

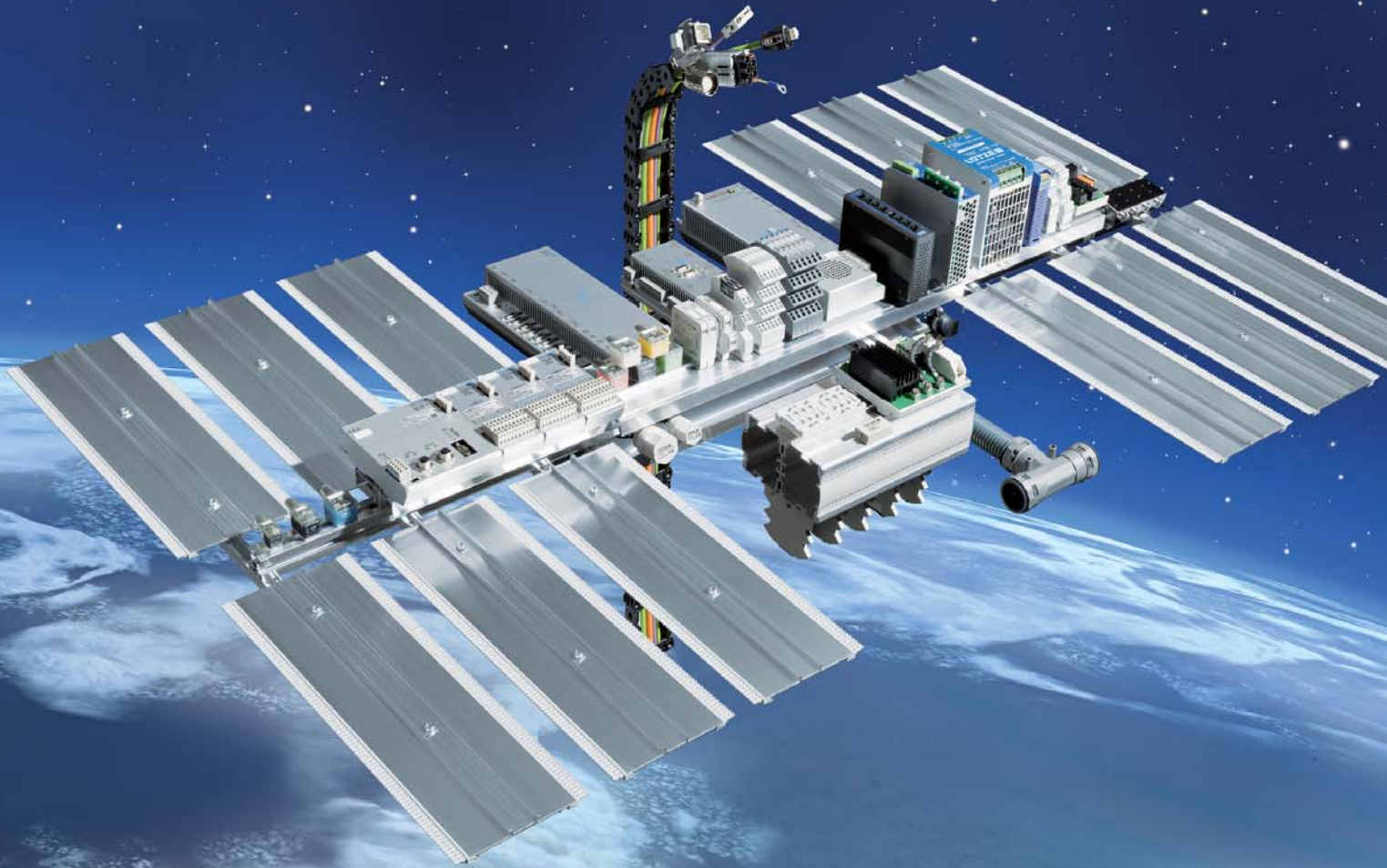
■ Control Solutions

LÜTZE Converters

LCIS Signal Converters
Microcompact Converters
Monitoring Relays

Efficiency in Automation

Cable • Connectivity • Cabinet • Control



Welcome to LÜTZE

Cable Solutions



Efficiency in Automation - A reflection of our company philosophy

As an experienced specialist in automation technology, with solutions for flexible and high flexing cables, cable assemblies, interfaces, current control and cabinet wiring, we have had a focus on efficiency for many years.

Connectivity Solutions



LÜTZE defines Efficiency in Automation field as the use of sustainable products and solutions to further increase the performance of our products in our customers applications.

We realise this by using components for highly efficient control systems, products with above average life cycles and raising energy efficiency in control cabinets by means of the LSC wiring system.

Cabinet Solutions



Efficiency in Automation reflects our efforts in striving for efficient working relationships with our customers: in a medium sized family owned company we have short communication channels and a high level of manufacturing competence.

The value of a product or a solution from LÜTZE is determined by its sustainable qualities. Every innovation will only be successful in the future if it has a long term positive effect. Therefore, we provide long lasting as well as highly efficient components.

Control Solutions



Thus LÜTZE creates value through efficiency. LÜTZE provides answers and demonstrates how to handle resources responsibly, with our environment and our future in mind.
LÜTZE - Efficiency in Automation

For more information on our solutions, please visit www.luetze.com or www.lutze.com

Transportation Solutions





Business Management: Sustainable and forw



The future is blue

Sustainable enterprise means thinking and planning ahead, understanding and embedding the belief that long lasting success is more important than short-term profit maximisation.

This is an attitude that has existed within LÜTZE for quite some time. Economic and environmental responsibilities complement each other well and are reflected in the sustainable management and

product policy - and from now in the **SkyBLUE** campaign.

We manufacture our products in a resourceful and energy-conscious manner. We use long lasting, environmentally-friendly materials.

And our products, in turn, help our customers save energy and resources.

Good for everyone: for us, for the environment, for our customers a win-win-win situation.

ard-looking

„The competitiveness of our industry and of its suppliers depends quite substantially on how we succeed in developing practical results. The results that we produce together today, are our competitive advantages in the future.“

Udo LÜTZE,

*Member of the Executive Committee of
the Green Carbody Innovation Alliance*



Goods with real value

The value of a product or a solution from LÜTZE is determined by its sustainable qualities as well. Every innovation is only as successful in the future if it has a long-term positive effect. Therefore, we provide long lasting as well as highly efficient components.

We are incorporating the necessary knowledge and manufacturing competence in numerous joint projects with the objective of improving energy efficiency and

sustainable technologies and industries. Thus, LÜTZE provides answers and demonstrates how to handle resources responsibly, with our environment and our future in mind.



RoHS



What moves us: Quality, innovation, eff



The people at LÜTZE

Quality, innovation and efficiency begin with people. We would not be where we are today without our highly qualified and motivated employees. An uncompromising focus on quality, nearly 60 years of experience in automation technology and of course a common desire for greater innovation and efficiency – that's what makes LÜTZE so successful.

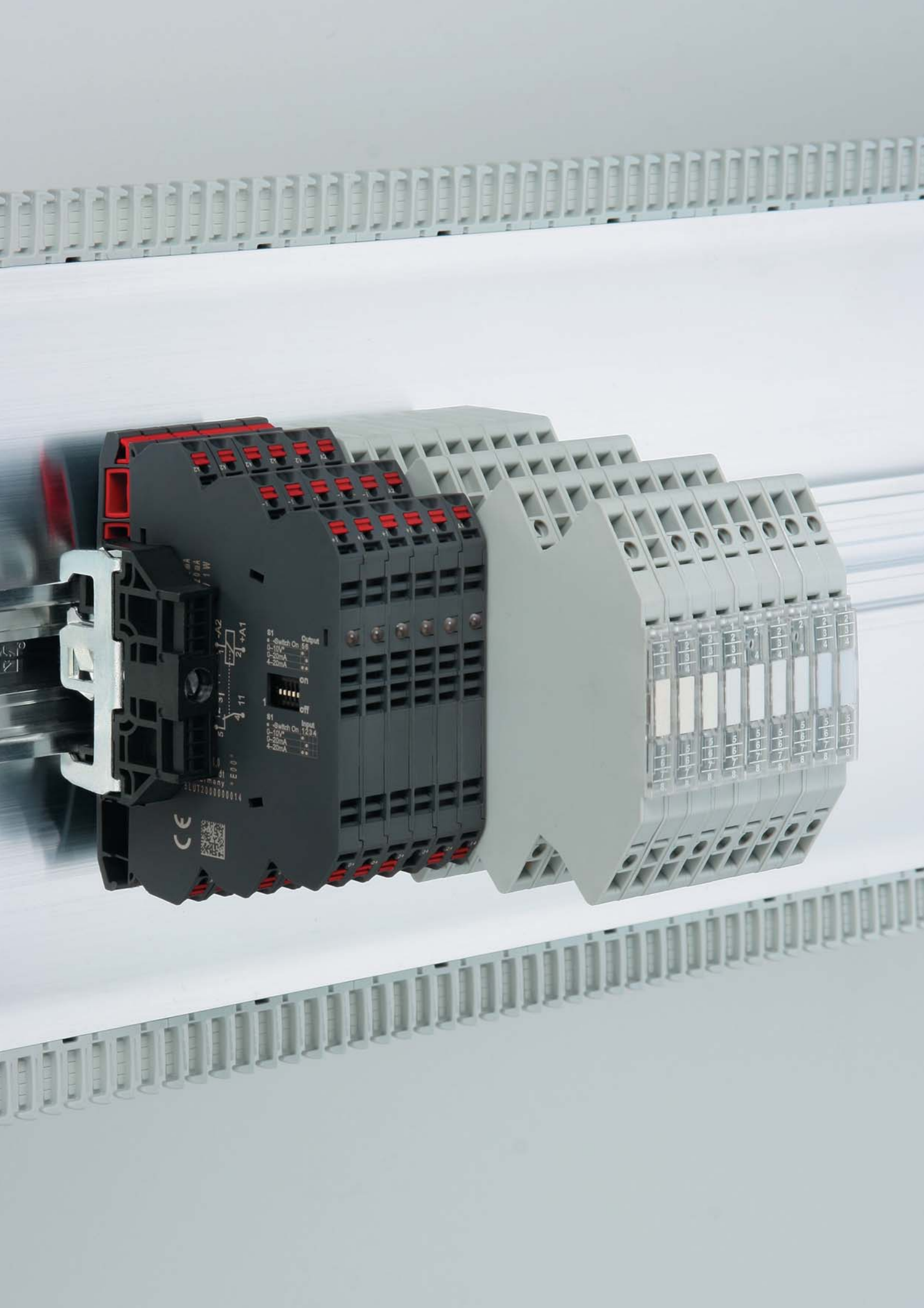
The people at LÜTZE are familiar with automation applications and technologies across all disciplines, as they are involved with our broad range of products comprising four product areas Cable, Connectivity, Cabinet and Control.



iciency

A prime example of competence in cables: In addition to manufacturing expertise, our cable assembly specialists are familiar with all cable types and offer genuine added value. The decisive advantage: We're cable experts – since 1958.





Signal Isolation Transformers · Product Overview

LCIS



Analog/analog converter passive

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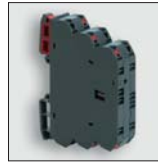
Analog/analog converter

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Analog/analog converter

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Analog/analog converter

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Poti/analog converter

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Analog/analog converter

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Temperature/analog converter

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LCON



Analog/analog converter

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Temperature/analog converter

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Analog / limit value switch

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Temperature / limit value switch

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Analog/analog splitter

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Analog/analog limit value switch

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Monitoring relays



Voltage monitoring, 1-phase

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Voltage monitoring, 3-phase

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Current monitoring, 1-phase, AC/DC 10 A

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Current monitoring, 1-phase, AC/DC 100 A

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Current monitoring in 3-phase networks, 1-phase, AC 5 A

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Current monitoring in 3-phase networks, 3-phase, AC/DC 5 A

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Load monitoring for 1- and 3-phase AC 480 V

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Load monitoring for 1- and 3-phase AC 690 V

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Phase sequence and asymmetry

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Accessories



Labeling system

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Insulated jumper combs

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Insulated jumper combs

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Signal Isolation Transformers · Basics

General description of converters

Converters are needed in a wide variety of areas in industry in order to perform the following basic tasks:

1. Signal conversion
2. Signal amplification
3. Signal isolation
4. Signal filtering

A converter is normally constructed as shown in the following schematic:

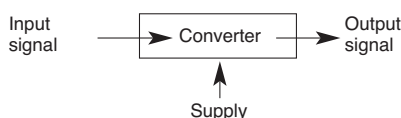


Figure : Schematic of a converter

Input signals may be:

- Voltages
- Currents
- Frequencies
- Other adapted physical quantities (e.g. pressure, temperature, humidity, PH values, etc.).

Output signals may be:

- Voltages
- Currents
- Frequencies
- Signals for field bus interfaces

A further distinction is made between analog and digital signals, which may be both input and output signals.

The input signals must be converted from the required output signals. In this context conversion means:

- Actual conversion of signals (e.g. from voltage into current)
- Amplification of signals (e.g. from low-level signals to standard signals)
- Electrical isolation and where appropriate amplification of signals (e.g. of analog-signals)
- Filtering of interference (e.g. of HF interference from analog signals)

The supply feeds power to the converter. It is required as additional auxiliary power to implement active isolation.

Transmitters

These kinds of converter transform input signals into other physical quantities.

The following lists some examples:

Input signal	Output signal
Voltage	Current/Frequency
Current	Voltage/Frequency
Frequency	Voltage/Current

Various input signals in analog or digital form, as are outputted by puls generators, thermocouples or resistance pick-ups for example, are converted in the transmitters into the desired standardised outputs.

Standard signals (unit signals)

Unit signals are standardised electrical signals in process automation.

Commonly used unit signals include current signals to DIN IEC 60381-1:

- 0 to 20 mA
- 4 mA to 20 mA (live zero)

and voltage signals to DIN IEC 60381-2:

- 0 to 10 V
- 2 V to 10 V (live zero)

Live-zero signals are used in almost all industrial applications. If the start of the measuring range is assigned an electrical signal other than 0 (zero), a wire break monitor can be implemented. The non-zero initial signal is also termed "live zero". A 0 mA signal is thus always a reliable indicator of a fault.

Current signals are preferred over voltage signals because the current signal is immune to electromagnetic interference (switch-on of adjacent consumers) and voltage losses due to the line resistance.

The maximum length of the signal line is limited only by the maximum load impedance which can be operated by the current source. The 4 mA... 20 mA unit of current signal offers the additional major advantage that the signal circuit is continuously powered. That power can be used by transmitters for their own supply. In this case the PLC must power the signal circuit (passive sensor). An active sensor needs an external power supply for its own demand.

General technical information

Input protection

Describes the protection measures taken and indicates the maximum possible input signal.

Suppressor diodes are mostly used to limit voltage and PTC resistors to limit current.

Input resistance

To ensure low load on the input signal, current inputs are always executed as low-resistance and voltage inputs as high-resistance:

I: <100 Ω; U:> 10kΩ

Voltage drop

This relates to passive converters. The voltage drop is dependent on the load impedance and on the device's own power demand. For the applicable values refer to the relevant data sheets.

True RMS measurement

The RMS (root mean square) value indicates the value of a direct current or voltage which converts the same electrical energy - so also on average over time the same electrical power - on an ohmic converter in a representative period of time. The RMS value depends on the peak value and on the curve form. Lütze current or voltage converters offer true RMS measurement as standard, so non-sinusoidal input quantities can also be correctly measured.

Zero/Span

On conventional devices a zero/span balance must be carried out. This is done by means of two separate potentiometers. Vibration, temperature and other influences alter the set values, so periodically a recalibration is required. Zero-balancing adjusts the zero setting of the output relative to the input. The output signal is amplified relative to the input signal by way of the span balance. This balancing must also be carried out when the range is changed, such as by DIP switches.

Lütze converters feature automatic, non-temperature-dependent balancing. Recalibration is not necessary, even in the event of a range change.

Load impedance

The load impedance indicates the load capacity of the converter.

Signal Isolation Transformers · Basics

400 Ω to 750 Ω. The values for voltage outputs are in the range from 1 kΩ to 10 kΩ.

Wire break and short-circuit

As already described under "Standard signals", a wire break can be detected by way of a live-zero signal. In monitoring of connected sensors (such as temperature), monitoring for wire break or short-circuit is effected by an internal electronics unit. Such faults can be indicated in different ways:

- LED
- Defined output signal
- Separate output

Linearity error

Linearity error refers to a deviation from the ideal transmission accuracy without zero/span errors. The figure is given as a percentage.

Accuracy (FSR)

The value indicates the deviation of the output signal relative to the input signal. The figure is always given as a percentage referred to the maximum signal output value, e.g. 10V (full scale range) at room temperature (23°C). The linearity error is built-in to this value.

Temperature coefficient

Describes the deviating accuracy dependent on the ambient temperature. The figure is normally given in ppm/K (parts per million/Kelvin).

Example:
30 ppm/K corresponds to 0.003 %/K

Transmission error

The total deviation of the output signal from the input signal is the sum of the accuracy + temperature coefficient.

Transfer frequency

DC signals are normally transmitted. Signal changes demand a dynamic response however. The transmission frequency indicates the frequency up to which alternating current or voltage can also be transmitted.

Rise time (10-90 %)

The response time of the output signal to a change in the input signal from 10% to 90% of the nominal value.

Settling time

The time taken by the output to reach a value with an inaccuracy of 1%. This value already takes account of the rise time.

Ambient-temperature range

The values specified by Lütze relate to a 100% duty cycle. Normally condensation is ruled out. For devices which allow condensation, the fact will be indicated on the "Relative humidity" line or it will be stipulated that the device in question conforms to EN 50155.

Basics of transmission interference

Interference on signal transmission

Error-free, undisturbed, secure signal transmission is vital to the reliable control of processes. Analog signals transmitted between the control side (PLC or instrumentation and control system) and the sensors/actuators are almost always subject to external interference. There is considerable potential for interference especially given the rough industrial environment and long transmission distances.

Electromagnetic interference

The best known and most widespread interference is that caused by capacitive and inductive effects. In these also cross-cable coupling processes overvoltages may occur which, for example, can destroy input/output modules of a PLC or an industrial computer. To protect those expensive downstream components, it is advisable to use A/A modules. They ensure a defined transition from peripherals and evaluation electronics.

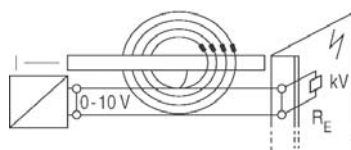
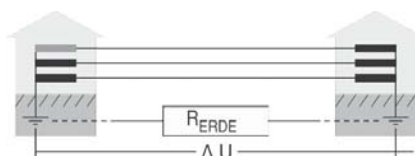


Figure: Electromagnetic interference

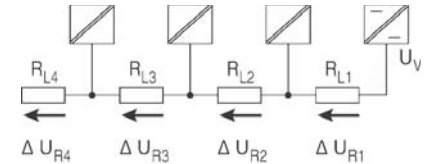
Potential differences

Potential differences occur as a result of earth or chassis loops. If signal transmitters and receivers refer to the earth potential - i.e. the earth is used as a return conductor in signal transmission - this is known as an earth loop. As the distance between the transmitter and receiver increases, the earth resistance increases as the line gets longer. As a result voltage differences of as much as 200 V can occur.



Potential differences due to earth loops

In sequenced measuring circuits potential differences occur due to earth loops. Interconnecting multiple measuring circuits increases the reference voltage with possibly fatal consequences for the data transfer.



Potential differences due to chassis loops

A/A modules are a simple means of bypassing this interference. They electrically isolate the signal input and output, decoupling the measuring circuits. As well as isolating the signal, this also filters out interference. The signals are amplified for longer transmission distances and adapted to the desired output quantities for the evaluation electronics. For optimum functional reliability, as well as the converters shielded cable with twisted-pair wires should additionally be used.

Isolation techniques

There are various way of isolating potential.

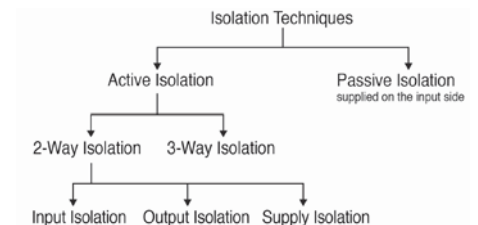


Diagram: Isolation techniques

Active isolation

An additional supply voltage is required for all kinds of active isolation.

3-way disconnection

A characteristic feature of 3-way isolation is complete insulation of all the components from each other, so protecting against mutual interference.

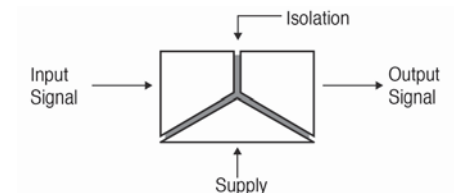


Diagram: 3-way isolation

Signal Isolation Transformers · Basics

The input, output and supply - and thus also all equipment connected to them - are mutually electrically isolated. In this way the input and output circuits are decoupled from the supply and the input and output circuits are decoupled from each other. The input signals must be active signals. The output signal is an amplified filtered signal.

2-way isolation: Input isolation

In this form of isolation the input is electrical isolated from the output and the supply, which are both connected to the same potential.

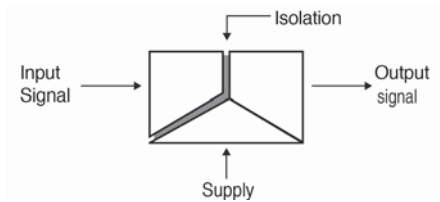


Figure: 2-way input isolation

By this isolation method equipment connected to the output can be effectively protected against interference. The input signals must be active signals. The output signal is an amplified filtered signal.

2-way isolation: Output isolation

In this form of isolation the output is electrically isolated from the input and the supply, which are both connected to the same potential.

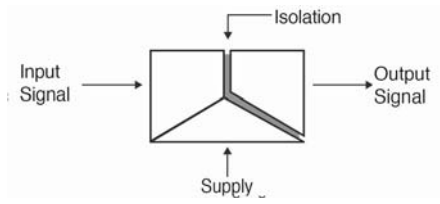


Figure: 2-way output isolation

By this isolation method, equipment connected to the input can be effectively protected against interference. The input signals must be active signals. The output signal is an amplified filtered signal.

2-way isolation: Supply isolation

In this form of isolation an additional supply is provided at the input. This auxiliary power is used to operate passive sensors connected on the input side. The structure of this isolation method is identical to that of input isolation. The supply and output are again connected to the same potential.

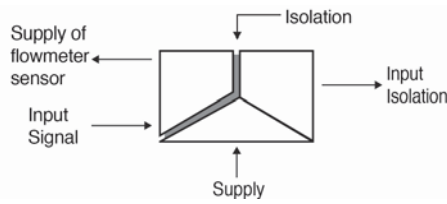


Figure: 2-way supply isolation

By this isolation method, equipment connected to the output can be effectively protected against interference and the auxiliary power described above is additionally provided. The output signal is an amplified filtered signal.

Passive isolation

In contrast to active isolation, no additional supply voltage is required for passive isolation. The power required for electrical isolation and signal transmission is drawn from the input circuit. A minor voltage drop at the input of the isolation module is used for this. The input measurement signal is burdened with this voltage drop. The responding current for the function of the modules is just a few Amperes. The resultant transmission error is negligible. By this isolation method no signal amplification is possible. Also, these isolation modules do not operate reaction-free. This means that every load on the output places an equal load on the input signal. Isolation modules without auxiliary power transmit unipolar current signals at a ratio of 1:1. The possible load impedance voltage at the output is lower than the load capacity of the input signal by the amount of voltage drop at the input in the event of an output short-circuit (own voltage demand).



Figure: Passive isolation, supply input

By this isolation method, earth loops can be isolated and signals filtered for example. The input signals must be active current signals. The output signal is likewise a current signal.

Open FDT Technology

FDT technology, what is it?

FDT standardizes the communication and configuration interface between all field devices and host systems. FDT provides a common environment for accessing the devices' most sophisticated features. Any device can be configured, operated, and maintained through the standardized user interface – regardless of supplier, type or communication protocol.

The FDT interface – Integration standard

The FDT interface is the specification describing the standardized data exchange between devices and control system or engineering or asset management tools.

DTM – Device driver

DTMs are classified into two categories:

- Device DTMs which connect to the field device configuration components
- CommDTMs which connect to the software communication components.

The DTM provides a unified structure for accessing device parameters, configuring and operating the devices, and diagnosing problems. DTMs can range from a simple Graphical User Interface for setting device parameters to a highly sophisticated application capable of performing complex real-time calculations for diagnosis and maintenance purposes.

DeviceDTM

Provided by the device manufacturer
Represents the whole logic and parameters of a device
Standardized interface to the FDT Frame Application
Can be used in any FDT Frame Application
DTM Style Guide

CommDTM

Represents communication components like PC communication cards, couplers, gateways, remote I/Os, and linking devices.

FDT Frame Application – Host system

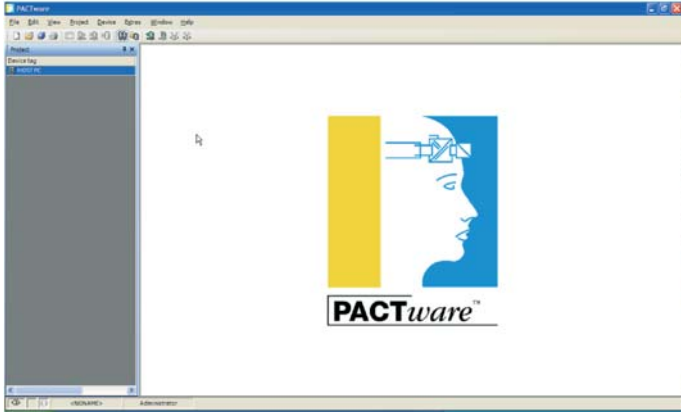
The Frame Application is a software program that implements Device DTMs and CommDTMs. The Frame Application provides:

- Common environment
- User Management
- DTM Management
- Data Management
- Network Configuration
- Navigation

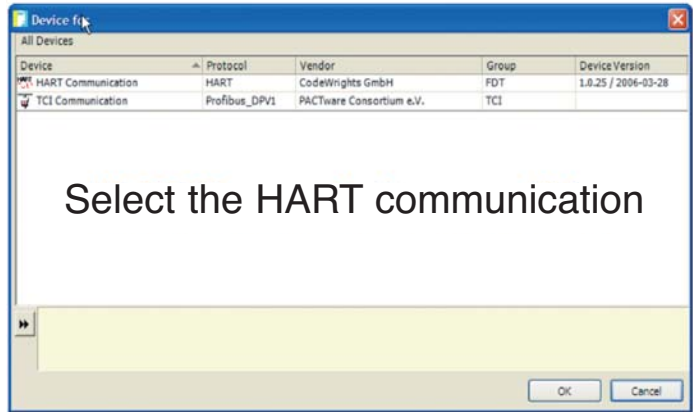


Open FDT Technology

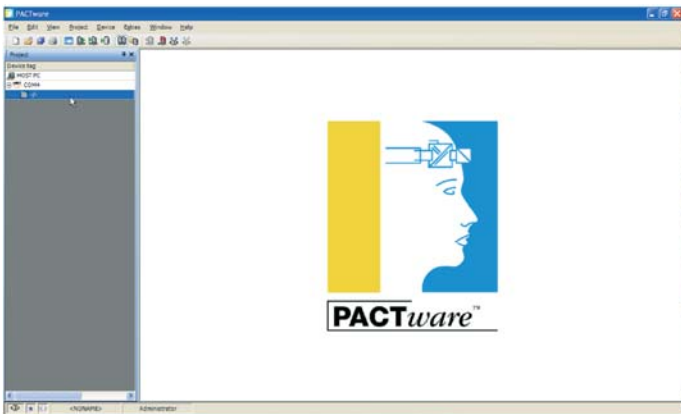
How to implement Lütze DTM's into **PACTware™**



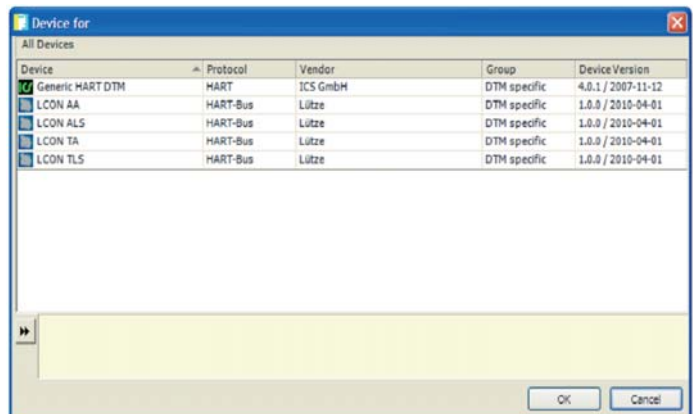
1. Add device



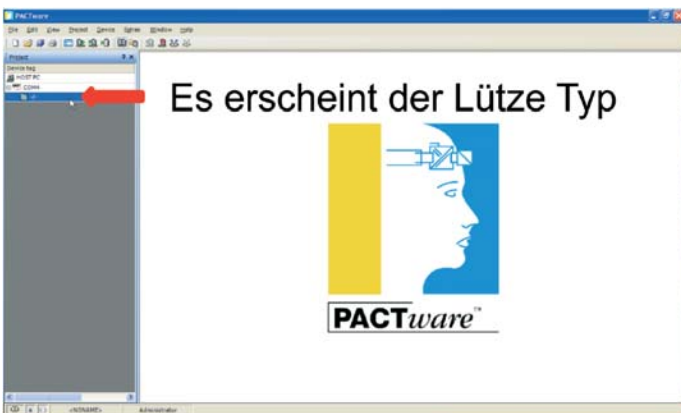
2. Select the communication channel



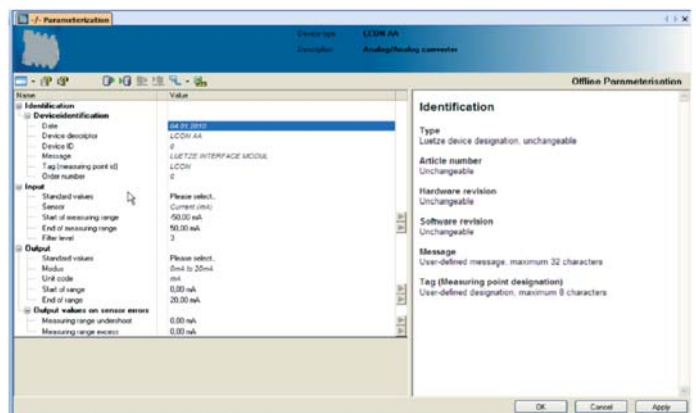
3. Again, add device



4. Select needed Lütze DTM



5. Device is displayed



6. Double clic on the device open the list of parameter

Interface Technology · LCIS analog/analog converter, passive

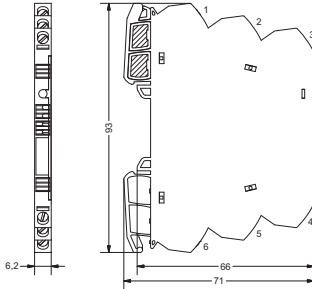
Input: 4–20 mA

Output: 4–20 mA

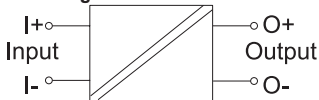
Insulation: 1.5 kV, 2-way isolation, passive converter



Dimensions



PIN assignment



Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	passive	750528.0000 S*	LCIS-P1K-0528-62-S	1
Push-In				
Rated voltage	passive	751528.0000 S*	LCIS-P1K-1528-62-PI	1
Input				
	750528.0000	751528.0000		
Input signal		4–20 mA		
Galvanic isolation I/O		2-way isolation		
Output				
Output signal		4–20 mA		
Max. load impedance at I-output		1000 Ω (R _B)		
Output current		–		
Residual ripple		<5 mV _{eff} (load impedance 100 Ω)		
Operating data				
Accuracy		0.1 % FSR @ 23 °C		
Linearity error		–		
Build-up time (Accuracy 1%)		6 ms (for working resistance 500 Ω and 20 mA)		
General				
Rated voltage		passive		
Status indication		LED green		
Input/output protection		Suppressor diode (33 V)		
Burden error		<0.06 % from measured value / 100 Ω working resistance		
Temperature drift /K		<150 ppm / K FSR		
Temperature drift (working resistance >600R)		<100 ppm / K FSR		
Temperature drift (working resistance >600R)		<150 ppm / K FSR		
Insulation voltage input / output		1.5 kV _{eff}		
Housing material		PA 6.6 (UL 94 V-0, NFF I2, F2)		
Color of the housing		RAL 7012 basalt grey		
Mounting		DIN rail mountable TS35 (EN 60715)		
Protection class		IP20		
Installation position		any		
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
Operation temperature range		–25 °C ... +60 °C		
Storage temperature range		–40 °C ... +80 °C		
Dimensions (w × h × d)		6.2 × 93.0 × 71.0 mm		
Weight		0.040 kg/piece		
Approvals		cULus (E135145), DNV GL		
Standards		EN 60947-5-1		

Comments

With connection: This passive isolator has a non-reactive transmission, so that the current in the input circuit is not interrupted for an output interruption.

Interface Technology · LCIS analog/analog converter

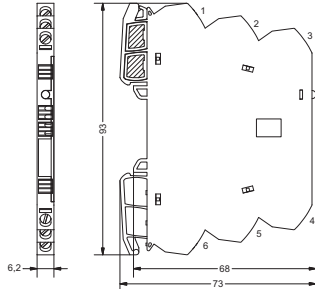
Input: 0–10 V / 0–20 mA / 4–20 mA

Output: 0–10 kHz

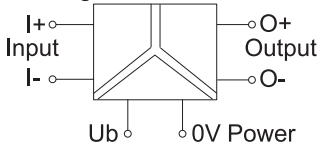
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

S1	Input
● → Switch On	1 2 3 4
0–10 V*	●
0–20 mA	● ●
4–20 mA	● ● ●

S1	Output
● → Switch On	5 6
0–50 Hz*	
0–100 Hz	●
0–1000 Hz	● ●
0–10000 Hz	● ● ●

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24 V	750511.0000 R*	LCIS-WAF-0511-62-S	1
Push-In				
Rated voltage	AC/DC 24 V	751511.0000 S*	LCIS-WAF-1511-62-PI	1
Input				
Input signal	0–10 V, 0–20 mA, 4–20 mA, adjustable via DIP switch S1	750511.0000	751511.0000	
Input resistance	>300 kΩ @ 0–10 V, <100 Ω @ 0–20 mA, 4–20 mA			
Galvanic isolation I/O	3-way isolation			
Zero /Span	Production comparison			
Output				
Output signal	0–50 Hz, 0–100 Hz, 0–1 kHz, 0–10 kHz adjustable via DIP switch S1			
Residual ripple	–			
Operating data				
Accuracy	0.1 % FSR @ 23 °C			
Linearity error	0.05 % FSR			
Build-up time (Accuracy 1%)	–			
Critical frequency	30 Hz @ 3 dB			
Temperature coefficient	<150 ppm / K FSR			
General				
Rated voltage	AC/DC 24 V			
Operation voltage range	AC 19.2–30 V / DC 19.2–30 V			
Status indication	LED green			
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output			
Rise time (10 - 90%)	frequency-dependent			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
Operation temperature range	–25 °C ... +60 °C			
Storage temperature range	–40 °C ... +85 °C			
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm			
Weight	0.029 kg/piece			
Approvals	cULus (E135145), DNV GL			
Standards	EN 60947-5-1			

Interface Technology · LCIS analog/analog converter

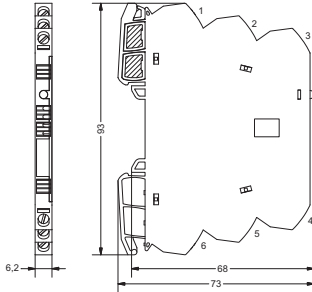
Input: 0–10 V / 0–20 mA / 4–20 mA

Output: 0–10 V / 0–20 mA / 4–20 mA

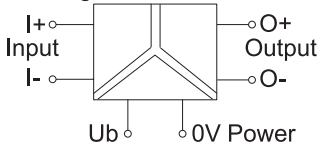
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

Description	Part-No.	Type	PU
Screw terminal			
Rated voltage	AC/DC 24 V	750539.0000 S*	LCIS-WAA-0539-62-S 1
Push-In			
Rated voltage	AC/DC 24 V	751539.0000 S*	LCIS-WAA-1539-62-PI 1
Input			
	750539.0000	751539.0000	
Input signal	0–10 V, 0–20 mA, 4–20 mA, adjustable via DIP switch S1		
Input resistance	>300 kΩ @ 0–10 V, <100 Ω @ 0–20 mA, 4–20 mA		
Galvanic isolation I/O	3-way isolation		
Zero /Span	Production comparison		
Output			
Output signal	adjustable via DIP switch S1		
Max. load impedance at I-output	500 Ω @ 0–20 mA, 4–20 mA		
Min. load impedance at U-output	2 kΩ @ 0–10 V		
Output current	max. 5 mA @ 0–10 V		
Output voltage	< 16 V @ 0–20 mA, 4–20 mA		
Residual ripple	<20 mV _{eff}		
Operating data			
Accuracy	0.1 % FSR @ 23 °C		
Linearity error	0.05 % FSR		
Build-up time (Accuracy 1%)	17 ms		
Critical frequency	30 Hz @ 3 dB		
Temperature coefficient	<150 ppm / K FSR		
General			
Rated voltage	AC/DC 24 V		
Operation voltage range	AC 19.2–30 V / DC 19.2–30 V		
Status indication	LED green		
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output		
Rise time (10 - 90%)	6 ms		
Insulation voltage input / output	2.5 kV _{eff}		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)		
Color of the housing	RAL 7012 basalt grey		
Mounting	DIN rail mountable TS35 (EN 60715)		
Protection class	IP20		
Installation position	any		
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
Operation temperature range	–25 °C ... +60 °C		
Storage temperature range	–40 °C ... +80 °C		
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm		
Weight	0.030 kg/piece		
Approvals	cULus (E135145), DNV GL		
Standards	EN 60947-5-1		

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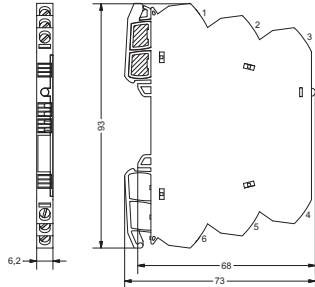
Input: 0–10 V

Output: 0–10 V / 0–20 mA / 4–20 mA

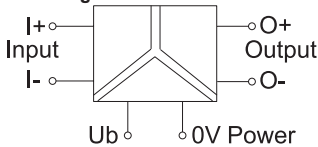
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Description	Part-No.	Type	PU	
Screw terminal				
Output signal	0 – 10 V	750530.0000 R*	LCIS-WAA-0530-62-S	1
	0–20 mA	750531.0000 R*	LCIS-WAA-0531-62-S	1
	4–20 mA	750532.0000 R*	LCIS-WAA-0532-62-S	1
Push-In				
Output signal	0 – 10 V	751530.0000 S*	LCIS-WAA-1530-62-PI	1
	0–20 mA	751531.0000 S*	LCIS-WAA-1531-62-PI	1
	4–20 mA	751532.0000 S*	LCIS-WAA-1532-62-PI	1
Input				
Input signal	0–10 V			
Galvanic isolation I/O	3-way isolation			
Zero /Span	Production comparison			
Output				
Output signal	0 – 10 V	0–20 mA	4–20 mA	
Residual ripple	<20 mV _{eff}			
Max. load impedance at I-output	–	500 Ω		
Operating data				
Accuracy	0.1 % FSR @ 23 °C			
Linearity error	0.05 % FSR			
Build-up time (Accuracy 1%)	17 ms			
Critical frequency	30 Hz @ 3 dB			
Temperature coefficient	<150 ppm / K FSR			
General				
Rated voltage	AC/DC 24 V			
Operation voltage range	AC 19.2–30 V / DC 19.2–30 V			
Status indication	LED green			
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output			
Rise time (10 - 90%)	6 ms			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
Operation temperature range	–25 °C ... +60 °C			
Storage temperature range	–40 °C ... +80 °C			
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm			
Weight	0.029 kg/piece			
Approvals	cULus (E135145), DNV GL			
Standards	EN 60947-5-1			

* S Article from stock
 A Available with a lead time
 R Available on request

Interface Technology · LCIS analog/analog converter

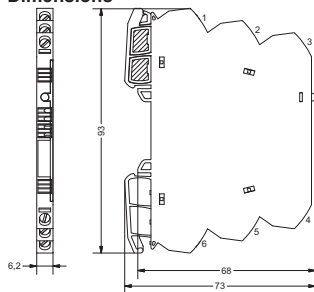
Input: 0–20 mA

Output: 0–10 V / 0–20 mA / 4–20 mA

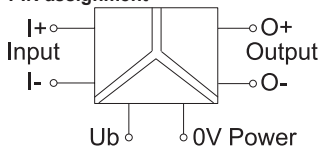
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Description	Part-No.	Type	PU	
Screw terminal				
Output signal	0 – 10 V	750533.0000 R*	LCIS-WAA-0533-62-S	1
	0–20 mA	750534.0000 R*	LCIS-WAA-0534-62-S	1
	4–20 mA	750535.0000 R*	LCIS-WAA-0535-62-S	1
Push-In				
Output signal	0 – 10 V	751533.0000 S*	LCIS-WAA-1533-62-PI	1
	0–20 mA	751534.0000 S*	LCIS-WAA-1534-62-PI	1
	4–20 mA	751535.0000 S*	LCIS-WAA-1535-62-PI	1
Input				
Input signal	0–20 mA			
Galvanic isolation I/O	3-way isolation			
Zero /Span	Production comparison			
Output				
Output signal	0 – 10 V	0–20 mA	4–20 mA	
Residual ripple	<20 mV _{eff}			
Max. load impedance at I-output	–	500 Ω		
Operating data				
Accuracy	0.1 % FSR @ 23 °C			
Linearity error	0.05 % FSR			
Build-up time (Accuracy 1%)	17 ms			
Critical frequency	30 Hz @ 3 dB			
Temperature coefficient	<150 ppm / K FSR			
General				
Rated voltage	AC/DC 24 V			
Operation voltage range	AC 19.2–30 V / DC 19.2–30 V			
Status indication	LED green			
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output			
Rise time (10 - 90%)	6 ms			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
Operation temperature range	–25 °C ... +60 °C			
Storage temperature range	–40 °C ... +80 °C			
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm			
Weight	0.029 kg/piece			
Approvals	cULus (E135145), DNV GL			
Standards	EN 60947-5-1			

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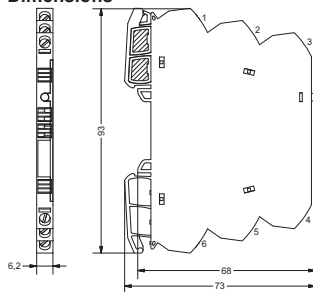
Input: 4–20 mA

Output: 0–10 V / 0–20 mA / 4–20 mA

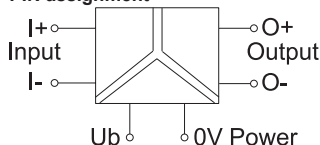
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Description	Part-No.	Type	PU	
Screw terminal				
Output signal	0 – 10 V	750536.0000 R*	LCIS-WAA-0536-62-S	1
	0–20 mA	750537.0000 R*	LCIS-WAA-0537-62-S	1
	4–20 mA	750538.0000 R*	LCIS-WAA-0538-62-S	1
Push-In				
Output signal	0 – 10 V	751536.0000 S*	LCIS-WAA-1536-62-PI	1
	0–20 mA	751537.0000 S*	LCIS-WAA-1537-62-PI	1
	4–20 mA	751538.0000 S*	LCIS-WAA-1538-62-PI	1
Input				
Input signal	4–20 mA			
Galvanic isolation I/O	3-way isolation			
Zero /Span	Production comparison			
Output				
Output signal	0 – 10 V	0–20 mA	4–20 mA	
Residual ripple	<20 mV _{eff}			
Max. load impedance at I-output	–	500 Ω		
Operating data				
Accuracy	0.1 % FSR @ 23 °C			
Linearity error	0.05 % FSR			
Build-up time (Accuracy 1%)	17 ms			
Critical frequency	30 Hz @ 3 dB			
Temperature coefficient	<150 ppm / K FSR			
General				
Rated voltage	AC/DC 24 V			
Operation voltage range	AC 19.2–30 V / DC 19.2–30 V			
Status indication	LED green			
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output			
Rise time (10 - 90%)	6 ms			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
Operation temperature range	–25 °C ... +60 °C			
Storage temperature range	–40 °C ... +80 °C			
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm			
Weight	0.029 kg/piece			
Approvals	cULus (E135145), DNV GL			
Standards	EN 60947-5-1			

* S Article from stock
 A Available with a lead time
 R Available on request

Interface Technology · LCIS analog/analog converter

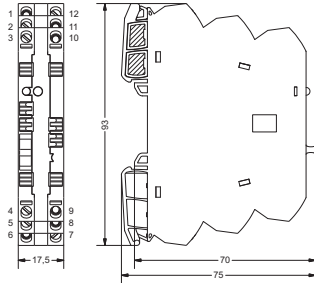
Input: 0–10 V / 0–20 mA / 4–20 mA, manual off automatic

Output: 0–10 V / 0–20 mA / 4–20 mA

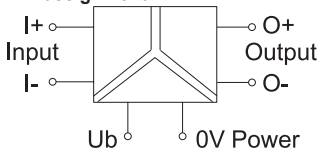
Insulation: 2,5 kV / 4 kV, 3-way isolation, Wide range input



Dimensions



PIN assignment



Range adjustment

S1	Switch On	Input	1	2	3	4
0–10V*	●	●				
0–20mA		●				
4–20mA		●	●			

S1	Switch On	Output	5	6
0–10V*	●	●		
0–20mA		●		
4–20mA		●	●	

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24 V	750518.0000 R*	LCIS-WAA-MA-0518-175-S	1
	AC/DC 24–240 V	750519.0000 R*	LCIS-WP-WAA-MA-0519-S	1
Push-In				
Rated voltage	AC/DC 24 V	751518.0000 S*	LCIS-WAA-MA-1518-175-PI	1
	AC/DC 24–240 V	751519.0000 S*	LCIS-WP-WAA-MA-1519-PI	1
Input				
Input signal	0–10 V, 0–20 mA, 4–20 mA, adjustable via DIP switch S1			
Input resistance	>300 kΩ @ 0–10 V, <100 Ω @ 0–20 mA, 4–20 mA			
Galvanic isolation I/O	3-way isolation			
Zero /Span	Production comparison			
Output				
Output signal	0–10 V, 0–20 mA, 4–20 mA adjustable via switch			
Max. load impedance at I-output	500 Ω @ 0–20 mA, 4–20 mA			
Min. load impedance at U-output	2 kΩ @ 0–10 V			
Output current	max. 5 mA @ 0–10 V			
Output voltage	< 18 V @ 0–20 mA, 4–20 mA			
Residual ripple	<20 mV _{eff}			
Operating data				
Accuracy	0.1 % FSR @ 23 °C			
Linearity error	0.05 % FSR			
Build-up time (Accuracy 1%)	17 ms			
Critical frequency	30 Hz @ 3 dB			
Temperature coefficient	<150 ppm / K FSR			
General				
Operation voltage range	AC/DC 24 V	AC 19.2–30 V / DC 19.2–30 V		
Status indication	LED green			
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output			
Rise time (10 - 90%)	6 ms			
Insulation voltage input / output	2.5 kV _{eff}	4.0 kV _{eff}		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
Operation temperature range	-25 °C ... +60 °C			
Storage temperature range	-40 °C ... +80 °C			
Dimensions (w × h × d)	17.5 × 93.0 × 75.0 mm			
Weight	0.059 kg/piece			
Approvals	cULus (E135145), DNV GL			
Standards	EN 60947-5-1			

Interface Technology · LCIS analog/analog converter

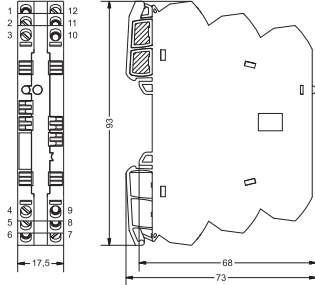
Input: 0–10 V / 0–20 mA / 4–20 mA

Output: 0–10 V / 0–20 mA / 4–20 mA

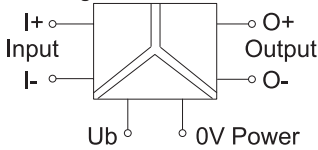
Insulation: 4 kV, 3-way isolation, Wide range input



Dimensions



PIN assignment



Range adjustment

S1	● → Switch On	Input			
		1	2	3	4
0–10V*	●				
0–20mA		●			
4–20mA		●	●		

S1	● → Switch On	Output	
		5	6
0–10V*	●		
0–20mA		●	
4–20mA		●	●

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24–240 V	750510.0000 R*	LCIS-WP-WAA-0510-175-S	1
Push-In				
Rated voltage	AC/DC 24–240 V	751510.0000 S*	LCIS-WP-WAA-1510-175-PI	1
Input				
Input signal	750510.0000 0–10 V, 0–20 mA, 4–20 mA, adjustable via DIP switch S1			
Input resistance	751510.0000 >300 kΩ @ 0–10 V, <100 Ω @ 0–20 mA, 4–20 mA			
Galvanic isolation I/O	3-way isolation			
Zero /Span	Production comparison			
Output				
Output signal	0–10 V, 0–20 mA, 4–20 mA adjustable via switch			
Max. load impedance at I-output	500 Ω @ 0–20 mA, 4–20 mA			
Min. load impedance at U-output	2 kΩ @ 0–10 V			
Output current	max. 5 mA @ 0–10 V			
Output voltage	< 18 V @ 0–20 mA, 4–20 mA			
Residual ripple	<20 mV _{eff}			
Operating data				
Accuracy	0.1 % FSR @ 23 °C			
Linearity error	0.05 % FSR			
Build-up time (Accuracy 1%)	17 ms			
Critical frequency	30 Hz @ 3 dB			
Temperature coefficient	<150 ppm / K FSR			
General				
Rated voltage	AC/DC 24–240 V			
Operation voltage range	AC 19.2–264 V / DC 19.2–264 V			
Status indication	LED green			
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output			
Rise time (10 - 90%)	6 ms			
Insulation voltage input / output	4.0 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
Operation temperature range	–25 °C ... +60 °C			
Storage temperature range	–40 °C ... +80 °C			
Dimensions (w × h × d)	17.5 × 93.0 × 73.0 mm			
Weight	0.059 kg/piece			
Approvals	cULus (E135145), DNV GL			
Standards	EN 60947-5-1			

* S Article from stock
A Available with a lead time
R Available on request

Interface Technology · LCIS analog/analog converter

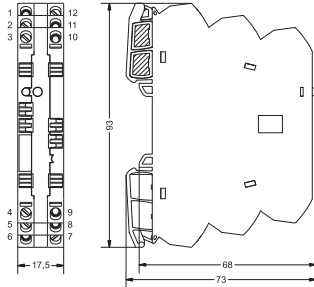
Input: 0–10 V / 0–20 mA / 4–20 mA

Output: 0–10 kHz

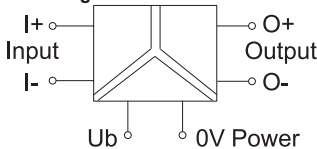
Insulation: 4 kV, 3-way isolation, Wide range input



Dimensions



PIN assignment



Range adjustment

S1	●→Switch On	Input			
		1	2	3	4
0–10 V*	●				
0–20 mA		●			
4–20 mA		●	●		

S1	●→Switch On	Output	
		5	6
0–50 Hz*			
0–100 Hz		●	
0–1000 Hz		●	●
0–10000 Hz		●	●

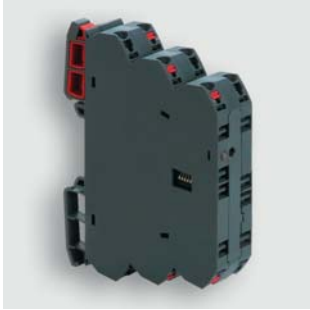
Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24–240 V	750512.0000 R*	LCIS-WP-WAF-0512-175-S	1
Push-In				
Rated voltage	AC/DC 24–240 V	751512.0000 R*	LCIS-WP-WAF-1512-175-PI	1
Input	750512.0000	751512.0000		
Input signal	0–10 V, 0–20 mA, 4–20 mA, adjustable via DIP switch S1			
Input resistance	>300 kΩ @ 0–10 V, <100 Ω @ 0–20 mA, 4–20 mA			
Galvanic isolation I/O	3-way isolation			
Zero /Span	Production comparison			
Output				
Output signal	0–50 Hz, 0–100 Hz, 0–1 kHz, 0–10 kHz adjustable via DIP switch S1			
Residual ripple	–			
Operating data				
Accuracy	0.1 % FSR @ 23 °C			
Linearity error	0.05 % FSR			
Build-up time (Accuracy 1%)	frequency-dependent			
Critical frequency	30 Hz @ 3 dB			
Temperature coefficient	<150 ppm / K FSR			
Transmission frequency	frequency-dependent			
General				
Rated voltage	AC/DC 24–240 V			
Operation voltage range	AC 19.2–264 V / DC 19.2–264 V			
Status indication	LED green			
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output			
Rise time (10 - 90%)	frequency-dependent			
Insulation voltage input / output	4.0 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	
Operation temperature range	–25 °C ... +60 °C			
Storage temperature range	–40 °C ... +80 °C			
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm			
Weight	0.058 kg/piece			
Approvals	cULus (E135145), DNV GL			
Standards	EN 60947-5-1			

Interface Technology · LCIS analog/analog converter

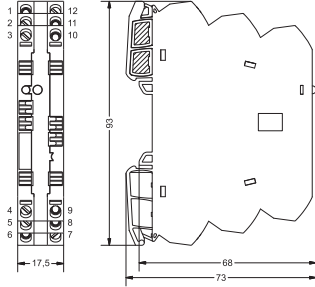
Input: 16 selectable ranges

Output: 0–10 V / 0–20 mA / 4–20 mA

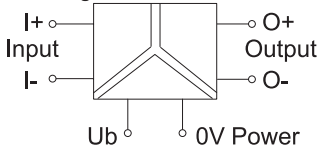
Insulation: 2.5 kV / 4 kV, 3-way isolation, Wide range input



Dimensions



PIN assignment



Range adjustment

S1	● → Switch On	Input			
		1	2	3	4
0–60 mV					
0–100 mV	●				
0–300 mV		●			
0–500 mV		●	●		
0–1 V				●	
0–2 V				●	●
0–5 V				●	●
0–10 V*		●	●	●	
2–10 V				●	●
0–20 V		●	●	●	●
0–5 mA		●	●	●	●
0–10 mA		●	●	●	●
±5 mA				●	●
±20 mA		●	●	●	●
0–20 mA		●	●	●	●
4–20 mA		●	●	●	●

S1	● → Switch On	Output	
		5	6
0–10 V*		●	
0–20 mA		●	●
4–20 mA		●	●

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24 V	750516.0000 R*	LCIS-WUAA-0516-175-S	1
	AC/DC 24–240 V	750517.0000 R*	LCIS-WP-WUAA-0517-175-S	1
Push-In				
Rated voltage	AC/DC 24 V	751516.0000 S*	LCIS-WUAA-1516-175-PI	1
	AC/DC 24–240 V	751517.0000 S*	LCIS-WP-WUAA-1517-175-PI	1
Input				
	AC/DC 24 V	AC/DC 24–240 V		
Input signal	0–60, 0–100, 0–300, 0–500 mV adjustable via DIP switch S1 0–1, 0–2, 0–5, 0–10, 0–20, 2–10 V adjustable via DIP switch S1 0–5, 0–10, 0–20, 4–20, ±5, ±20 mA adjustable via DIP switch S1			
Input resistance	>300 kΩ @ mV, V, <100 Ω @ mA			
Galvanic isolation I/O	3-way isolation			
Zero /Span	Production comparison			
Output				
Output signal	0–10 V, 0–20 mA, 4–20 mA, adjustable via switch			
Max. load impedance at I-output	500 Ω @ 0–20 mA, 4–20 mA			
Min. load impedance at U-output	2 kΩ @ 0–10 V			
Output current	max. 5 mA @ 0–10 V			
Output voltage	< 18 V @ 0–20 mA, 4–20 mA			
Residual ripple	<20 mV _{eff}			
Operating data				
Accuracy	0.1 % FSR @ 23 °C			
Linearity error	0.05 % FSR			
Build-up time (Accuracy 1%)	17 ms			
Critical frequency	30 Hz @ 3 dB			
Temperature coefficient	<150 ppm / K FSR			
General				
	AC/DC 24 V	AC/DC 24–240 V		
Operation voltage range	AC 19.2–30 V / DC 19.2–30 V	AC 19.2–264 V / DC 19.2–264 V		
Status indication	LED green			
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output			
Rise time (10 - 90%)	6 ms			
Insulation voltage input / output	2.5 kV _{eff}	4.0 kV _{eff}		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
		Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
Operation temperature range	–25 °C ... +60 °C			
Storage temperature range	–40 °C ... +80 °C			
Dimensions (w × h × d)	17.5 × 93.0 × 73.0 mm			
Weight	0.059 kg/piece			
Approvals	cULus (E135145), DNV GL			
Standards	EN 60947-5-1			

Interface Technology · LCIS potentiometer/analog converter

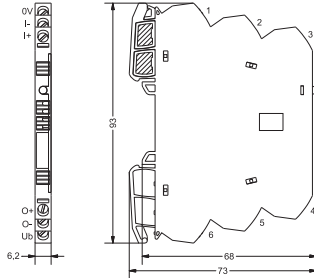
Input: 0–1 kΩ / 0–6 kΩ

Output: 0–10 V / 0–20 mA / 4–20 mA

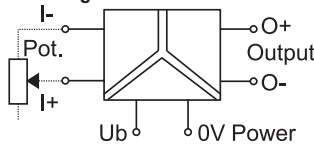
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

S1	Switch On	Output
●	→	5/6
0–10V		●
0–20mA		●
4–20mA		●

S1 Input

S1	Switch On	Input
●	→	1 2 3 4
0–6 kΩ		●
0–1 kΩ		●

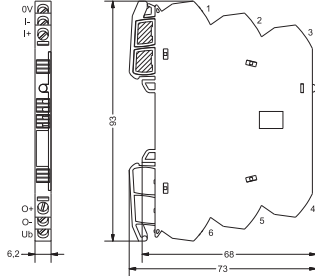
Description	Part-No.	Type	PU
Screw terminal			
Rated voltage	AC/DC 24 V	750557.0000 R*	LCIS-WRA-0557-62-S 1
Push-In			
Rated voltage	AC/DC 24 V	751557.0000 S*	LCIS-WRA-1557-62-PI 1
Input			
	750557.0000	751557.0000	
Input variable	Poti 0–1 kΩ, Poti 0–6 kΩ		
Galvanic isolation I/O	3-way isolation		
Measuring procedure	2-wire, constant current		
Zero /Span	Production comparison		
Input resistance	>1 MΩ		
Parameterisation	DIP switch S1		
Sensor current	0,45 mA @ 0–1 kΩ / 0,15 mA @ 0–6 kΩ		
Protection device	Overvoltage protection		
Output			
Output signal	0–10 V, 0–20 mA, 4–20 mA		
Max. load impedance at I-output	500 Ω		
Min. load impedance at U-output	2 kΩ		
Load deviation	at U-output max. 5 mV @ 2 kΩ		
Output voltage	< 16 V @ 0–20 mA, 4–20 mA		
Output current	max. 5 mA @ 10 V		
Residual ripple	<20 mV _{eff}		
Parameterisation	DIP switch S1		
Protection device	short circuit protection		
Operating data			
Accuracy	0.3 % FSR @ 23 °C		
Linearity error	0.1 % FSR		
Build-up time (Accuracy 1%)	ca. 60 ms @ 23 °C		
Critical frequency	10 Hz @ 3 dB / 23 °C		
Temperature coefficient	150 ppm / K FSR		
General			
Operation voltage range	AC 19.2–26.4 V / DC 18.0–31.2 V		
Rated voltage	AC/DC 24 V		
Rated current	ca. 22 mA @ AC 24 V / ca. 13 mA @ DC 24 V		
Status indication	LED green		
Insulation voltage input / output	2.5 kV _{eff}		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)		
Color of the housing	RAL 7012 basalt grey		
Mounting	DIN rail mountable TS35 (EN 60715)		
Protection class	IP20		
Installation position	any		
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
		Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	16
Operation temperature range	–25 °C ... +60 °C		
Storage temperature range	–40 °C ... +85 °C		
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm		
Weight	0.030 kg/piece		
Approvals	cULus in preparation, DNV GL in preparation		
Standards	EN 60947-5-1		

Interface Technology · LCIS analog/analog converter

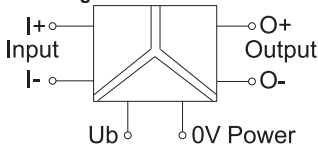
Output: 0–60 mV
 Output: 0–10 V / 0–20 mA / 4–20 mA
 Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

S1	Switch On	Output
● →	5 6	
0–10V	●	●
0–20mA	●	●
4–20mA	●	●

S1	Switch On	Input
● →	1 2 3 4	
0–60 mV		

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24 V	750901.0000 R*	LCIS-WAA-0901-62-S	1
Push-In				
Rated voltage	AC/DC 24 V	751901.0000 S*	LCIS-WAA-1901-62-PI	1
Input				
	750901.0000	751901.0000		
Input variable		Voltage 0–60 mV		
Galvanic isolation I/O		3-way isolation		
Measuring procedure		Voltage measurement		
Zero /Span		Production comparison		
Input resistance		>1 MΩ		
Parameterisation		DIP switch S1		
Sensor current		–		
Protection device		Overvoltage protection		
Output				
Output signal		0–10 V, 0–20 mA, 4–20 mA		
Max. load impedance at I-output		500 Ω		
Min. load impedance at U-output		2 kΩ		
Load deviation		at U-output max. 5 mV @ 2 kΩ		
Output voltage		< 16 V @ 0–20 mA, 4–20 mA		
Output current		max. 5 mA @ 10 V		
Residual ripple		<20 mV _{eff}		
Parameterisation		DIP switch S1		
Protection device		short circuit protection		
Operating data				
Accuracy		0.1 % FSR @ 23 °C		
Linearity error		0.1 % FSR		
Build-up time (Accuracy 1%)		ca. 60 ms @ 23 °C		
Critical frequency		10 Hz @ 3 dB / 23 °C		
Temperature coefficient		150 ppm / K FSR		
General				
Operation voltage range		AC 19.2–26.4 V / DC 18.0–31.2 V		
Rated voltage		AC/DC 24 V		
Rated current		ca. 22 mA @ AC 24 V / ca. 13 mA @ DC 24 V		
Status indication		LED green		
Insulation voltage input / output		2.5 kV _{eff}		
Housing material		PA 6.6 (UL 94 V-0, NFF I2, F2)		
Color of the housing		RAL 7012 basalt grey		
Mounting		DIN rail mountable TS35 (EN 60715)		
Protection class		IP20		
Installation position		any		
Connection device		Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16	
Operation temperature range		–25 °C ... +60 °C		
Storage temperature range		–40 °C ... +85 °C		
Dimensions (w × h × d)		6.2 × 93.0 × 73.0 mm		
Weight		0.030 kg/piece		
Approvals		cULus in preparation, DNV GL in preparation		
Standards		EN 60947-5-1		

Interface Technology · LCIS temperature/analog converter

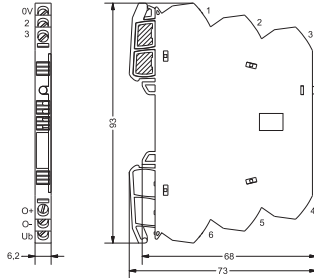
Input: PT100, 2-wire

Output: 0–10 V / 0–20 mA / 4–20 mA

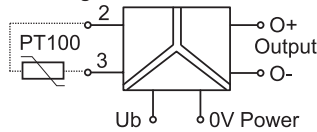
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

S1	Output
● → Switch On	5 6
0–10V	●
0–20mA	●
4–20mA	●●

S1 Input

S1	Input
● → Switch On	1 2 3 4
-50 – 50°C	
-50 – 100°C	●
-50 – 150°C	●●
0 – 100°C	●●●
0 – 150°C	●●●●
0 – 200°C	●●●●
0 – 300°C	●●●●
0 – 400°C	●●●●

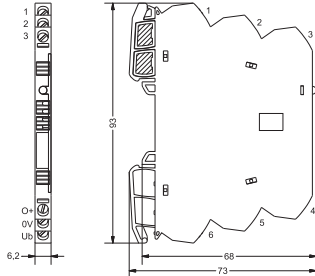
Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24 V	750809.0000 R*	LCIS-WPT2LA-0809-62-S	1
Push-In				
Rated voltage	AC/DC 24 V	751809.0000 S*	LCIS-WPT2LA-1809-62-PI	1
Input	750809.0000	751809.0000		
Input variable	Temperature sensor PT100			
Galvanic isolation I/O	3-way isolation			
Measuring procedure	2-wire, constant current			
Zero /Span	Production comparison			
Input resistance	>1 MΩ			
Parameterisation	DIP switch S1			
Temperature range	-50 °C–50 °C / -50 °C–100 °C / -50 °C–150 °C / 0 °C–100 °C / 0 °C–150 °C / 0 °C–200 °C / 0 °C–300 °C / 0 °C–400 °C			
Sensor current	0.5 mA			
Protection device	Overvoltage protection			
Output				
Output signal	0–10 V, 0–20 mA, 4–20 mA			
Max. load impedance at I-output	500 Ω			
Min. load impedance at U-output	2 kΩ			
Load deviation	at U-output max. 5 mV @ 2 kΩ			
Output voltage	< 16 V @ 0–20 mA, 4–20 mA			
Output current	max. 5 mA @ 10 V			
Residual ripple	<20 mV _{eff}			
Parameterisation	DIP switch S1			
Protection device	short circuit protection			
Operating data				
Accuracy	0.3 % FSR @ 23 °C			
Linearity error	0.1 % FSR			
Build-up time (Accuracy 1%)	ca. 60 ms @ 23 °C			
Critical frequency	10 Hz @ 3 dB / 23 °C			
Temperature coefficient	150 ppm / K FSR			
Error coefficient of measuring line	2.7 K/Ω			
General				
Operation voltage range	AC 19.2–26.4 V / DC 18.0–31.2 V			
Rated voltage	AC/DC 24 V			
Rated current	ca. 22 mA @ AC 24 V / ca. 13 mA @ DC 24 V			
Status indication	LED green			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
Operation temperature range	-25 °C ... +60 °C			
Storage temperature range	-40 °C ... +85 °C			
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm			
Weight	0.030 kg/piece			
Approvals	cULus in preparation, DNV GL in preparation			
Standards	EN 60947-5-1			

Interface Technology · LCIS temperature/analog converter

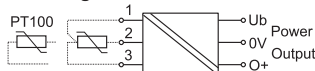
Input: PT100, 2-wire/3-wire
Output: 0–10 V / 0–20 mA / 4–20 mA
Insulation: 2.5 kV, 2-way isolation



Dimensions



PIN assignment



Range adjustment

S1	Output
● → Switch On	5 6
0–10V	●
0–20mA	●
4–20mA	●

S1	Input
● → Switch On	1 2 3 4
PT100, 3-wire	
PT100, 2-wire	●
-50 – 50°C	
-50 – 100°C	●
-50 – 150°C	●
0 – 100°C	● ●
0 – 150°C	● ●
0 – 200°C	● ●
0 – 300°C	● ●
0 – 400°C	● ●

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24 V	750819.0000 R*	LCIS-WPT3LA-0819-62-S	1
Push-In				
Rated voltage	AC/DC 24 V	751819.0000 S*	LCIS-WPT3LA-1819-62-PI	1
Input	750819.0000	751819.0000		
Input variable	Temperature sensor PT100			
Galvanic isolation I/O	2-way isolation			
Measuring procedure	2-wire of 3-wire, constant current			
Zero /Span	Production comparison			
Input resistance	>1 MΩ @ 2-wire, >500 kΩ @ 3-wire			
Parameterisation	DIP switch S1			
Temperature range	-50 °C–50 °C / -50 °C–100 °C / -50 °C–150 °C / 0 °C–100 °C / 0 °C–150 °C / 0 °C–200 °C / 0 °C–300 °C / 0 °C–400 °C			
Sensor current	0.5 mA			
Protection device	Overvoltage protection			
Output				
Output signal	0–10 V, 0–20 mA, 4–20 mA			
Max. load impedance at I-output	500 Ω			
Min. load impedance at U-output	2 kΩ			
Load deviation	at U-output max. 5 mV @ 2 kΩ			
Output voltage	< 16 V @ 0–20 mA, 4–20 mA			
Output current	max. 5 mA @ 10 V			
Residual ripple	<20 mV _{eff}			
Parameterisation	DIP switch S1			
Protection device	short circuit protection			
Operating data				
Accuracy	0.3 % FSR @ 23 °C			
Linearity error	0.1 % FSR			
Build-up time (Accuracy 1%)	ca. 60 ms @ 23 °C			
Critical frequency	10 Hz @ 3 dB / 23 °C			
Temperature coefficient	150 ppm / K FSR			
Error coefficient of measuring line	2-conductor: 2.7 K/Ω, 3-conductor: 0.1 K + 0.1 %/Ω			
General				
Operation voltage range	AC 19.2–26.4 V / DC 18.0–31.2 V			
Rated voltage	AC/DC 24 V			
Rated current	ca. 22 mA @ AC 24 V / ca. 13 mA @ DC 24 V			
Status indication	LED green			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
Operation temperature range	-25 °C ... +60 °C			
Storage temperature range	-40 °C ... +85 °C			
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm			
Weight	0.030 kg/piece			
Approvals	cULus in preparation, DNV GL in preparation			
Standards	EN 60947-5-1			

Interface Technology · LCIS temperature/analog converter

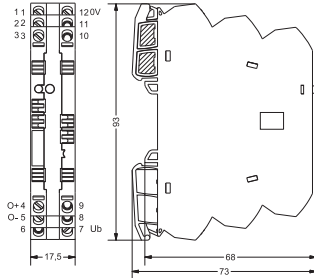
Input: PT100, 2-wire/3-wire

Output: 0–10 V / 0–20 mA / 4–20 mA

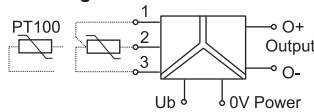
Insulation: 4.0 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

S1	Output
● → Switch On	5 6
0–10V	●
0–20mA	●
4–20mA	●

S1	Input
● → Switch On	1 2 3 4
PT100, 3-wire	
PT100, 2-wire	●
-50 – 50°C	
-50 – 100°C	●
-50 – 150°C	●
0 – 100°C	● ●
0 – 150°C	● ● ●
0 – 200°C	● ● ● ●
0 – 300°C	● ● ● ●
0 – 400°C	● ● ● ●

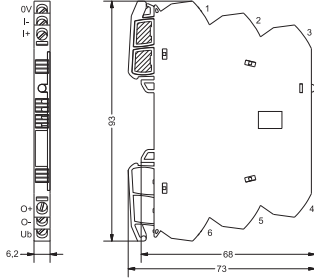
Description	Part-No.	Type	PU
Screw terminal			
Rated voltage	AC/DC 24–240 V	750817.0000 R*	LCIS-WP-WPT3LA-0817-175-S 1
Push-In			
Rated voltage	AC/DC 24–240 V	751817.0000 S*	LCIS-WP-WPT3LA-1817-175-PI 1
Input	750817.0000	751817.0000	
Input variable	Temperature sensor PT100		
Galvanic isolation I/O	3-way isolation		
Measuring procedure	2-wire of 3-wire, constant current		
Zero /Span	Production comparison		
Input resistance	>1 MΩ @ 2-wire, >500 kΩ @ 3-wire		
Parameterisation	DIP switch S1		
Temperature range	-50 °C–50 °C / -50 °C–100 °C / -50 °C–150 °C / 0 °C–100 °C / 0 °C–150 °C / 0 °C–200 °C / 0 °C–300 °C / 0 °C–400 °C		
Sensor current	0.5 mA		
Protection device	Overvoltage protection		
Output			
Output signal	0–10 V, 0–20 mA, 4–20 mA		
Max. load impedance at I-output	500 Ω		
Min. load impedance at U-output	2 kΩ		
Load deviation	at U-output		
	max. 5 mV @ 2 kΩ		
Output voltage	< 18 V @ 0–20 mA, 4–20 mA		
Output current	max. 5 mA @ 10 V		
Residual ripple	<20 mVeff		
Parameterisation	DIP switch S1		
Protection device	short circuit protection		
Operating data			
Accuracy	0.3 % FSR @ 23 °C		
Linearity error	0.1 % FSR		
Build-up time (Accuracy 1%)	ca. 60 ms @ 23 °C		
Critical frequency	10 Hz @ 3 dB / 23 °C		
Temperature coefficient	150 ppm / K FSR		
Error coefficient of measuring line	2-conductor: 2.7 K/Ω, 3-conductor: 0.1 K + 0.1 %/Ω		
General			
Operation voltage range	AC 19,2–264 V / DC 18,0–264 V		
Rated voltage	AC/DC 24–240 V		
Rated current	ca. 22 mA @ AC 24 V / ca. 19 mA @ DC 24 V		
Status indication	LED green		
Insulation voltage input / output	4.0 kV _{eff}		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)		
Color of the housing	RAL 7012 basalt grey		
Mounting	DIN rail mountable TS35 (EN 60715)		
Protection class	IP20		
Installation position	any		
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16		
Operation temperature range	-25 °C ... +60 °C		
Storage temperature range	-40 °C ... +85 °C		
Dimensions (w × h × d)	17.5 × 93.0 × 73.0 mm		
Weight	0.059 kg/piece		
Approvals	cULus in preparation, DNV GL in preparation		
Standards	EN 60947-5-1		

Interface Technology · LCIS temperature/analog converter

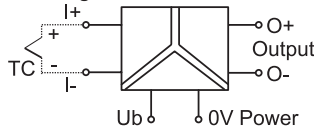
Input: Thermal elements J, K
Output: 0–10 V / 0–20 mA / 4–20 mA
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

S1	Output
● → Switch On	5 6
0–10V	● ●
0–20mA	● ●
4–20mA	● ●

S1	Input
● → Switch On	1 2 3 4
TC J (Fe-CuNi)	● ● ● ●
TC K (Ni-CrNi)	● ● ● ●
-50 – 200°C	● ● ● ●
-50 – 350°C	● ● ● ●
0 – 200°C	● ● ● ●
0 – 400°C	● ● ● ●
0 – 600°C	● ● ● ●
0 – 800°C	● ● ● ●
0 – 1000°C	● ● ● ●
0 – 1200°C	● ● ● ●

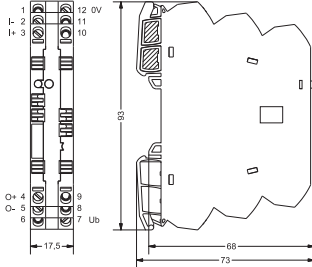
Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24 V	750839.0000 R*	LCIS-WTCA-0839-62-S	1
Push-In				
Rated voltage	AC/DC 24 V	751839.0000 S*	LCIS-WTCA-1839-62-PI	1
Input	750839.0000	751839.0000		
Input variable	Thermo voltage, element J or K (DIN/IEC 584-1)			
Galvanic isolation I/O	3-way isolation			
Measuring procedure	Voltage measurement			
Zero /Span	Production comparison			
Input resistance	>1 MΩ			
Parameterisation	DIP switch S1			
Temperature range	-50 °C–200 °C / -50 °C–350 °C / 0 °C–200 °C / 0 °C–400 °C / 0 °C–600 °C / 0 °C–800 °C / 0 °C–1000 °C / 0 °C–1200 °C			
Cold junction compensation	throughout the entire temperature range			
Protection device	Overvoltage protection			
Output				
Output signal	0–10 V, 0–20 mA, 4–20 mA			
Max. load impedance at I-output	500 Ω			
Min. load impedance at U-output	2 kΩ			
Load deviation	at U-output max. 5 mV @ 2 kΩ			
Output voltage	< 16 V @ 0–20 mA, 4–20 mA			
Output current	max. 5 mA @ 10 V			
Residual ripple	<20 mV _{eff}			
Parameterisation	DIP switch S1			
Protection device	short circuit protection			
Operating data				
Accuracy	0.5 % + 2K FSR @ 23 °C			
Linearity error	0.1 % FSR, temperature linear			
Build-up time (Accuracy 1%)	ca. 60 ms @ 23 °C			
Critical frequency	10 Hz @ 3 dB / 23 °C			
Temperature coefficient	150 ppm / K FSR			
Transmission frequency	–			
General				
Operation voltage range	AC 19.2–26.4 V / DC 18.0–31.2 V			
Rated voltage	AC/DC 24 V			
Rated current	ca. 22 mA @ AC 24 V / ca. 13 mA @ DC 24 V			
Status indication	LED green			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
Operation temperature range	-25 °C ... +60 °C			
Storage temperature range	-40 °C ... +85 °C			
Dimensions (w × h × d)	6.2 × 93.0 × 73.0 mm			
Weight	0.030 kg/piece			
Approvals	cULus in preparation, DNV GL in preparation			
Standards	EN 60947-5-1			

Interface Technology · LCIS temperature/analog converter

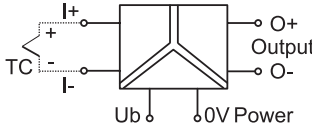
Input: Thermal elements J, K
Output: 0–10 V / 0–20 mA / 4–20 mA
Insulation: 4.0 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

S1	Output
● → Switch On	5 6
0–10V	●
0–20mA	●
4–20mA	●

S1	Input
● → Switch On	1 2 3 4
TC J (Fe-CuNi)	
TC K (Ni-CrNi)	●
-50 – 200°C	
-50 – 350°C	●
0 – 200°C	●
0 – 400°C	●
0 – 600°C	●
0 – 800°C	●
0 – 1000°C	●
0 – 1200°C	●

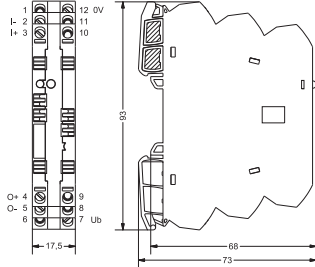
Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24–240 V	750847.0000 R*	LCIS-WP-WTCA-0847-175-S	1
Push-In				
Rated voltage	AC/DC 24–240 V	751847.0000 S*	LCIS-WP-WTCA-1847-175-PI	1
Input	750847.0000	751847.0000		
Input variable	Thermo voltage, element J or K (DIN/IEC 584-1)			
Galvanic isolation I/O	3-way isolation			
Measuring procedure	Voltage measurement			
Zero /Span	Production comparison			
Input resistance	>1 MΩ			
Parameterisation	DIP switch S1			
Temperature range	-50 °C–200 °C / -50 °C–350 °C / 0 °C–200 °C / 0 °C–400 °C / 0 °C–600 °C / 0 °C–800 °C / 0 °C–1000 °C / 0 °C–1200 °C			
Cold junction compensation	throughout the entire temperature range			
Protection device	Overvoltage protection			
Output				
Output signal	0–10 V, 0–20 mA, 4–20 mA			
Max. load impedance at I-output	500 Ω			
Min. load impedance at U-output	2 kΩ			
Load deviation	at U-output max. 5 mV @ 2 kΩ			
Output voltage	< 18 V @ 0–20 mA, 4–20 mA			
Output current	max. 5 mA @ 10 V			
Residual ripple	<20 mV _{eff}			
Parameterisation	DIP switch S1			
Protection device	short circuit protection			
Operating data				
Accuracy	0.5 % + 2K FSR @ 23 °C			
Linearity error	0.1 % FSR, temperature linear			
Build-up time (Accuracy 1%)	ca. 60 ms @ 23 °C			
Critical frequency	10 Hz @ 3 dB / 23 °C			
Temperature coefficient	150 ppm / K FSR			
Transmission frequency	–			
General				
Operation voltage range	AC 19,2–264 V / DC 18,0–264 V			
Rated voltage	AC/DC 24–240 V			
Rated current	ca. 22 mA @ AC 24 V / ca. 19 mA @ DC 24 V			
Status indication	LED green			
Insulation voltage input / output	4.0 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
Push-In single wire	0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
Operation temperature range	-25 °C ... +60 °C			
Storage temperature range	-40 °C ... +85 °C			
Dimensions (w × h × d)	17.5 × 93.0 × 73.0 mm			
Weight	0.059 kg/piece			
Approvals	cULus in preparation, DNV GL in preparation			
Standards	EN 60947-5-1			

Interface Technology · LCIS temperature/analog converter

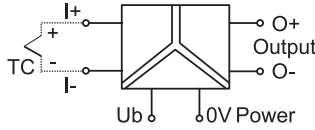
Input: Thermal elements J, K
Output: 0–10 V / 0–20 mA / 4–20 mA
Insulation: 4.0 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

S1	Output
● → Switch On	5/6
0–10V	●
0–20mA	●
4–20mA	●●

S1	Input
● → Switch On	1 2 3 4
TC J (Fe-CuNi)	
TC K (Ni-CrNi)	●
J: -50 – 150°C	
K: -210 – 105°C	
-50 – 250°C	●
-50 – 350°C	●●
0 – 400°C	●●
0 – 600°C	●●●
0 – 800°C	●●●
0 – 1000°C	●●●●
0 – 1200°C	●●●●

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	AC/DC 24–240 V	750848.0000 R*	LCIS-WP-WTCA-0848-175-S	1
Push-In				
Rated voltage	AC/DC 24–240 V	751848.0000 S*	LCIS-WP-WTCA-1848-175-PI	1
Input	750848.0000	751848.0000		
Input variable	Thermo voltage, element J or K (DIN/IEC 584-1)			
Galvanic isolation I/O	3-way isolation			
Measuring procedure	Voltage measurement			
Zero /Span	Production comparison			
Input resistance	>1 MΩ			
Parameterisation	DIP switch S1			
Temperature range	J: -50 °C–150 °C / -50 °C–250 °C / -50 °C–350 °C / 0 °C–400 °C / 0 °C–600 °C / 0 °C–800 °C / 0 °C–1000 °C / 0 °C–1200 °C K: -210 °C–105 °C / -50 °C–250 °C / -50 °C–350 °C / 0 °C–400 °C / 0 °C–600 °C / 0 °C–800 °C / 0 °C–1000 °C / 0 °C–1200 °C			
Cold junction compensation	throughout the entire temperature range			
Protection device	Overvoltage protection			
Output				
Output signal	0–10 V, 0–20 mA, 4–20 mA			
Max. load impedance at I-output	500 Ω			
Min. load impedance at U-output	2 kΩ			
Load deviation	at U-output max. 5 mV @ 2 kΩ			
Output voltage	< 18 V @ 0–20 mA, 4–20 mA			
Output current	max. 5 mA @ 10 V			
Residual ripple	<20 mV _{eff}			
Parameterisation	DIP switch S1			
Protection device	short circuit protection			
Operating data				
Accuracy	0.5 % + 2K FSR @ 23 °C			
Linearity error	0.1 % FSR, temperature linear			
Build-up time (Accuracy 1%)	ca. 60 ms @ 23 °C			
Critical frequency	10 Hz @ 3 dB / 23 °C			
Temperature coefficient	150 ppm / K FSR			
Transmission frequency	–			
General				
Operation voltage range	AC 19,2–264 V / DC 18,0–264 V			
Rated voltage	AC/DC 24–240 V			
Rated current	ca. 22 mA @ AC 24 V / ca. 19 mA @ DC 24 V			
Status indication	LED green			
Insulation voltage input / output	4.0 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	RAL 7012 basalt grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection device	Screwed terminal single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
	Push-In single wire 0.25 mm ² –2.5 mm ² / AWG 20–14 fine stranded wire with ferrule 0.25 mm ² –1.5 mm ² / AWG 20–16			
Operation temperature range	-25 °C ... +60 °C			
Storage temperature range	-40 °C ... +85 °C			
Dimensions (w × h × d)	17.5 × 93.0 × 73.0 mm			
Weight	0.059 kg/piece			
Approvals	cULus in preparation, DNV GL in preparation			
Standards	EN 60947-5-1			

* S Article from stock
 A Available with a lead time
 R Available on request

Notes

Compact, flexible, safe: The new Microcompact Signal Converter of

Compact

Very narrow housing width of 6,2 mm

Wide temperature range

Extended temperature range of -25...+70°C for broad range of applications

Fast response time

Up to 1ms response time for AC signal transmission

High load impedance

All current outputs are qualified for 750 Ohm loads!

Safety isolation

All devices offer „Safety isolation“ with 2,5kV-isolation voltage acc. EN 61140

Easy installation

Jumper combs instead of wiring via complete Isolated jumper connections simplify installation



Now intelligent the LCON series



Advanced technology

The parametrization via FDT software is the leading technology for engineering, Management & Life Cycle Support in automation applications

Worldwide approvals - Class I Div 2

Worldwide approvals like UL and GL allow for use in global applications

Quality

LÜTZE signal converter offer UL 94-V0 and NFF 12, F2

Termination

Screw or spring termination available

Power bridging

Bridge each potential with isolated jumper bars

Interface Technology · Microcompact analog/analog converter

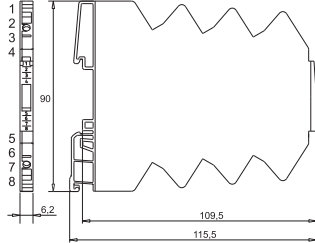
Input: ±30 V, ±50 mA, ±DC 5 A adjustable

Output: 0–20 mA / 4–20 mA / 0–10 V / -10–10 V / 2–10 V / 0–5 V / 1–5 V

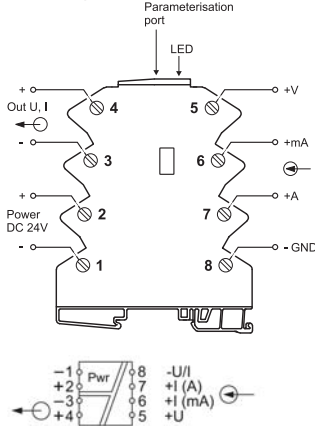
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

Range*	S1 → Switch On					Range*					
	1	2	3	4	5		1	2	3	4	5
0–50mV	●					0–10mA					●
0–100mV	●					0–20mA					●
0–200mV	●					0–50mA					●
0–500mV	●					4–20mA					●
0–1V	●					0–0.5A					●
0–2V	●					0–1A					●
0–5V	●					0–2A					●
0–10V	●					0–5A					●
0–20V	●					±1V					●
0–30V	●					±5V					●
1–5V	●					±10V					●
2–10V	●					±5mA					●
0–1mA	●					±20mA					●
0–2mA	●					±2A					●
0–5mA	●					±5A					●

S1 1-8 off: FDT/DTM

*See instruction leaflet

Output	6	7	8
0–20mA	●		
4–20mA	●		
0–10V	●		
±10V	●		
2–10V	●		
0–5V	●		
1–5V	●		

Description	Part-No.	Type	PU
Screw terminal			
Rated voltage	DC 24 V	750320 R*	LCON AA DFDT 806210
Spring terminal			
Rated voltage	DC 24 V	751320 S*	LCON AA DFDT 806211

Input	
Measurement input	+30/-30 V, +50/-50 mA, DC +5 A/-5 A, adjustable via switch and software FDT/DTM, connection via micro USB
Galvanic isolation I/O	3-way isolation
Step response (10–90%)	1.5 ms – 750 ms (adjustable by means of filter stage 1–5, default: filter stage 4 = 200 ms)
Critical frequency	–
Input resistance	>800 kΩ @ +30/-30 V, 30 Ω @ +50/-50 mA, 10 mΩ @ DC +5 A/-5 A
Zero /Span	freely adjustable

Output	
Output signal	0–10 V, -10–10 V, 0–20 mA, 4–20 mA adjustable via switch and software FDT/DTM, connection via USB service cable
Max. load impedance at I-output	700 Ω @ 0–20 mA, 4–20 mA
Min. load impedance at U-output	2 kΩ @ 0–10 V, -10–10 V
Load deviation	–
Limitation for exceeding measurement range	10.25 V @ 0–10 V, -10–10 V, 20.5 mA @ 0–20 mA, 4–20 mA
max. modulation range/output current	10.5 V @ 0–10 V, -10–10 V, 21 mA @ 0–20 mA, 4–20 mA

Operating data	
Accuracy	0.1 % FSR @ +30/-30 V, +50/-50 V 0.5 % FSR @ +5 A/-5 A
Linearity error	±0.05 % FSR @ +30/-30 V, +50/-50 V ±0.1 % FSR @ +5 A/-5 A

General	
Rated voltage	DC 24 V
Operation voltage range	16.8–30 V
Rated current	approx. 18 mA
Status indication	LED green, red (error)
Input/output protection	Overvoltage DC 30 V, short circuit-proof output
Connection device	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²
Resolution	16-bit
Temperaturcompensation intern	–
Configuration	Switch and software: FDT / DTM
Temperature error	<100 ppm FSR
Data storage	Flash
Insulation voltage input / output	2.5 kV _{eff}
Housing material	PA 6.6 (UL 94 V-0)
Color of the housing	light grey
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Operation temperature range	-40 °C ... +70 °C
Storage temperature range	-40 °C ... +85 °C
Dimensions (w × h × d)	6.2 × 90.0 × 115.5 mm
Weight	0.050 kg/piece
Approvals	cULus (E135145), Ci.1 Div2, Gr. A, B, C, D, T4A, GL
Standards	EN 60947-5-1

Interface Technology · Microcompact temp./analog converter

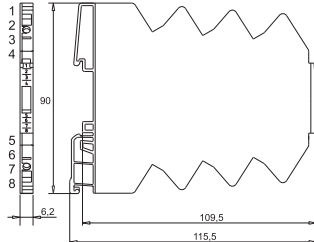
Input: PT, thermocouple, potentiometer – adjustable temperature converter

Output: 0–20 mA / 4–20 mA / 0–10 V / -10–10 V / 2–10 V / 0–5 V / 1–5 V

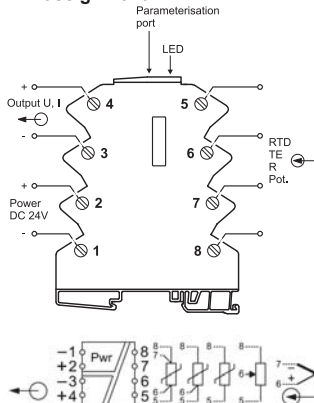
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

Range*	S1	S2
Start	7	8
-200°C	●	●
-150°C	●	●
-100°C	●	●
-50°C	●	●
0°C	●	●
250°C	●	●
300°C	●	●
350°C	●	●
400°C	●	●
450°C	●	●
500°C	●	●
550°C	●	●
600°C	●	●
650°C	●	●
700°C	●	●
750°C	●	●
800°C	●	●
850°C	●	●
900°C	●	●
950°C	●	●
1000°C	●	●
1050°C	●	●
1100°C	●	●
1150°C	●	●
1200°C	●	●
1250°C	●	●
1300°C	●	●
1350°C	●	●
1400°C	●	●

S1-S2 1-8 off:
FDT/DTM

*See instruction leaflet

● → Switch On

Description	Part-No.	Type	PU
Screw terminal			
Rated voltage	DC 24 V	750340 R*	LCON TA DFDT 806210
Spring terminal			
Rated voltage	DC 24 V	751340 S*	LCON TA DFDT 806211

Input	
Measurement input	PT100, PT1000, potentiometer 0–100 kΩ, Thermal elements: Type B, C, E, J, K, N, R, S, T Customer-specific via support points, polynomial
Galvanic isolation I/O	3-way isolation
Temperature range	PT, potentiometer, resistance: -220 ... 850 °C depending on type Thermal elements: -210 ... 2310 °C depending on type
Step response (10–90%)	TE: 10 – 750 ms, PT: 5 – 750 ms (adjustable by means of filter stage 1–5, default: 200 ms – filter stage 4)
Input resistance	Thermocouples: 1 MΩ
Sensor current	PT, potentiometer, resistance: 0.2/0.6 mA depending on type
Circuit	PT - 2, 3, 4-wire, for 2-wire with offset correction, no external bridges necessary, autom. detection
Output	
Output signal	0–10 V, -10–10 V, 0–20 mA, 4–20 mA adjustable via switch and software FDT/DTM, connection via USB service cable
Max. load impedance at I-output	700 Ω @ 0–20 mA, 4–20 mA
Max. load impedance at U-output	>2 kΩ @ 0–10 V, -10–10 V
Limitation for exceeding measurement range	10.25 V @ 0–10 V, -10–10 V, 20.5 mA @ 0–20 mA, 4–20 mA
max. modulation range/output current	10.5 V @ 0–10 V, -10–10 V, 21 mA @ 0–20 mA, 4–20 mA
Residual ripple	–
Operating data	
Accuracy	PT, potentiometer, resistance: 10 K, set measuring range (K) + 0.2 % FSR Thermocoupling: 10 K, set measuring range (K) + 0.4 % FSR ±0.1 % FSR
Linearity error	
General	
Rated voltage	DC 24 V
Operation voltage range	16.8–30 V
Rated current	approx. 18 mA
Status indication	LED green, red (error)
Input/output protection	Oversvoltage DC 30 V, short circuit-proof output
Connection device	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²
Resolution	16-bit
Temperaturcompensation intern	Thermal elements: type ±1 K, max. ±2 K
Configuration	Switch and software: FDT / DTM
Temperature error	<100 ppm/K
Data storage	Flash
Insulation voltage input / output	2.5 kV _{eff}
Housing material	PA 6.6 (UL 94 V-0)
Color of the housing	light grey
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Operation temperature range	-40 °C ... +70 °C
Storage temperature range	-40 °C ... +85 °C
Dimensions (w × h × d)	6.2 × 90.0 × 115.5 mm
Weight	0.050 kg/piece
Approvals	cULus (E135145), Cl.1 Div2, Gr. A, B, C, D, T4A, GL
Standards	EN 60947-5-1

* S Article from stock
A Available with a lead time
R Available on request

Interface Technology · Microcompact analog/limit value switch

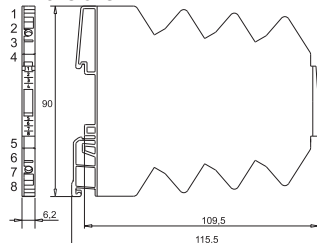
Input: ±30 V, ±50 mA, ±5 A adjustable – adjustable limit value switch

Output: Semiconductor NO contact

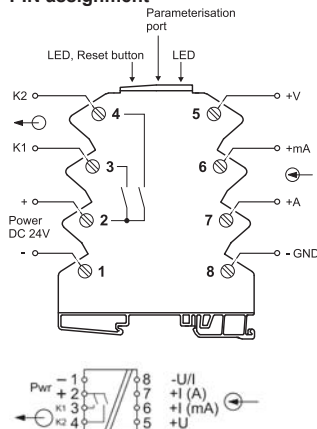
Insulation: 2.5 kV, 2-way isolation



Dimensions



PIN assignment



Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	DC 24 V	750360 R*	LCON ALS FDT 806210	1
Spring terminal				
Rated voltage	DC 24 V	751360 S*	LCON ALS FDT 806211	1
Input				
Measurement input	+30/-30 V, +50/-50 mA, DC +5 A/-5 A, adjustable via software FDT/DTM, connection via micro USB			
Galvanic isolation I/O	2-way isolation			
Step response (10–90%)	4 ms – 750 ms (adjustable by means of filter stage 1–5, default: filter stage 4 = 200 ms)			
Input resistance	>800 kΩ @ +30/-30 V, 30 Ω @ +50/-50 mA, 10 mΩ @ DC +5 A/-5 A			
Zero /Span	freely adjustable			
Output				
Output signal	+30/-30 V, +50/-50 mA, DC +5 A/-5 A, adjustable via software FDT / DTM, connection via USB service cable			
Contact type	K1,K2: Semi-conductor, N/O contact			
Max. switching voltage	DC 30 V			
Max. switching current	DC 100 mA			
Status display output	LED yellow K1 and LED yellow K2, not short circuit protected			
Operating mode	Limit value, window, alarm output / additionally adjustable: Hysteresis, input / output delay			
Operating data				
Accuracy	0.1 % FSR @ +30/-30 V, +50/-50 V 0.5 % FSR @ +5 A/-5 A			
Linearity error	±0.05 % FSR @ +30/-30 V, +50/-50 V ±0,1 % FSR @ +5 A/-5 A			
General				
Rated voltage	DC 24 V			
Operation voltage range	16.8–30 V			
Rated current	approx. 12 mA			
Status indication	LED green, yellow (K1, K2), red (error)			
Input/output protection	Overvoltage DC 30 V			
Connection device	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²			
Resolution	16-bit			
Temperaturcompensation intern	–			
Configuration	Software: FDT / DTM			
Temperature error	<100 ppm FSR			
Data storage	Flash			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0)			
Color of the housing	light grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Operation temperature range	–40 °C ... +70 °C			
Storage temperature range	–40 °C ... +85 °C			
Dimensions (w × h × d)	6.2 × 90.0 × 115.5 mm			
Weight	0.050 kg/piece			
Approvals	cULus (E135145), CI.1 Div2, Gr. A, B, C, D, T4A, GL			
Standards	EN 60947-5-1			

Interface Technology · Microcompact temp./limit value switch

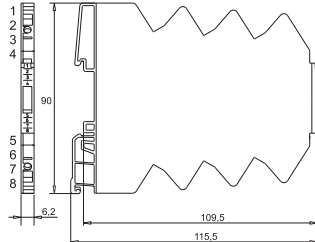
Input: PT, thermocouple, potentiometer – adjustable temperature converter

Output: Semiconductor NO contact

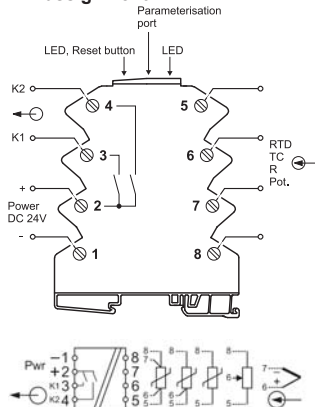
Insulation: 2.5 kV, 2-way isolation



Dimensions



PIN assignment



Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	DC 24 V	750370 R*	LCON TLS FDT 806210	1
Spring terminal				
Rated voltage	DC 24 V	751370 S*	LCON TLS FDT 806211	1
Input				
Measurement input	PT100, PT1000, potentiometer 0–100 kΩ, Thermal elements: Type B, C, E, J, K, N, R, S, T Customer-specific via support points, polynomial			
Galvanic isolation I/O	2-way isolation			
Temperature range	PT, potentiometer, resistance: -220 ... 850 °C depending on type Thermal elements: -210 ... 2310 °C depending on type			
Step response (10–90%)	TE: 10 – 750 ms, PT: 5 – 750 ms (adjustable by means of filter stage 1–5, default: 200 ms – filter stage 4)			
Input resistance	Thermocouples: 1 MΩ			
Sensor current	PT, potentiometer, resistance: 0.2/0.6 mA depending on type			
Circuit	PT - 2, 3, 4-wire, for 2-wire with offset correction, no external bridges necessary, autom. detection			
Output				
Output signal	adjustable via software FDT / DTM, connection via USB service cable			
Contact type	K1,K2: Semi-conductor, N/O contact			
Max. switching voltage	DC 30 V			
Max. switching current	DC 100 mA			
Status display output	LED yellow K1 and LED yellow K2, not short circuit protected			
Operating mode	Limit value, window, alarm output / additionally adjustable: Hysteresis, input / output delay			
Operating data				
Accuracy	PT, potentiometer, resistance: 10 K, set measuring range (K) + 0.2 % FSR Thermocoupling: 10 K, set measuring range (K) + 0.4 % FSR			
Linearity error	±0.1 % FSR			
General				
Rated voltage	DC 24 V			
Operation voltage range	16.8–30 V			
Rated current	approx. 12 mA			
Status indication	LED green, yellow (K1, K2), red (error)			
Input/output protection	Overvoltage DC 30 V			
Connection device	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²			
Resolution	16-bit			
Temperaturcompensation intern	Thermal elements: type ±1 K, max. ±2 K			
Configuration	Software: FDT / DTM			
Temperature error	<100 ppm/K			
Data storage	Flash			
Insulation voltage input / output	AC 2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0)			
Color of the housing	light grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Operation temperature range	-40 °C ... +70 °C			
Storage temperature range	-40 °C ... +85 °C			
Dimensions (w × h × d)	6.2 × 90.0 × 115.5 mm			
Weight	0.050 kg/piece			
Approvals	cULus (E135145), Cl.1 Div2, Gr. A, B, C, D, T4A, GL			
Standards	EN 60947-5-1			

Interface Technology · Microcompact analog/analog splitter

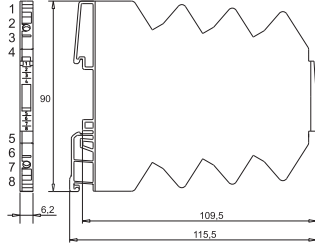
Input: 0–10 V, 0–20 mA, 4–20 mA adjustable

Output: 2 × 0–10 V, 0–20 mA, 4–20 mA

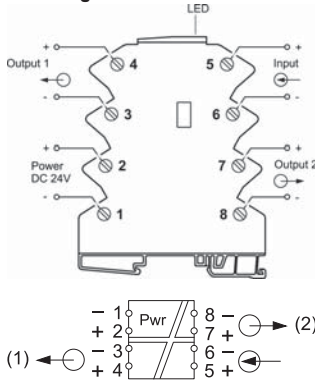
Insulation: 2.5 kV, 4-way isolation



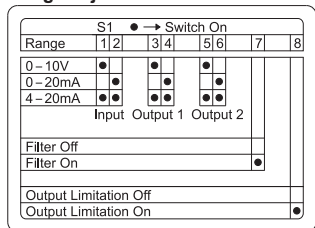
Dimensions



PIN assignment



Range adjustment



See instruction leaflet for details

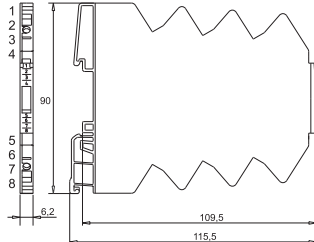
Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage	DC 24 V	750321 R*	LCON AASP D 806210	1
Spring terminal				
Rated voltage	DC 24 V	751321 S*	LCON AASP D 606211	1
Input				
Measurement input	0–10 V, 0–20 mA, 4–20 mA adjustable via switch			
Galvanic isolation I/O	4-way isolation			
Critical frequency	30 Hz (filter off), 5 Hz (filter on)			
Input resistance	500 kΩ @ 0–10 V, 100 Ω @ 0–20 mA, 100 mΩ @ 4–20 mA			
Zero /Span	freely adjustable			
Output				
Output signal	0–10 V, 0–20 mA, 4–20 mA			
Max. load impedance at I-output	400 Ω @ 0–20 mA, 4–20 mA			
Max. load impedance at U-output	>2 kΩ @ 0–10 V			
Limitation for exceeding measurement range	yes, switchable			
max. modulation range/output current	10.5 V @ 0–10 V, 21 mA @ 0–20 mA, 4–20 mA			
Residual ripple	<20 mV _{eff}			
Operating data				
Accuracy	0.1 % FSR			
Linearity error	±0.1 % FSR			
General				
Rated voltage	DC 24 V			
Operation voltage range	16.8–30 V			
Rated current	13 mA			
Status indication	LED green			
Input/output protection	Overvoltage DC 30 V, short circuit-proof output			
Connection device	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²			
Resolution	16-bit			
Configuration	Switch			
Temperature error	<150 ppm FSR			
Data storage	Flash			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0)			
Color of the housing	light grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Operation temperature range	–40 °C ... +70 °C			
Storage temperature range	–40 °C ... +85 °C			
Dimensions (w × h × d)	6.2 × 90.0 × 115.5 mm			
Weight	0.050 kg/piece			
Approvals	cULus, Cl.1 Div2, Gr. A, B, C, D, T4A, GL			
Standards	EN 60947-5-1			

Interface Technology · Microcompact analog/limit value switch

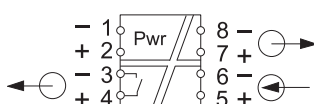
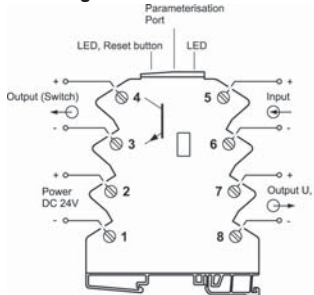
Input/output: 0–10 V, 0–20 mA, 4–20 mA, 2–10 mA, 0–5 V, 1–5 V, 2–10 V adjustable
Output: switching transistor DC 30 V/100 mA adjustable (LiveZero)
Insulation: 2.5 kV, 4-way isolation



Dimensions



PIN assignment



Range adjustment

Range	S1 ● → Switch On							
	1	2	3	4	5	6	7	8
0–10V	●							
0–20mA	●							
4–20mA	●							
2–10mA	●							
0–5V	●							
1–5V	●							
2–10V	●							
Live Zero Off								
Live Zero On								●
Filter Off								
Filter On								●
Output Limitation Off								
Output Limitation On								●

S1 1-8 off: FDT/DTM
See instruction leaflet for details

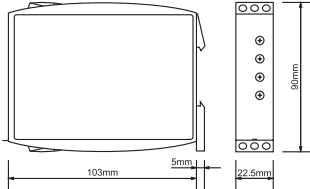
Description	Part-No.	Type	PU
Screw terminal			
Rated voltage	DC 24 V	750322 A*	LCON AALS DFDT 806210
Spring terminal			
Rated voltage	DC 24 V	751322 S*	LCON AALS DFDT 806211
Input			
Measurement input	0–10 V, 0–5 V, 1–5 V, 2–10 V, 0–20 mA, 4–20 mA, 2–10 mA, adjustable via software FDT/DTM, connection via micro USB		
Galvanic isolation I/O	4-way isolation		
Delay ON/OFF	5 ms–200 ms (adjustable by means of filter stage 1–5, default: 50 ms)		
Step response (10–90%)	10 ms – 500 ms (adjustable by means of filter stage 1–5, default: 100 ms)		
Input resistance	500 kΩ @ 0–10 V, 0–5 V, 1–5 V, 2–10 V, 100 Ω @ 0–20 mA, 4–20 mA, 2–10 mA		
Zero /Span	freely adjustable		
Output analogue			
Output signal	0–10 V, 0–5 V, 1–5 V, 2–10 V, 0–20 mA, 4–20 mA, 2–10 mA, adjustable via software FDT/DTM, connection via micro USB		
Max. load impedance at I-output	400 Ω @ 0–20 mA, 4–20 mA, 2–10 mA		
Max. load impedance at U-output	>2 kΩ @ 0–10 V, 0–5 V, 1–5 V, 2–10 V		
Limitation for exceeding measurement range	yes, switchable		
max. modulation range/output current	10.5 V @ 0–10 V, 0–5 V, 1–5 V, 2–10 V, 21 mA @ 0–20 mA, 4–20 mA, 2–10 mA		
Residual ripple	<20 mV _{eff}		
Output switching transistor			
Output signal	0–10 V, 0–5 V, 1–5 V, 2–10 V, 0–20 mA, 4–20 mA, 2–10 mA, adjustable via software FDT/DTM, connection via micro USB		
Contact type	Switching transistor non short-circuit proof		
Max. switching voltage	DC 30 V		
Max. switching current	DC 100 mA		
Status display output	LED yellow		
Operating mode	Limit value, timeframe, tendency+, tendency-, tendency+/-, inversion, error memory		
LiveZero	can be activated via switch and FDT/DTM		
Operating data			
Accuracy	0.1 % FSR		
Linearity error	±0.1 % FSR		
General			
Rated voltage	DC 24 V		
Operation voltage range	16.8–30 V		
Rated current	13 mA		
Status indication	LED green/red		
Input/output protection	Overvoltage DC 30 V		
Connection device	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²		
Resolution	16-bit		
Configuration	Software: FDT / DTM		
Temperature error	<150 ppm FSR		
Data storage	Flash		
Insulation voltage input / output	2.5 kV _{eff}		
Housing material	PA 6.6 (UL 94 V-0)		
Color of the housing	light grey		
Mounting	DIN rail mountable TS35 (EN 60715)		
Protection class	IP20		
Installation position	any		
Operation temperature range	-40 °C ... +70 °C		
Storage temperature range	-40 °C ... +85 °C		
Dimensions (w × h × d)	6.2 × 90.0 × 115.0 mm		
Weight	0.600 kg/piece		
Approvals	cULus (E135145), Cl.1 Div2, Gr. A, B, C, D, T4A, GL		
Standards	EN 60947-5-1		

* S Article from stock
A Available with a lead time
R Available on request

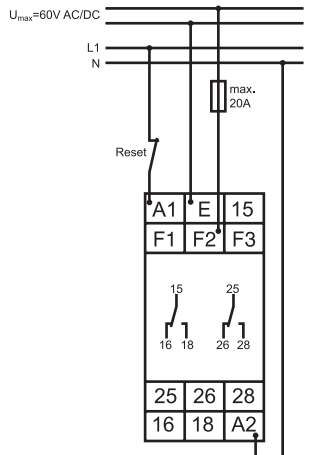
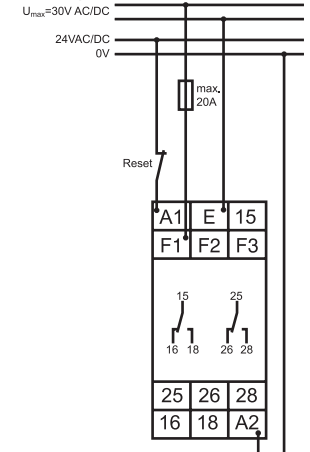
Voltage monitoring 1-phase



Dimensions



PIN assignment



Description	Part-No.	Type	PU
Voltage control			
1-phase	750600 S*	LCR-U-1-1-2U-24-240	1

Function

Monitoring of AC and DC voltages in 1-phase networks with adjustable thresholds
 with adjustable thresholds
 separately adjustable start-up suppression and trigger delay
 function selection via rotary switch
Over: High-voltage monitoring
Over + Latch: High-voltage monitoring with error memory
Under: Under-voltage monitoring
Under + Latch: under-voltage monitoring with error memory
WIN: Monitoring the range between thresholds Min and Max
WIN + Latch: Monitoring the range between Min and Max thresholds with error memory

Time range

Start-up suppression, settable	0 – 10 s
trigger delay, settable	0.1 – 10 s

Status indication

Supply status	LED green
Start bridge status	LED green flashing
Output relay status	LED yellow
Threshold error status	LED red
Trigger delay status	LED red flashing

Housing

Dimensions (w × h × d)	22.5 × 90.0 × 105.0 mm
Color of the housing	light grey
Housing material	PA
Protection class	IP40
Connection cross-section	1×0.5 to 2.5 mm ² with AE 1×4 mm ² without AE 2×0.5 to 1.5 mm ² with AE 2×2.5 mm ² without AE

Installation position

Installation position	any
Weight	0.200 kg/piece
Approvals	cULus (E135145)

Supply circuit

Rated voltage range	AC/DC 24 V – 240 V
Tolerance	AC: -15 %/+10 %, DC: -20 %/+25 %
Rated frequency	16 Hz @ AC 24 V, 48 Hz – 400 Hz @ AC 24 V – 240 V
Power consumption	4.5 VA (1 W)
Operating time	100 % ED
Recovery time	500 ms
Waveform AC	Sinus
Residual ripple	10 %
Voltage drop	>15 % of the power supply
Measurement surge voltage	4 kV

Output circuit

Number of channels	2
Measurement voltage	AC 250 V
Switching voltage	AC 250 V
Switching current max.	3A (5A at a distance >5mm)
Protection device	5 A, quick-acting
Mechanical service life	20 × 10 ⁶ (1000 VA)
Electrical service life	2 × 10 ⁵ (1000 VA)
Switching frequency	60/min @100 VA, 6/min @ 1000 VA
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV

Accuracy

Basic accuracy	≤3 % (end of scale)
Frequency response	-10 %/+5 % (16.6 – 400 Hz)
Tolerance of setting	≤5 % (end of scale)
Repeat accuracy	≤2 %
Voltage influence	N/A
Temperature error	≤0.05 %/°C

Measuring circuit

Measuring variable	DC, AC (16.6 – 400 Hz)
External fuse	max. 20 A (acc. UL 601010)
Measuring range	AC/DC 30 V, AC/DC 60 V, AC/DC 300 V
Overload capability	100 V _{eff} @ 30 V, 150 V _{eff} @ 60 V, 440 V _{eff} @ 300 V
Input resistance	47 kΩ @ 30 V, 100 kΩ @ 60 V, 470 kΩ @ 300 V
Switching threshold min.	5 % – 95 % U _N
Switching threshold max.	10 % – 100 % U _N
Over voltage category	III acc. IEC 60664-1

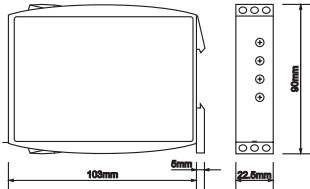
* S Article from stock
 A Available with a lead time
 R Available on request

Measurement surge voltage	4 kV
Environmental conditions	
Temperature range according to UL	-25 °C ... +40 °C
Temperature range	-25 °C ... +55 °C
Storage temperature range	-25 °C ... +70 °C
Relative air humidity	15 % to 85 % acc. IEC 60721-3-3 Class 3K3
Degree of pollution	3
Vibration resistance	10 – 55 Hz 0.35 mm acc. IEC60068-2-6
Impact resistance	15 g 11 ms acc. IEC 60068-2-27
Approvals	cULus (E135145)

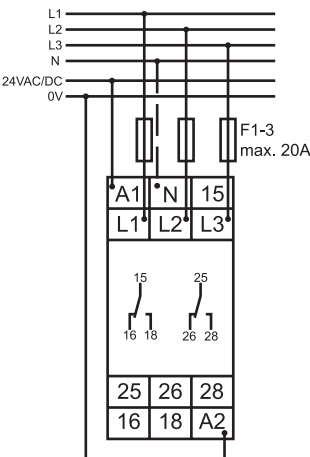
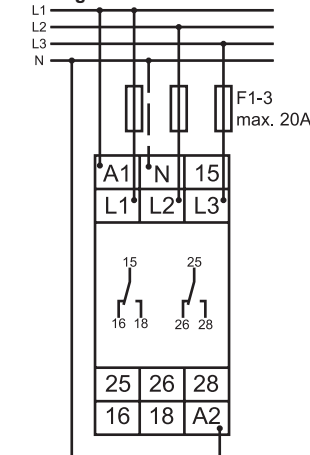
Voltage monitoring 3-phase



Dimensions



PIN assignment



Description	Part-No.	Type	PU
Voltage control			
3-phase	750605 S*	LCR-U-3-1-2U-24-240	1

Function

Voltage monitoring in 3-phase networks with adjustable thresholds
 Settable trigger delay
 Monitoring the phase sequence and phase failure
 Asymmetry monitoring with settable asymmetry function selection via rotary switch
Under: Under-voltage monitoring
Under + SEQ: Under-voltage and phase sequence monitoring
WIN: Monitoring the range between thresholds Min and Max
WIN + SEQ: Monitoring the range between the Min and Max thresholds and phase sequence monitoring

Time range

Start-up suppression, settable	No
trigger delay, settable	0.1 – 10 s

Status indication

Output relay status	LED yellow
Threshold error status	LED red
Trigger delay status	LED red flashing

Housing

Dimensions (w × h × d)	22.5 × 90.0 × 105.0 mm
Color of the housing	light grey
Housing material	PA
Protection class	IP40
Connection cross-section	1×0.5 to 2.5 mm ² with AE 1×4 mm ² without AE 2×0.5 to 1.5 mm ² with AE 2×2.5 mm ² without AE

Installation position	any
Weight	0.200 kg/piece
Approvals	cULus

Supply circuit

Rated voltage range	AC/DC 24 V – 240 V
Power consumption	2 VA (1 W)
Operating time	100 % ED
Recovery time	500 ms
Waveform AC	Sinus
Residual ripple	10 %
Voltage drop	>30 % of the supply voltage
Measurement surge voltage	4 kV

Output circuit

Number of channels	2
Switching element	Relays
Contact type	Change over contact
Measurement voltage	AC 250 V
Switching voltage	AC 250 V
Switching current max.	3A (5A at a distance >5mm)
Protection device	5 A, quick-acting
Mechanical service life	20 × 10 ⁶ (1000 VA)
Electrical service life	2 × 10 ⁵ (1000 VA)
Switching frequency	60/min @100 VA, 6/min @ 1000 VA
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV

Accuracy

Basic accuracy	≤3 % (end of scale)
Tolerance of setting	≤5 % (end of scale)
Repeat accuracy	≤2 %
Temperature error	≤0.05 %/°C

Measuring circuit

Measuring variable	AC Sinus (48 to 63 Hz)
External fuse	max. 20 A (acc. UL 601010)
Measuring range	3(N) AC 400/230 V
Overload capability	3(N) AC 600/346 V
Input resistance	1 MΩ
Switching threshold min.	-30 % – 20 % U _N
Switching threshold max.	-20 % – 30 % U _N
Asymmetry	5 % – 25 %
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV

Environmental conditions

Temperature range according to UL	-25 °C ... +40 °C
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* S Article from stock
 A Available with a lead time
 R Available on request

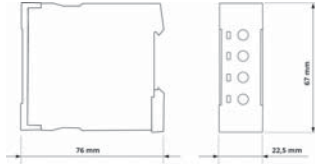
Temperature range	-25 °C ... +55 °C
Storage temperature range	-25 °C ... +70 °C
Relative air humidity	15 % to 85 % acc. IEC 60721-3-3 Class 3K3
Degree of pollution	3
Vibration resistance	10 – 55 Hz 0.35 mm acc. IEC60068-2-6
Impact resistance	15 g 11 ms acc. IEC 60068-2-27
Approvals	cULus

Interface Technology · Monitoring relay

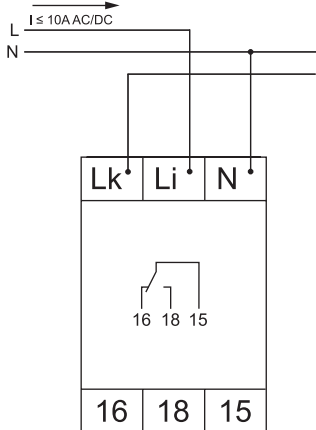
Current monitoring 1-phase, AC-DC 10 A



Dimensions



PIN assignment



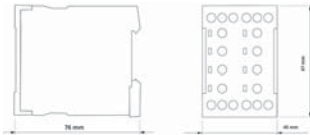
Description	Part-No.	Type	PU
Current Control			
1-phase	750630 S*	LCR-I-1-10-1U-24-240	1
Time range			
Switch-on delay		300 ms	
Switch-off delay		0.1 – 10 s, adjustable	
Status indication			
Supply status		LED green	
Output relay status		LED yellow	
Status under/over-current		LED red	
Trigger delay status		LED red flashing	
Housing			
Dimensions (w × h × d)		22.5 × 67.0 × 76.0 mm	
Color of the housing		light grey	
Housing material		PA 6.6 V0	
Protection class		IP20	
Connection device		Screwed terminal	
Connection cross-section		AWG 20 – AWG 13	
Connection cross-section		0.5 – 2.5 mm ² with AE	
Installation position		any	
Weight		0.070 kg/piece	
Approvals		cULus	
Supply circuit			
Rated voltage range		AC 110 V/DC 24 V – AC/DC 240 V	
Tolerance		AC: -15 %/+15 %, DC: -30 %/+30 %	
Rated frequency		16,6 – 400 Hz	
Power consumption		0.25 W/0.25 VA @ 24 V, 0.37 W/1.3 VA @ 230 V	
Operating time		100 % ED	
Bridging time		<140 ms	
Recovery time		>200 ms	
Voltage drop		≥6 V	
Output circuit			
Number of channels		1	
Switching element		Relays	
Contact type		Change over contact	
Measurement voltage		AC 250 V (IEC 60947-1)	
Switching voltage		AC 400 V	
Switching current max.		AC-1: 8A/250V, AC-15: 1.5A/240V(B300), DC-12: 8A/24V, DC-13: 0.1A/250V	
Protection device		8 A, quick-acting	
Mechanical service life		30 × 10 ⁶ (1000 VA)	
Electrical service life		1 × 10 ⁵ (1000 VA) (AC-1)	
Switching frequency		6/min with load	
Accuracy			
Basic accuracy		≤2.5 % (end of scale)	
Tolerance of setting		≤5 % (end of scale)	
Repeat accuracy		≤1 %	
Temperature error		≤0.05 %/°C	
Measuring circuit			
Measuring variable		Current 1-phase	
Measuring range		AC/DC 10 A	
Measuring procedure		Real effective value	
Monitored functions		Under-current, over-current, under/over-current	
Overload capability		Permanent load: 15 A, Impulse load <1 s: 50 A, Impulse load <100 ms: 150 A	
Input resistance		2 mΩ	
Switching threshold min.		5 % – 95 %	
Switching threshold max.		10 % – 100 %	
Hysteresis		1 %	
Environmental conditions			
Temperature range		-25 °C ... +60 °C	
Storage temperature range		-40 °C ... +70 °C	
Relative air humidity		5 % to 95 % acc. IEC 60721-3-3 Class 3K3	
Vibration resistance		2 – 13.2 Hz 1 mm 13.2 – 100 Hz 7 m/s ²	
Impact resistance		15 g 11 ms acc. IEC 60068-2-27	
Approvals		cULus	

Interface Technology · Monitoring relay

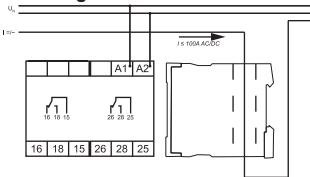
Current monitoring 1-phase, AC-DC 5 A



Dimensions



PIN assignment



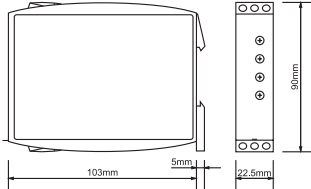
Description	Part-No.	Type	PU
Current Control			
1-phase	750635 S*	LCR-I-100-2U-24-240	1
Time range			
Switch-on delay		300 ms	
Switch-off delay		0.1 – 10 s, adjustable	
Start-up suppression, settable		0 – 10 s	
Status indication			
Supply status		LED green	
Output relay status		LED yellow	
Status under/over-current		LED red	
Trigger delay status		LED red flashing	
Housing			
Dimensions (w × h × d)		45.0 × 67.0 × 76.0 mm	
Color of the housing		light grey	
Housing material		PA 6.6 V0	
Protection class		IP20	
Connection device		Screwed terminal	
Connection cross-section		AWG 20 – AWG 13	
Connection cross-section		0.5 – 2.5 mm ² with AE	
Installation position		any	
Weight		0.070 kg/piece	
Approvals		cULus	
Supply circuit			
Rated voltage range		AC/DC 24 V – 240 V	
Tolerance		AC: -15 %/+10 %, DC: -30 %/+30 %	
Rated frequency		16,6 – 400 Hz	
Power consumption		0.40 W/0.25 VA @ 24 V, 0.50 W/0.9 VA @ 230 V	
Operating time		100 % ED	
Bridging time		<20 ms	
Recovery time		>500 ms	
Voltage drop		≥6 V	
Output circuit			
Number of channels		2	
Switching element		Relays	
Contact type		Change over contact	
Measurement voltage		AC 250 V (IEC 60947-1)	
Switching voltage		AC 400 V	
Switching current max.		AC-1: 8A/250V, AC-15: 1.5A/240V(B300), DC-12: 8A/24V, DC-13: 0.1A/250V	
Protection device		8 A, quick-acting	
Mechanical service life		30 × 10 ⁶ (1000 VA)	
Electrical service life		1 × 10 ⁵ (1000 VA) (AC-1)	
Switching frequency		6/min with load	
Accuracy			
Basic accuracy		≤2.5 % (2.0 % @ 50/60 Hz)	
Tolerance of setting		≤5 % (end of scale)	
Repeat accuracy		≤1 %	
Moisture influence		3 % on basic accuracy (>85 % air humidity)	
Temperature error		≤0.04 %/°C	
Measuring circuit			
Measuring variable		Current 1-phase, current transformer	
Measuring range		AC/DC 100 A	
Measuring procedure		Real effective value	
Monitored functions		Under-current, over-current, under/over-current under/over-current with separated relay outputs (MM) Maximum monitoring (2Max) Error memory can be activated (+L)	
Switching threshold min.		5 % – 95 %	
Switching threshold max.		10 % – 100 %	
Hysteresis		1 %	
Environmental conditions			
Temperature range		-25 °C ... +60 °C	
Storage temperature range		-40 °C ... +70 °C	
Relative air humidity		5 % to 95 % acc. IEC 60721-3-3 Class 3K3	
Vibration resistance		2 – 13.2 Hz 1 mm 13.2 – 100 Hz 7 m/s ²	
Impact resistance		15 g 11 ms acc. IEC 60068-2-27	
Approvals		cULus	

Interface Technology · Monitoring relay

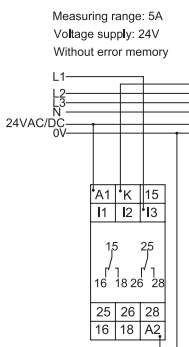
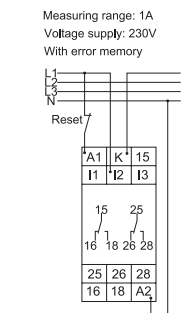
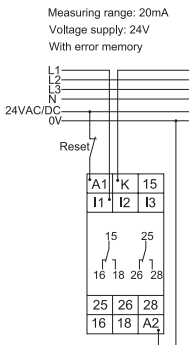
Current control in 3-phase networks 1-phase, AC 5 A



Dimensions



PIN assignment



Description	Part-No.	Type	PU
Current Control			
1-phase	750631 S*	LCR-I-1-5-2U-24-240	1

Function

Current monitoring of AC and DC voltages in 1-phase networks with adjustable thresholds
separately adjustable start-up suppression and trigger delay
function selection via rotary switch
Over: Over-current monitoring
Over + Latch: Over-current monitoring with error memory
Under: Under-current monitoring
Under + Latch: Under-current monitoring with error memory
WIN: Monitoring the range between thresholds Min and Max
WIN + Latch: Monitoring the range between Min and Max thresholds with error memory

Time range

Start-up suppression, settable	0 – 10 s
trigger delay, settable	0.1 – 10 s

Status indication

Supply status	LED green
Start bridge status	LED green flashing
Output relay status	LED yellow
Threshold error status	LED red
Trigger delay status	LED red flashing

Housing

Dimensions (w × h × d)	22.5 × 90.0 × 105.0 mm
Color of the housing	light grey
Housing material	PA
Protection class	IP40
Connection cross-section	1×0.5 to 2.5 mm ² with AE 1×4 mm ² without AE 2×0.5 to 1.5 mm ² with AE 2×2.5 mm ² without AE

Installation position

Installation position	any
Weight	0.200 kg/piece

Approvals

cULus

Supply circuit

Rated voltage range	AC/DC 24 V – 240 V
Tolerance	AC: -15 %/+10 %, DC: -20 %/+25 %
Rated frequency	16 Hz – 48 Hz @ AC 48 – 240 V, 48 Hz – 400 Hz @ AC 24 V – 240 V
Power consumption	4.5 VA (1 W)
Operating time	100 % ED
Recovery time	500 ms
Waveform AC	Sinus
Residual ripple	10 %
Voltage drop	>15 % of the power supply
Measurement surge voltage	4 kV

Output circuit

Number of channels	2
Switching element	Relays
Contact type	Change over contact
Measurement voltage	AC 250 V
Switching voltage	AC 250 V
Switching current max.	5A (3A)
Protection device	5 A, quick-acting
Mechanical service life	20 × 10 ⁶ (1000 VA)
Electrical service life	2 × 10 ⁵ (1000 VA)
Switching frequency	60/min @100 VA, 6/min @ 1000 VA
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV

Accuracy

Basic accuracy	≤3 % (end of scale)
Frequency response	-10 %/+5 % (16.6 – 400 Hz)
Tolerance of setting	≤5 % (end of scale)
Repeat accuracy	≤2 %
Voltage influence	N/A
Temperature error	≤0.05 %/°C

Measuring circuit

Measuring variable	DC, AC (16.6 – 400 Hz)
Measuring range	AC/DC 20 mA, AC/DC 1 A, AC/DC 5 A
Overload capability	250 mA @ 20 mA, 3 A @ 1 A, 10 A @ 5 A
Input resistance	2.7 Ω @ 20 mA, 47 mΩ @ 1 A, 10 mΩ @ 5 A
Switching threshold min.	5 % – 95 % I _N
Switching threshold max.	10 % – 100 % I _N

* S Article from stock
A Available with a lead time
R Available on request

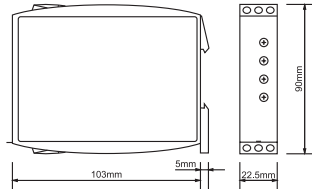
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV
Environmental conditions	
Temperature range according to UL	-25 °C ... +40 °C
Temperature range	-25 °C ... +55 °C
Storage temperature range	-25 °C ... +70 °C
Relative air humidity	15 % to 85 % acc. IEC 60721-3-3 Class 3K3
Degree of pollution	3 acc. IEC 60664-1
Vibration resistance	10 – 55 Hz 0.35 mm acc. IEC60068-2-6
Impact resistance	15 g 11 ms acc. IEC 60068-2-27
Approvals	cULus

Interface Technology · Monitoring relay

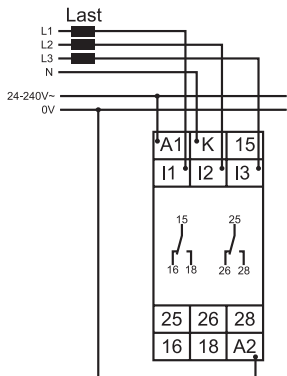
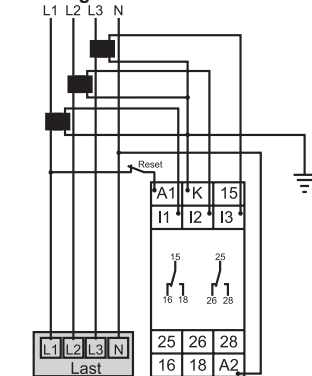
Current control in 3-phase networks 3-phase, AC/DC 5 A



Dimensions



PIN assignment



Description	Part-No.	Type	PU
Current Control			
3-phase	750640 S*	LCR-I-3-05-2U-24-240	1

Function

3-phase current monitoring
separately adjustable start-up suppression and trigger delay
function selection via rotary switch
Over: Over-current monitoring
Over + Latch: Over-current monitoring with error memory
Under: Under-current monitoring
Under + Latch: Under-current monitoring with error memory
WIN: Monitoring the range between thresholds Min and Max
WIN + Latch: Monitoring the range between Min and Max thresholds with error memory

Time range

Start-up suppression, settable 0 – 10 s
trigger delay, settable 0.1 – 10 s

Status indication

Supply status LED green
Start bridge status LED green flashing
Output relay status LED yellow
Threshold error status LED red
Trigger delay status LED red flashing

Housing

Dimensions (w × h × d) 22.5 × 90.0 × 105.0 mm
Color of the housing light grey
Housing material PA 6.6 V0
Protection class IP20
Connection cross-section 1×0.5 to 2.5 mm² with AE 1×4 mm² without AE 2×0.5 to 1.5 mm² with AE 2×2.5 mm² without AE
Installation position any
Weight 0.200 kg/piece
Approvals cULus

Supply circuit

Rated voltage range AC/DC 24 V – 240 V
Tolerance AC: -15 %/+10 %, DC: -20 %/+25 %
Rated frequency 16 Hz @ AC 24 V, 48 Hz – 400 Hz @ AC 24 V – 240 V
Power consumption 2 VA (1.5 W)
Operating time 100 % ED
Recovery time 100 ms
Voltage drop >30 % of the supply voltage
Over voltage category III acc. IEC 60664-1
Measurement surge voltage 4 kV

Output circuit

Number of channels 2
Switching element Relays
Contact type Change over contact
Measurement voltage AC 250 V (IEC 60947-1)
Switching voltage AC 250 V
Switching current max. 3A (5A at a distance >5mm)
Protection device 5 A, quick-acting
Mechanical service life 20 × 10⁶ (1000 VA)
Electrical service life 2 × 10⁵ (1000 VA)
Switching frequency 60/min @ 100 VA, 6/min @ 1000 VA
Over voltage category III acc. IEC 60664-1
Measurement surge voltage 4 kV

Accuracy

Basic accuracy ≤3 % (end of scale)
Frequency response -10 %/+5 % (16.6 – 400 Hz)
Tolerance of setting ≤5 % (end of scale)
Repeat accuracy ≤2 %
Temperature error ≤0.05 %/°C

Measuring circuit

Measuring variable AC Sinus (16.6 to 400 Hz)
Measuring range each AC 5 A
Overload capability 6 A permanent each
Input resistance 10 mΩ
Switching threshold min. 5 % – 95 % U_N
Switching threshold max. 10 % – 100 % U_N
Over voltage category III acc. IEC 60664-1
Measurement surge voltage 4 kV

Environmental conditions

* S Article from stock
A Available with a lead time
R Available on request

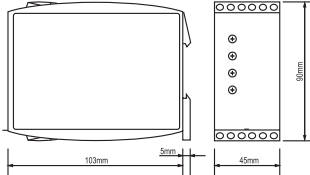
Temperature range according to UL	-25 °C ... +40 °C
Temperature range	-25 °C ... +55 °C
Storage temperature range	-25 °C ... +70 °C
Relative air humidity	15 % to 85 % acc. IEC 60721-3-3 Class 3K3
Degree of pollution	3
Vibration resistance	10 – 55 Hz 0.35 mm acc. IEC60068-2-6
Impact resistance	15 g 11 ms acc. IEC 60068-2-27
Approvals	cULus

Interface Technology · Monitoring relay

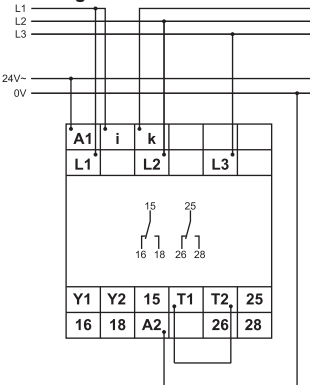
Load sensor 1 and 3-phase loads AC 480 V



Dimensions



PIN assignment



Description	Part-No.	Type	PU
Load sensor	750680	S*	1

Function

True power monitoring for 1 and 3-phase loads
with 48 settable thresholds (P1, P2)
separately adjustable start-up suppression and trigger delay
selectable error memory
Temperature monitoring of the motor coil with max. 6 PTC
One reset button;
function selection via rotary switch
2MIN: Minimum monitoring
2MIN+< ON: Minimum monitoring and recognition of shut-down consumers as GOOD status
2MIN+< Inv: Minimum monitoring and recognition of shut-down consumers as errors
2MAX: Maximum monitoring
2MAX+< ON: Maximum monitoring and recognition of shut-down consumers as errors
2MAX+< Inv: Maximum monitoring and recognition of shut-down consumers as GOOD status
WIN: Monitoring the range between thresholds Min and Max
WIN+< ON: Monitoring the range between the Min and Max thresholds and recognition of shut-down consumers as GOOD status
WIN+< Inv: Monitoring the range between the Min and Max thresholds and recognition of shut-down consumers as errors
MAX/MIN: Maximum/minimum monitoring
MAX/MIN+< ON: Maximum/minimum monitoring and Monitoring the range and recognition of shut-down consumers as GOOD status
MAX/MIN+< Inv: Maximum/minimum monitoring and Monitoring the range and recognition of shut-down consumers as errors

Time range

Start-up suppression, settable	0 – 100 s
trigger delay, settable	0.1 – 50 s

Status indication

Supply status	LED green
Start bridge status	LED green flashing
Output relay status	LED yellow
Threshold error status	LED red
Trigger delay status	LED red flashing
Status I/O	LED yellow
Over-temperature status	LED red

Housing

Dimensions (w × h × d)	45.0 × 90.0 × 105.0 mm
Color of the housing	light grey
Housing material	PA 6.6 V0
Protection class	IP20
Connection cross-section	1×0.5 to 2.5 mm ² with AE 1×4 mm ² without AE 2×0.5 to 1.5 mm ² with AE 2×2.5 mm ² without AE

Installation position

Installation position	any
Weight	0.400 kg/piece
Approvals	cULus

Supply circuit

Rated voltage range	AC/DC 24 V – 240 V
Tolerance	AC: -15 %/+10 %, DC: -20 %/+25 %
Rated frequency	16 Hz @ AC 24 V, 48 Hz – 400 Hz @ AC 24 V – 240 V
Power consumption	3.5 VA (3 W)
Operating time	100 % ED
Recovery time	500 ms
Voltage drop	>30 % of the supply voltage
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV

Output circuit

Number of channels	2
Switching element	Relays
Contact type	Change over contact
Measurement voltage	AC 250 V
Switching voltage	AC 250 V
Switching current max.	3A (5A at a distance >5mm)
Protection device	5 A, quick-acting
Mechanical service life	20 × 10 ⁶ (1000 VA)
Electrical service life	2 × 10 ⁵ (1000 VA)
Switching frequency	60/min @ 100 VA, 6/min @ 1000 VA
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV

* S Article from stock
A Available with a lead time
R Available on request

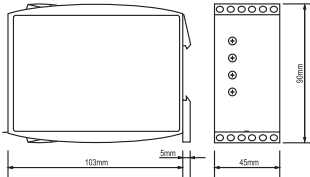
Accuracy	
Basic accuracy	±2 % (end of scale)
Frequency response	±0.025 %/Hz
Tolerance of setting	≤5 % (end of scale)
Repeat accuracy	≤2 %
Temperature error	±0.02 %/°C
Measuring circuit	
Measuring variable	0.75 kW, 1.5 kW, 3 kW, 6 kW reversible
Wave form AC Sinus	10 – 400 Hz
Wave form PWM	10 – 100 Hz (sine-assessed)
Measurement input 1-phase	AC 0 – 480 V
Measurement input 3-phase	3ph 0 – 480/277 V
Overload capability	550 V (1-phase), 550/318 V (3-phase)
Input resistance	1.25 MΩ
Measurement input current, 1-phase	0.15A – 6A (0.75 – 1.5 kW), 0.3 – 12 A (3 – 6 kW)
Overload capability current	12 A permanent
Current interruption	150 mA (0.75 – 1.5 kW), 180 mA (3 – 6 kW)
Current flow sensor	300 mA (0.75 – 1.5 kW), 360 mA (3 – 6 kW)
Switching threshold P1	10 % – 120 % from P _N
Switching threshold P2	5 % – 110 % from P _N
Hysteresis	1 % @ Maximum measuring range ¹
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV
Temperature monitoring	
Sum of cold resistance	<1.5 kΩ
Response value	≥3.6 kΩ (relay drops)
Drop-off value	≤1.8 kW (Relay is energised)
Line short-circuit	No shut-off
Measurement voltage	≤7.5 V at R ≤4.0 kW (acc. IEC 60947-8)
Control input	
Function	Fault store
Load	none
Cable length	10 m max., twisted
Reset	NC contact in supply circuit
Environmental conditions	
Temperature range according to UL	-25 °C ... +40 °C
Temperature range	-25 °C ... +55 °C
Storage temperature range	-25 °C ... +70 °C
Relative air humidity	15 % to 85 % acc. IEC 60721-3-3 Class 3K3
Degree of pollution	3
Vibration resistance	10 – 55 Hz 0.35 mm acc. IEC60068-2-6
Impact resistance	15 g 11 ms acc. IEC 60068-2-27
Approvals	cULus

Interface Technology · Monitoring relay

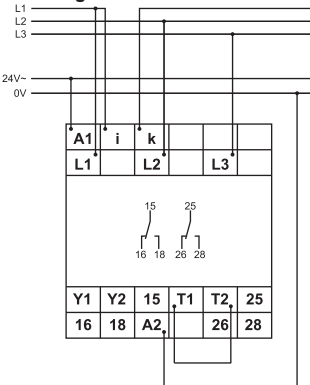
Load sensor 1 and 3-phase loads AC 690 V



Dimensions



PIN assignment



Description	Part-No.	Type	PU
Load sensor	750681	S*	1
1 and 3-phase loads		LCR-PW-3-690-D-2U-24-240	

Function

True power monitoring for 1 and 3-phase loads
with 48 settable thresholds (P1, P2)
separately adjustable start-up suppression and trigger delay
selectable error memory
Temperature monitoring of the motor coil with max. 6 PTC
One reset button;
function selection via rotary switch
2MIN: Minimum monitoring
2MIN+I< ON: Minimum monitoring and recognition of shut-down consumers as GOOD status
2MIN+I< Inv: Minimum monitoring and recognition of shut-down consumers as errors
2MAX: Maximum monitoring
2MAX+I< ON: Maximum monitoring and recognition of shut-down consumers as errors
2MAX+I< Inv: Maximum monitoring and recognition of shut-down consumers as GOOD status
WIN: Monitoring the range between thresholds Min and Max
WIN+I< ON: Monitoring the range between the Min and Max thresholds and recognition of shut-down consumers as GOOD status
WIN+I< Inv: Monitoring the range between the Min and Max thresholds and recognition of shut-down consumers as errors
MAX/MIN: Maximum/minimum monitoring
MAX/MIN+I< ON: Maximum/minimum monitoring and Monitoring the range and recognition of shut-down consumers as GOOD status
MAX/MIN+I< Inv: Maximum/minimum monitoring and Monitoring the range and recognition of shut-down consumers as errors
MAX/MIN+I=0 ON: Maximum/minimum monitoring and recognition of shut-down consumers as ERROR or GOOD status

Time range

Start-up suppression, settable	0 – 100 s
trigger delay, settable	0.1 – 50 s

Status indication

Supply status	LED green
Start bridge status	LED green flashing
Output relay status	LED yellow
Threshold error status	LED red
Trigger delay status	LED red flashing
Status I/O	LED yellow
Over-temperature status	LED red

Housing

Dimensions (w × h × d)	45.0 × 90.0 × 105.0 mm
Color of the housing	light grey
Housing material	PA 6.6 V0
Protection class	IP20
Connection cross-section	1×0.5 to 2.5 mm ² with AE 1×4 mm ² without AE 2×0.5 to 1.5 mm ² with AE 2×2.5 mm ² without AE

Installation position

Installation position	any
Weight	0.400 kg/piece
Approvals	cULus

Supply circuit

Rated voltage range	AC/DC 24 V – 240 V
Tolerance	AC: -15 %/+10 %, DC: -20 %/+25 %
Rated frequency	16 Hz @ AC 24 V, 48 Hz – 400 Hz @ AC 24 V – 240 V
Power consumption	3.5 VA (3 W)
Operating time	100 % ED
Recovery time	500 ms
Voltage drop	>30 % of the supply voltage
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV

Output circuit

Number of channels	2
Switching element	Relays
Contact type	Change over contact
Measurement voltage	AC 250 V
Switching voltage	AC 250 V
Switching current max.	5A (3A)
Protection device	5 A, quick-acting
Mechanical service life	20 × 10 ⁶ (1000 VA)
Electrical service life	2 × 10 ⁵ (1000 VA)
Switching frequency	60/min @ 100 VA, 6/min @ 1000 VA
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV

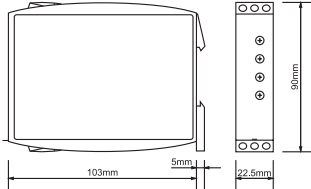
* S Article from stock
A Available with a lead time
R Available on request

Accuracy	
Basic accuracy	±2 % (end of scale)
Frequency response	±0.025 %/Hz
Tolerance of setting	≤5 % (end of scale)
Repeat accuracy	≤2 %
Temperature error	±0.02 %/°C
Measuring circuit	
Measuring variable	2 kW, 4 kW, 8 kW, 16 kW reversible
Wave form AC Sinus	10 – 400 Hz
Wave form PWM	10 – 100 Hz (sine-assessed)
Measurement input 1-phase	AC 42 – 690 V
Measurement input 3-phase	3ph 42 – 690/400 V
Overload capability	796 V (1-phase), 796/460 V (3-phase)
Input resistance	1.25 MΩ
Measurement input current, 1-phase	0.20A – 8 A (2 kW, 4 kW), 0.4 – 16 A (8 kW, 16 kW), for I>16 A clearance >5 mm
Overload capability current	18 A permanent
Current interruption	200 mA (2 kW, 4 kW), 400 mA (8 kW, 16 kW)
Current flow sensor	240 mA (2 kW, 4 kW), 480 mA (8 kW, 16 kW)
Switching threshold P1	10 % – 120 % from P _N
Switching threshold P2	5 % – 110 % from P _N
Hysteresis	1 % @ Maximum measuring range'
Over voltage category	III acc. IEC 60664-1
Measurement surge voltage	4 kV
Temperature monitoring	
Sum of cold resistance	<1.5 kΩ
Response value	≥3.6 kΩ (relay drops)
Drop-off value	≤1.8 kW (Relay is energised)
Line short-circuit	No shut-off
Measurement voltage	≤7.5 V at R ≤4.0 kW (acc. IEC 60947-8)
Control input	
Function	Fault store
Load	none
Cable length	10 m max., twisted
Reset	NC contact in supply circuit
Environmental conditions	
Temperature range according to UL	-25 °C ... +40 °C
Temperature range	-25 °C ... +55 °C
Storage temperature range	-25 °C ... +70 °C
Relative air humidity	15 % to 85 % acc. IEC 60721-3-3 Class 3K3
Degree of pollution	3 acc. IEC 60664-1
Vibration resistance	10 – 55 Hz 0.35 mm acc. IEC60068-2-6
Impact resistance	15 g 11 ms acc. IEC 60068-2-27
Approvals	cULus

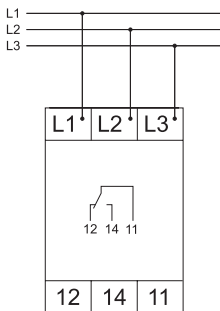
Phase sequence and asymmetry



Dimensions



PIN assignment



Description	Part-No.	Type	PU
Phase sequence and asymmetry	750610 S*	LCR-PH-3-1-1U	1
Time range			
Switch-on delay		400 ms	
Switch-off delay		<250 ms	
Status indication			
Supply status		LED green	
Output relay status		LED yellow	
Housing			
Dimensions (w × h × d)		22.5 × 67.0 × 76.0 mm	
Color of the housing		light grey	
Housing material		PA	
Protection class		IP20	
Connection device		Screwed terminal	
Connection cross-section		AWG 20 – AWG 13	
Connection cross-section		0.5 – 2.5 mm ² with AE	
Installation position		any	
Weight		0.082 kg/piece	
Approvals		cULus	
Supply circuit			
Rated voltage range		AC 120/208 V – 277/488 V	
Tolerance		-10 %/+10 %	
Rated frequency		50 – 60 Hz (48 – 63 Hz)	
Power consumption		0.9 W/VA	
Operating time		100 % ED	
Recovery time		>500 ms	
Waveform AC		Sinus	
Residual ripple		10 %	
Voltage drop		≥121 V/171 V	
Output circuit			
Number of channels		1	
Switching element		Relays	
Contact type		Change over contact	
Measurement voltage		AC 250 V (IEC 60947-1)	
Switching voltage		AC 250 V	
Switching current max.		AC-1: 8A/250V, AC-15: 1.5A/240V(B300), DC-12: 8A/24V, DC-13: 0.1A/250V	
Protection device		8 A, quick-acting	
Mechanical service life		30 × 10 ⁶	
Electrical service life		1 × 10 ⁵ (AC-1)	
Switching frequency		6/min with load	
Accuracy			
Basic accuracy		≤5 % (end of scale)	
Tolerance of setting		≤5 % (end of scale)	
Repeat accuracy		≤1 %	
Temperature error		≤0.05 %/°C	
Measuring circuit			
Measuring variable		AC Sinus (48 to 63 Hz), 3-phase	
External fuse		max. 20 A (acc. UL 601010)	
Measuring range		3(N) AC 400/230 V	
Measuring procedure		Rectified value	
Monitored functions		Phase sequence, phase failure, asymmetry	
Overload capability		see tolerance of power supply	
Input resistance		3 MΩ	
Asymmetry		5 % – 25 %, Off	
Environmental conditions			
Temperature range		-25 °C ... +60 °C	
Storage temperature range		-40 °C ... +70 °C	
Relative air humidity		5 % to 95 % acc. IEC 60721-3-3 Class 3K3	
Vibration resistance		2 – 13.2 Hz 1 mm 13.2 – 100 Hz 7 m/s ²	
Impact resistance		15 g 11 ms acc. IEC 60068-2-27	
Approvals		cULus	

Interface Technology · LCIS accessories

Labeling system
Labelling tabs 5 × 5 mm
20 rows of 10 tabs

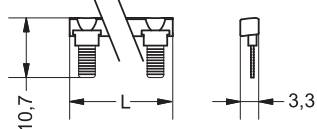


Description	Part-No.	Type	PU	
Labelling plates				
Color	white	716431 S*	LOCC-Box-BZW 7-6431	1
	red	716432 S*	LOCC-Box-BZR 7-6432	1
	blue	716433 S*	LOCC-Box-BZB 7-6433	1
	yellow	716434 A*	LOCC-Box-BZG 7-6434	1
General				
	716431	716432	716433	716434
Color	white	red	blue	yellow
Design	Frame with 20 strips à 10 signs			
Material	PA 6.6 (UL 94 V0, NNF I2, F2)			
Operation temperature range	-40 °C ... +80 °C			
Storage temperature range	-40 °C ... +80 °C			
Weight	– kg/piece			
Dimensions	5 × 5 mm			

Insulated jumper combs 2 to 16-pin white



Dimensions



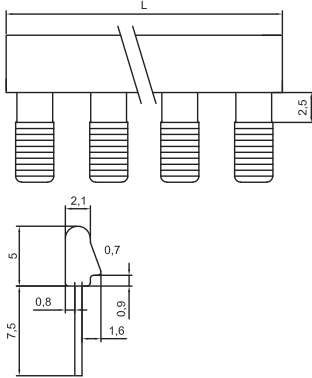
Description	Part-No.				Type	PU
Jumper comb						
Color	white	762803.1000	S*	LCIS-BKW-2-polig		10
	white	762813.1000	S*	LCIS-BKW-4-polig		10
	white	762823.1000	S*	LCIS-BKW-8-polig		10
	white	762833.1000	S*	LCIS-BKW-16-polig		10
General						
	762803.1000	762813.1000	762823.1000	762833.1000		
Pole number	2	4	8	16		
Connection device	plug-in					
Rated current	DC 6 A					
Contact design	Flat contact 0.5 mm Ribbing on the sides					
Pin spacing	6.2 mm					
Length	12.4 mm	24.8 mm	49.6 mm	99.2 mm		
Contact material	CuZn					
Material	Vectra C 1330					
Color	white					
Flamability according to UL 94	V0					
Operation temperature range	-40 °C ... +80 °C					
Storage temperature range	-40 °C ... +80 °C					
Weight	0.0005 kg/piece	0.001 kg/piece	0.002 kg/piece	0.004 kg/piece		

Interface Technology · Accessories

Insulated jumper combs 2 to 16-pin white



Dimensions

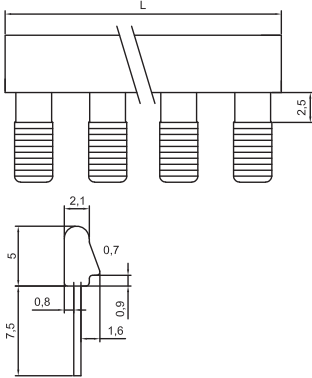


Description	Part-No.		Type	PU	
Jumper comb					
Color	white	762803	S*	BK 7-2803 WE 2-polig	10
	white	762806	S*	BK 7-2806 WE 3-polig	10
	white	762813	S*	BK 7-2813 WE 4-polig	10
	white	762823	S*	BK 7-2823 WE 8-polig	10
	white	762833	S*	BK 7-2833 WE 16polig	10
General					
	762803	762806	762813	762823	762833
Pole number	2	3	4	8	16
Connection device	plug-in				
Rated current	DC 6 A				
Contact design	Flat contact 0.5 mm Ribbing on the sides				
Pin spacing	6.2 mm				
Length	12.4 mm	18.6 mm	24.8 mm	49.6 mm	99.2 mm
Contact material	CuZn				
Material	Vectra C 1330				
Color	white				
Flamability according to UL 94	V0				
Operation temperature range	-40 °C ... +80 °C				
Storage temperature range	-40 °C ... +80 °C				
Weight	0.001 kg/piece	0.0015 kg/piece	0.002 kg/piece	0.003 kg/piece	0.004 kg/piece

Insulated jumper combs 2 to 16-pin red



Dimensions



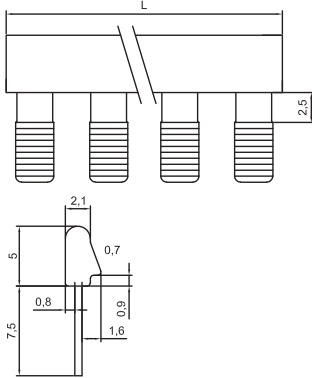
Description	Part-No.		Type	PU	
Jumper comb					
Color	red	762802	S*	BK 7-2802 rt 2-polig	10
	red	762805	S*	BK 7-2805 rt 3-polig	10
	red	762812	S*	BK 7-2812 rt 4-polig	10
	red	762822	S*	BK 7-2822 rt 8-polig	10
	red	762832	S*	BK 7-2832 rt 16polig	10
General					
	762802	762805	762812	762822	762832
Pole number	2	3	4	8	16
Connection device	plug-in				
Rated current	DC 6 A				
Contact design	Flat contact 0.5 mm Ribbing on the sides				
Pin spacing	6.2 mm				
Length	12.4 mm	18.6 mm	24.8 mm	49.6 mm	99.2 mm
Contact material	CuZn				
Material	Vectra C 1330				
Color	red				
Flamability according to UL 94	V0				
Operation temperature range	-40 °C ... +80 °C				
Storage temperature range	-40 °C ... +80 °C				
Weight	0.001 kg/piece	0.0015 kg/piece	0.002 kg/piece	0.003 kg/piece	0.004 kg/piece

Interface Technology · Accessories

Insulated jumper combs 2 to 16-pin blue



Dimensions



Description	Part-No.		Type	PU	
Jumper comb					
Color	blue	762804	S*	BK 7-2804 bl 2-polig	10
	blue	762807	S*	BK 7-2807 bl 3-polig	10
	blue	762814	S*	BK 7-2814 bl 4-polig	10
	blue	762824	S*	BK 7-2824 bl 8-polig	10
	blue	762834	S*	BK 7-2834 bl 16polig	10
General					
	762804	762807	762814	762824	762834
Pole number	2	3	4	8	16
Connection device	plug-in				
Rated current	DC 6 A				
Contact design	Flat contact 0.5 mm Ribbing on the sides				
Pin spacing	6.2 mm				
Length	12.4 mm	18.6 mm	24.8 mm	49.6 mm	99.2 mm
Contact material	CuZn				
Material	Vectra C 1330				
Color	blue				
Flamability according to UL 94	V0				
Operation temperature range	-40 °C ... +80 °C				
Storage temperature range	-40 °C ... +80 °C				
Weight	0.001 kg/piece	0.0015 kg/piece	0.002 kg/piece	0.003 kg/piece	0.004 kg/piece

Part number index

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750512.0000	23	762803	59						
750516.0000	24	762803.1000	58						
750517.0000	24	762804	61						
750518.0000	21	762805	60						
750519.0000	21	762806	59						
750528.0000	15	762807	61						
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750531.0000	18	762813	59						
750532.0000	18	762813.1000	58						
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