db/m	
Max. Reception power	glass: -28db/m / plastic: -20db/m	
Max. speed	max. 115.2 Kbit/s	max. 1.5 Mbit/s
Max. distance	glass: 50/125µm: 3km glass: 62.5/125µm: 4km plastic: 980/1000µm: 40m	
Display of operational status		
Supply voltage	1 LED yellow	
Status of signal transmission	2 LEDs green (RxD, TxD)	2 LEDs green (RxD, TxD)
EMC- tests		
ESD	EN 61000-4-2 level 3 6/8kV	
RF field	EN 61000-4-3 level 3 10V/m	
Burst	EN 61000-4-4 level 3 1kV	
Electromagnetic compatibility	EN 55022 class B	
General data		
Galvanic isolation input between all isolated circuits	2.5kV	
Function configuration	with DIP switch	
Operating temperature	-20°C ... +60°C	
Storage temperature	-40°C ... +85°C	
Mounting position	any	
Mounting on DIN-rail (EN 50002)	snap-on mounting	
Connection	2.5mm^2 (14 AWG) / fine stranded with wire end ferrule , 4 mm^2 rigid	
Dimensions (LxWxH)	105 x 22.5 x 112mm	

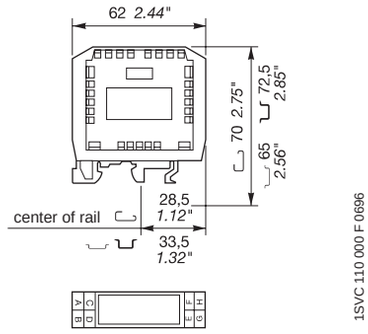
Dimensions

CC-E/x



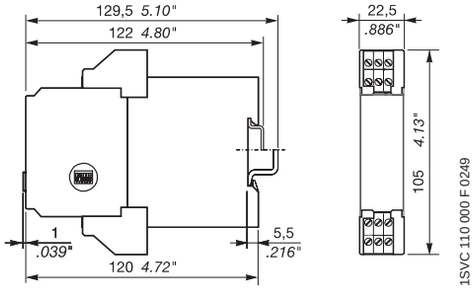
1SVC 110 000 F 0695

CC-E/ILPO



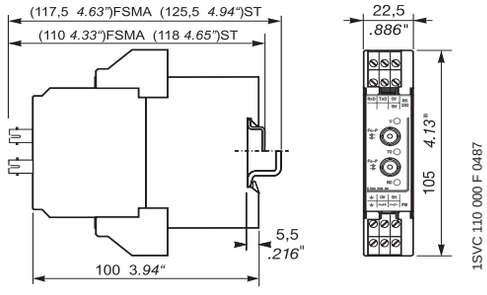
1SVC 110 000 F 0696

CC-U/x , CC-U/xR



1SVC 110 000 F 0249

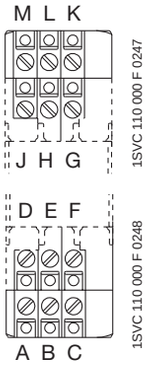
CI-RS



1SVC 110 000 F 0487

Connection terminals, CC-U/x, CI-RS

Width 22.5 mm .886"

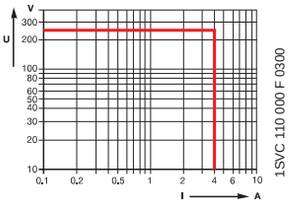


1SVC 110 000 F 0247

1SVC 110 000 F 0248

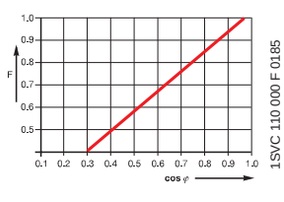
Load limit curves, CC-U/x R

AC load (resistive)



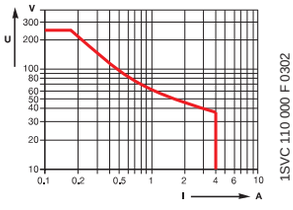
1SVC 110 000 F 0300

Derating curve



1SVC 110 000 F 0185

DC load



1SVC 110 000 F 0302

Notes