



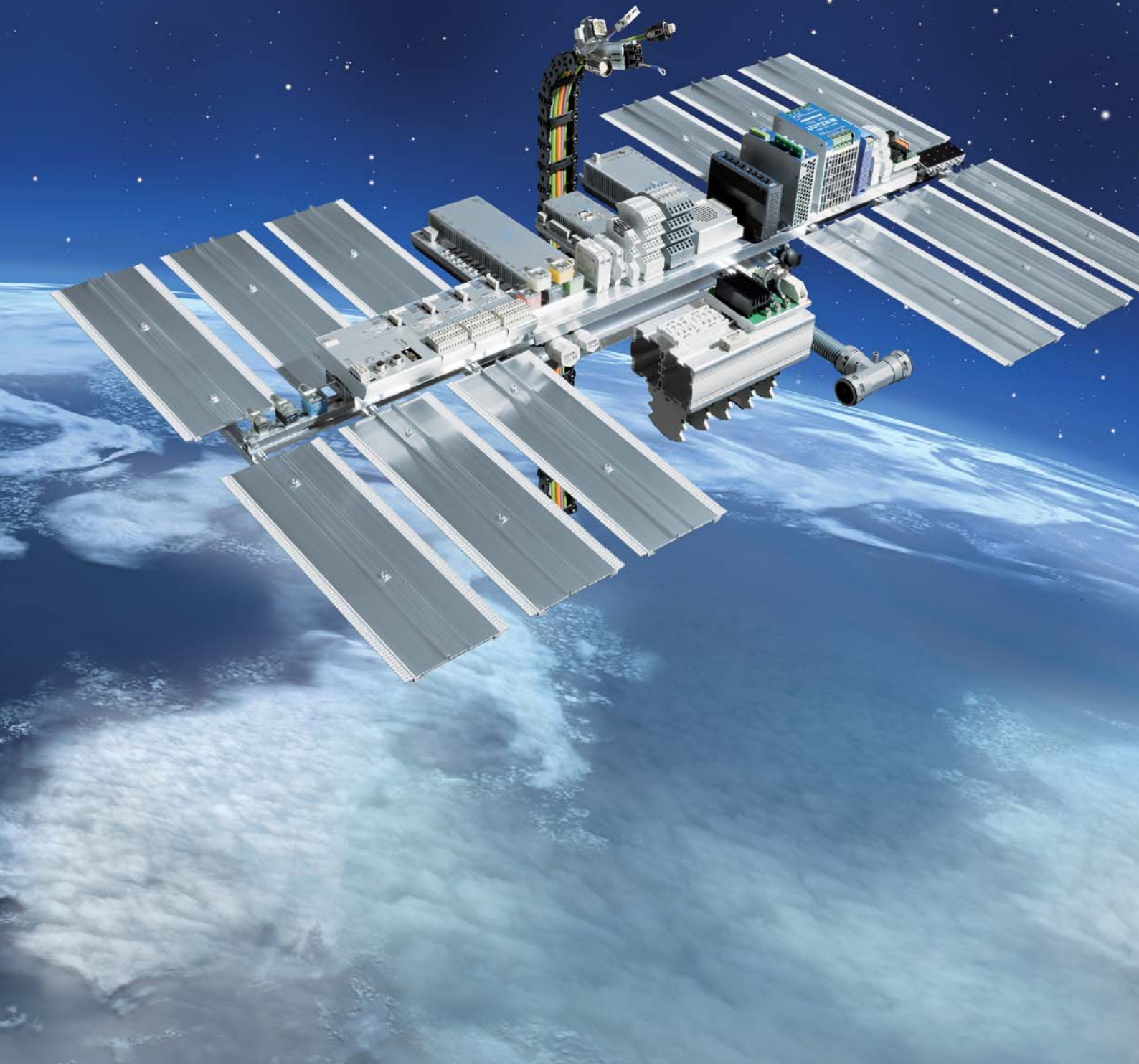
■ Control Solutions

LÜTZE Converters

LCIS Signal Converters
Microcompact Converters
LCON Converters

Efficiency in Automation

Cable • Connectivity • Cabinet • Control



Welcome to LÜTZE

Cable Solutions



Connectivity Solutions



Cabinet Solutions



Control Solutions



Transportation Solutions



LÜTZE - Efficiency in Automation

A tradition in automation for over 60 years, with countless pioneering achievements and patents, the LÜTZE INTERNATIONAL Group is today one of the leading companies in the automation industry. LÜTZE supplies very efficient electronic and electrotechnical components, system solutions for automation and high tech for rail engineering.

The comprehensive and coordinated supply program ranges from high flexing cables and cable assemblies, to energy efficient **AirSTREAM** wiring systems for control cabinets through to intelligent Industry 4.0 solutions from the fields of interface technology, current monitoring, power supply and Ethernet infrastructure.

The LÜTZE INTERNATIONAL Group has multiple locations throughout Europe, Asia and the USA and numerous distribution partners across the world to provide global product availability and service to our customers in all markets.

LÜTZE is one of the leading suppliers in the rail technology field. LÜTZE Transportation solutions are installed in numerous locomotives, city rail and underground rail systems, as well as high-speed trains across the world.



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.

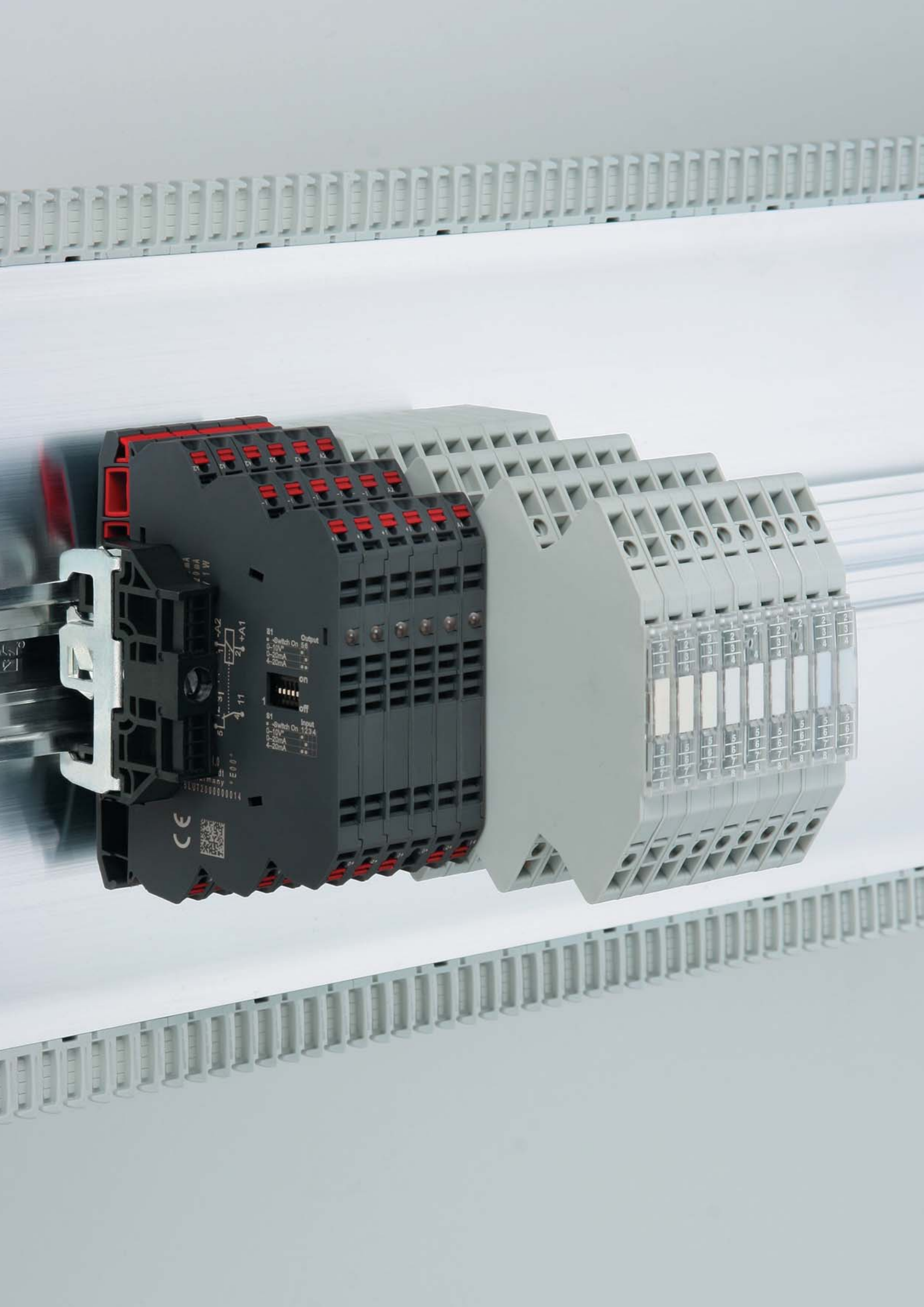
The people at LÜTZE are familiar with automation applications and technologies across all disciplines, as they are involved with our broad range of products comprising four product areas Cable, Connectivity, Cabinet and Control.



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.





LUTZE Converters · Product Overview

LCIS



Analog/analog converter passive transformers

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Analog/analog converter, active transformers

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Analog/analog converter, manual/auto signal converter

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Analog/analog converter, signal converter

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Potential/analog converter, active transformers

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Analog/analog converter, 0-60 mV transformers

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Temperature/analog converter, temperature converter

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Microcompact



Current/analog converter, signal converter

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LCON



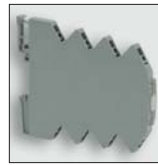
Analog/analog converter, interface converter

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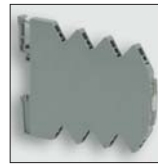
Temperature/analog converter, interface converter

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Analog/limit value switch, interface converter

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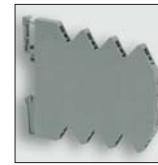
Temperature/limit switch, interface converter

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Analog/analog splitter, interface converter

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Analog/analog / limit value switch, interface converter

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Accessories



USB Service Cable

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Labeling system

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Insulated jumper combs - accessories LCIS

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Insulated jumper combs - accessories microcompact

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LUTZE Converters · 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:

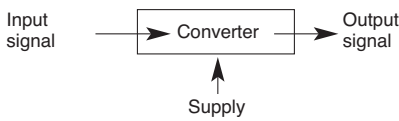


Figure : Schematic of a converter

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 effective value indicates the value at which the same electrical energy is implemented on an ohmic converter with an equivalent variable. 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 provides information about the load capacity of the output.

LUTZE Converters · Basics

The values for current output lie in a range of 400 Ω and 700 Ω, for voltage outputs they are 2 kΩ or higher.

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.

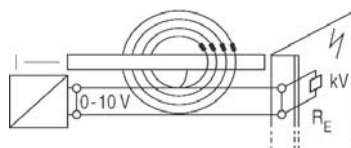


Figure: Electromagnetic interference

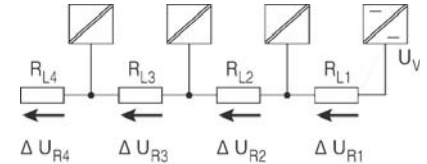
Potential differences

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.

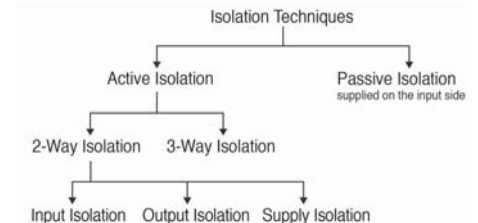


Diagram: Isolation techniques

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.

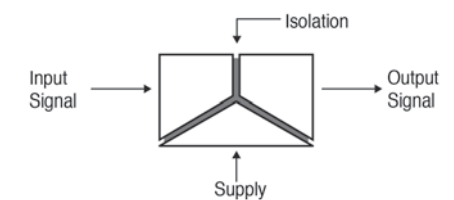


Diagram: 3-way isolation

LUTZE Converters · 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.

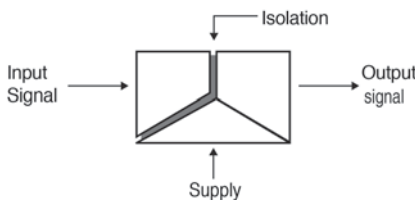


Figure: 2-way input isolation

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.

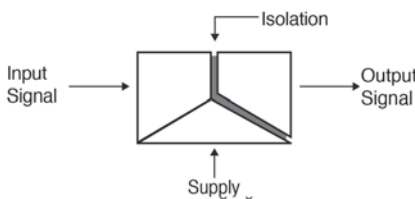


Figure: 2-way output isolation

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.

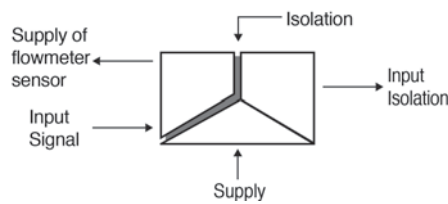


Figure: 2-way supply isolation

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 operation 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

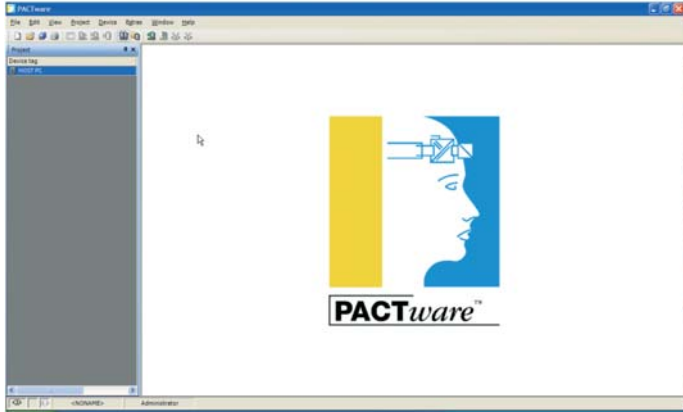
The Frame Application is a software program that implements Device DTMs and CommDTMs. The Frame Application provides:

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

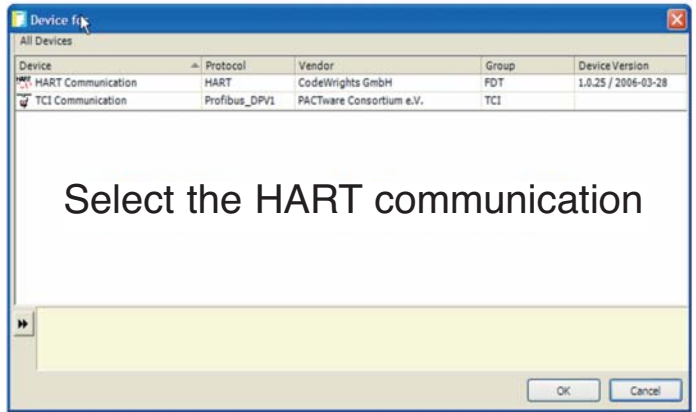


Open FDT Technology

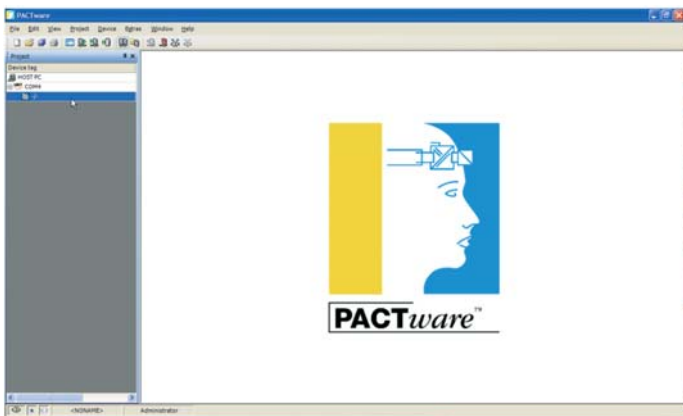
How to implement Lütze DTM's into **PACTware™**



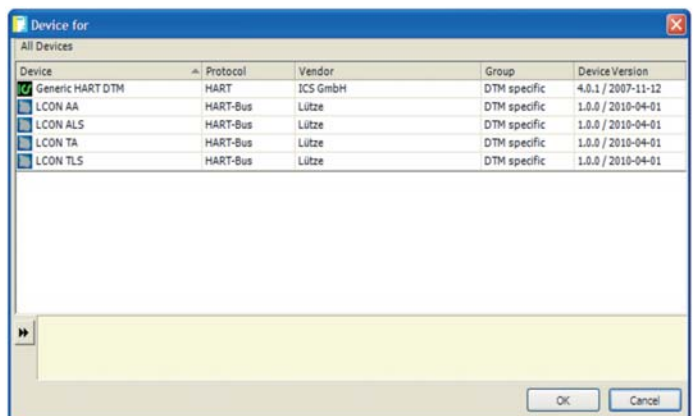
1. Add device



2. Select the communication channel



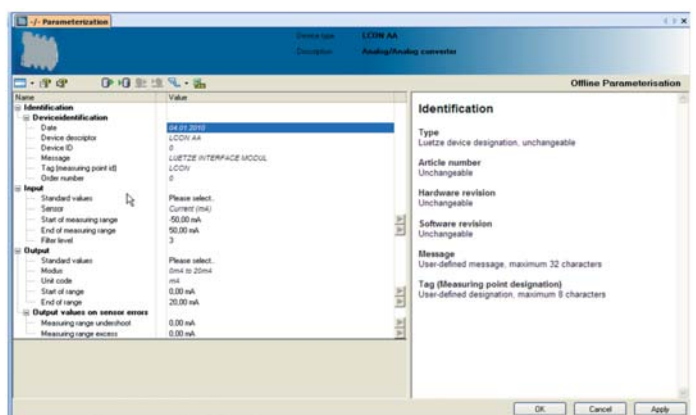
3. Again, add device



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

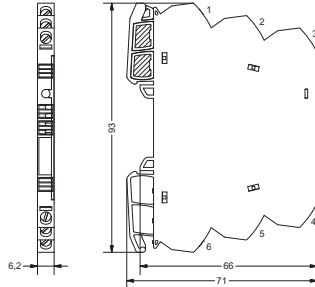
Input: 4–20 mA

Output: 4–20 mA

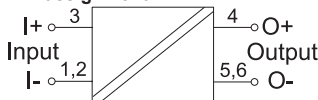
Insulation: 1.5 kV, 2-way isolation, passive converter



Dimensions



PIN assignment



Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	passive	750528.0000 A*	LCIS-P1K-0528-62-S	1
Push-In				
Rated voltage U_N	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 U_N		passive		
Status indication		–		
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 type	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		0.030 kg/piece		
Approvals		cULus (E135145), DNV GL		
Standards		EN 60947-5-1		
Failure Rate Prediction (MTBF)				
Standards		Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500		
Failure rate at +45 °C		127 fit		
Failure rate at +45 °C		7892161 h		
		1 fit equals one failure per 10 ⁹ component hours		
		The indicated temperature is the mean component ambient temperature.		
Comments		The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year		

Comments

When connected 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

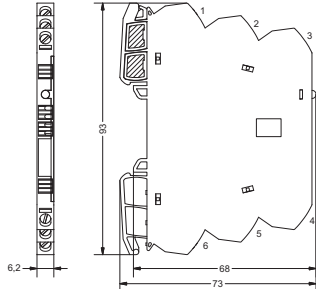
Input: 0–10 V / 0–20 mA / 4–20 mA

Output: 0–10 kHz

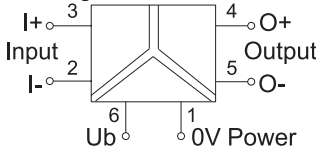
Insulation: 2.5 kV, 3-way isolation



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 U_N	AC/DC 24 V	750511.0000 R*	LCIS-WAF-0511-62-S	1
Push-In				
Rated voltage U_N	AC/DC 24 V	751511.0000 S*	LCIS-WAF-1511-62-PI	1
Input				
Input signal	750511.0000		751511.0000	
Input resistance	0–10 V, 0–20 mA, 4–20 mA, adjustable via DIP switch S1			
Galvanic isolation I/O	>300 k Ω @ 0–10 V, <100 Ω @ 0–20 mA, 4–20 mA			
Zero /Span	3-way isolation			
Production comparison	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 U_N	AC/DC 24 V			
Operation voltage range	AC 19.2–26.4 V / DC 18.0–31.2 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 type	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			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	667 fit			
Failure rate at +45 °C	1498305 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

Interface Technology · LCIS analog/analog converter

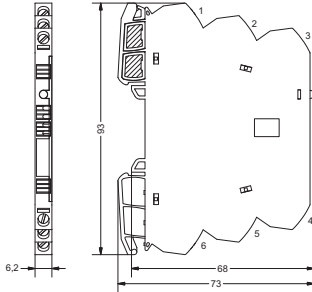
Input: 0–10 V / 0–20 mA / 4–20 mA

Output: 0–10 V / 0–20 mA / 4–20 mA

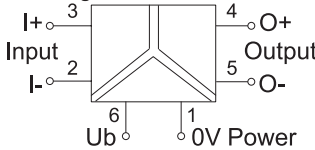
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

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

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

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	AC/DC 24 V	750539.0000 A*	LCIS-WAA-0539-62-S	1
Push-In				
Rated voltage U_N	AC/DC 24 V	751539.0000 S*	LCIS-WAA-1539-62-PI	1
Input				
Input signal	750539.0000		751539.0000	
Input resistance	0–10 V, 0–20 mA, 4–20 mA, adjustable via DIP switch S1			
Galvanic isolation I/O	>300 k Ω @ 0–10 V, <100 Ω @ 0–20 mA, 4–20 mA			
Zero /Span	3-way isolation			
Output	Production comparison			
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 k Ω @ 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 U_N	AC/DC 24 V			
Operation voltage range	AC 19.2–26.4 V / DC 18.0–31.2 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 type	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			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	531 fit			
Failure rate at +45 °C	1881921 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

Interface Technology · LCIS analog/analog converter

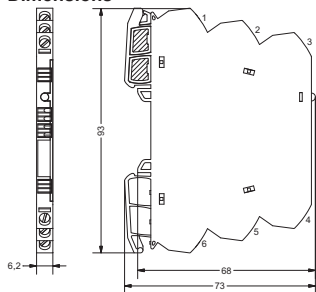
Input: 0–10 V

Output: 0–10 V / 0–20 mA / 4–20 mA

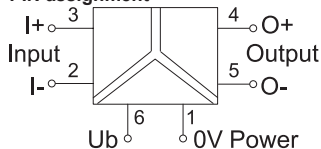
Insulation: 2.5 kV, 3-way isolation



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 U _N	AC/DC 24 V			
Operation voltage range	AC 19.2–26.4 V / DC 18.0–31.2 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 type	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 ... +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			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	504 fit			
Failure rate at +45 °C	1983891 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

Interface Technology · LCIS analog/analog converter

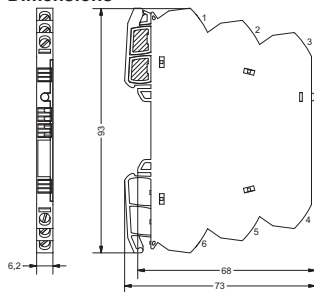
Input: 0–20 mA

Output: 0–10 V / 0–20 mA / 4–20 mA

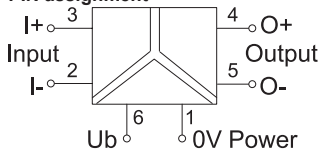
Insulation: 2.5 kV, 3-way isolation



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 U _N	AC/DC 24 V			
Operation voltage range	AC 19.2–26.4 V / DC 18.0–31.2 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 type	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 ... +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			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	504 fit			
Failure rate at +45 °C	1983891 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

Interface Technology · LCIS analog/analog converter

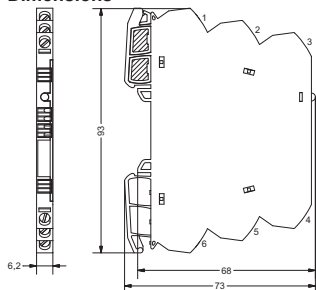
Input: 4–20 mA

Output: 0–10 V / 0–20 mA / 4–20 mA

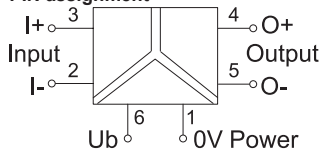
Insulation: 2.5 kV, 3-way isolation



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 U _N	AC/DC 24 V			
Operation voltage range	AC 19.2–26.4 V / DC 18.0–31.2 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 type	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			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	504 fit			
Failure rate at +45 °C	1983891 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

Interface Technology · LCIS analog/analog converter

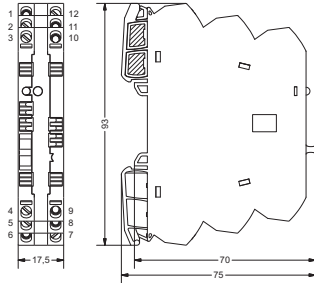
Input: 0–10 V / 0–20 mA / 4–20 mA, manual off automatic

Output: 0–10 V / 0–20 mA / 4–20 mA

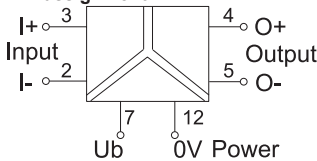
Insulation: 2,5 kV / 4 kV, 3-way isolation, Wide range input



Dimensions



PIN assignment



Range adjustment

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

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

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	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 U_N	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 k Ω @ 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 k Ω @ 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 19.2–26.4 V / DC 18.0–31.2 V	AC 19.2–264 V / DC 18.0–264 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 (EN 60715)	
Protection class	IP20	
Installation position	any	
Connection type	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	
Failure Rate Prediction (MTBF)		
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500	
Failure rate at +45 °C	724 fit	
Failure rate at +45 °C	1381278 h	
	1 fit equals one failure per 10 ⁹ component hours	

The indicated temperature is the mean component ambient temperature.

Comments

The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year

Interface Technology · LCIS analog/analog converter

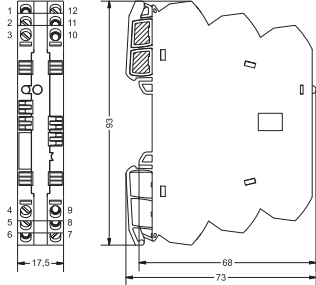
Input: 0–10 V / 0–20 mA / 4–20 mA

Output: 0–10 V / 0–20 mA / 4–20 mA

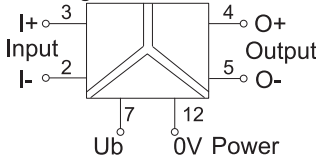
Insulation: 4 kV, 3-way isolation, Wide range input



Dimensions



PIN assignment



Range adjustment

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

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

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	AC/DC 24–240 V	750510.0000 R*	LCIS-WP-WAA-0510-175-S	1
Push-In				
Rated voltage U_N	AC/DC 24–240 V	751510.0000 S*	LCIS-WP-WAA-1510-175-PI	1
Input				
Input signal	750510.0000	751510.0000		
Input signal	0–10 V, 0–20 mA, 4–20 mA, adjustable via DIP switch S1			
Input resistance	>300 k Ω @ 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 k Ω @ 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 U_N	AC/DC 24–240 V			
Operation voltage range	AC 19.2–264 V / DC 18.0–264 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 type	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			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	667 fit			
Failure rate at +45 °C	1498305 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

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

Interface Technology · LCIS analog/analog converter

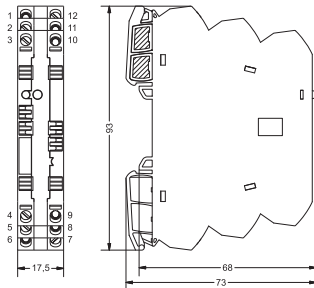
Input: 0–10 V / 0–20 mA / 4–20 mA

Output: 0–10 kHz

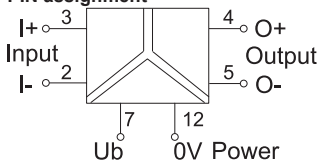
Insulation: 4 kV, 3-way isolation, Wide range input



Dimensions



PIN assignment



Range adjustment

S1	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 U_N	AC/DC 24–240 V	750512.0000 R*	LCIS-WP-WAF-0512-175-S	1
Push-In				
Rated voltage U_N	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 k Ω @ 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 U_N	AC/DC 24–240 V			
Operation voltage range	AC 19.2–264 V / DC 18.0–264 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 type	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			
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			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	724 fit			
Failure rate at +45 °C	1381278 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

Interface Technology · LCIS analog/analog converter

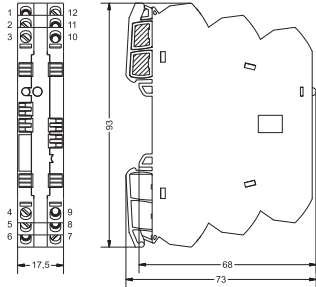
Input: 16 selectable ranges

Output: 0–10 V / 0–20 mA / 4–20 mA

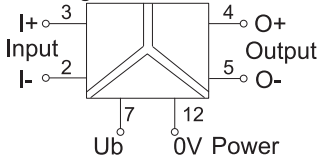
Insulation: 2.5 kV / 4 kV, 3-way isolation, Wide range input



Dimensions



PIN assignment



Range adjustment

S1	Input	1	2	3	4
● → Switch On					
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	Output	5	6
● → Switch On			
0–10 V*		●	
0–20 mA		●	
4–20 mA		●	●

Description	Part-No.	Type	PU
Screw terminal			
Rated voltage U_N	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 U_N	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 k Ω @ 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 k Ω @ 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 19.2–26.4 V / DC 18.0–31.2 V		AC 19.2–264 V / DC 18.0–264 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 (EN 60715)		
Protection class	IP20		
Installation position	any		
Connection type	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		
Failure Rate Prediction (MTBF)			
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500		
Failure rate at +45 °C	681 fit		
Failure rate at +45 °C	1468511 h		
	1 fit equals one failure per 10 ⁹ component hours		
	The indicated temperature is the mean component ambient temperature.		
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year		

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

Interface Technology · LCIS analog/analog converter

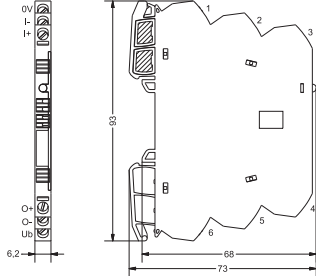
Output: 0–60 mV

Output: 0–10 V / 0–20 mA / 4–20 mA

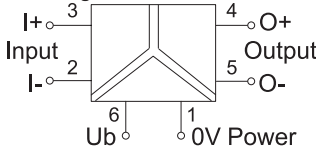
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

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

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

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	AC/DC 24 V	750901.0000 R*	LCIS-WAA-0901-62-S	1
Push-In				
Rated voltage U_N	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 Input		Oversvoltage 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%)		approx. 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 U_N		AC/DC 24 V		
Rated current		approx. 22 mA @ AC 24 V / approx. 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 type		Screwed terminal single wire 0.25 mm ² –2.5 mm ² / 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		
Standards		EN 60947-5-1		
Failure Rate Prediction (MTBF)				
Standards		Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500		
Failure rate at +45 °C		566 fit		
Failure rate at +45 °C		1765795 h		
		1 fit equals one failure per 10 ⁹ component hours		
		The indicated temperature is the mean component ambient temperature.		
Comments		The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year		

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

Interface Technology · LCIS temperature/analog converter

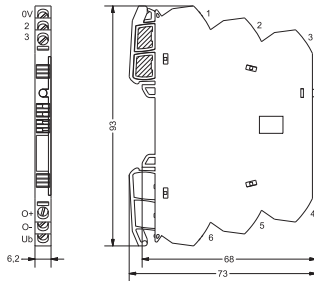
Input: PT100, 2-wire

Output: 0–10 V / 0–20 mA / 4–20 mA

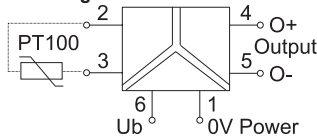
Insulation: 2.5 kV, 3-way isolation



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	● ● ●

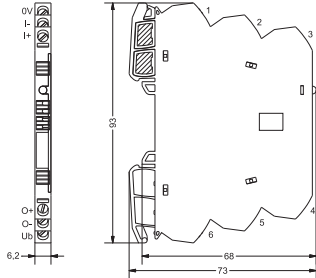
Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	AC/DC 24 V	750809.0000 R*	LCIS-WPT2LA-0809-62-S	1
Push-In				
Rated voltage U_N	AC/DC 24 V	751809.0000 S*	LCIS-WPT2LA-1809-62-PI	1
Input	750809.0000	751809.0000		
Input variable	Temperature sensor PT100			
Galvanic isolation I/O	3-way 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 Input	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%)	approx. 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 U_N	AC/DC 24 V			
Rated current	approx. 22 mA @ AC 24 V / approx. 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 type	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			
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			
Standards	EN 60947-5-1			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	566 fit			
Failure rate at +45 °C	1765795 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

Interface Technology · LCIS temperature/analog converter

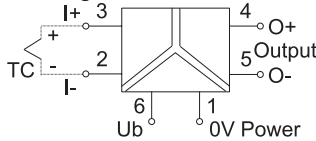
Input: Thermal elements J, K
Output: 0–10 V / 0–20 mA / 4–20 mA
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

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

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

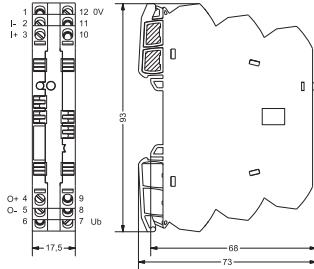
Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	AC/DC 24 V	750839.0000 R*	LCIS-WTCA-0839-62-S	1
Push-In				
Rated voltage U_N	AC/DC 24 V	751839.0000 S*	LCIS-WTCA-1839-62-PI	1
Input	750839.0000	751839.0000		
Input variable	Thermo voltage, element J or K (DIN/IEC 584-1)			
Galvanic isolation 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 Input	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%)	approx. 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 U_N	AC/DC 24 V			
Rated current	approx. 22 mA @ AC 24 V / approx. 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 type	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			
Standards	EN 60947-5-1			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	566 fit			
Failure rate at +45 °C	1765795 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

Interface Technology · LCIS temperature/analog converter

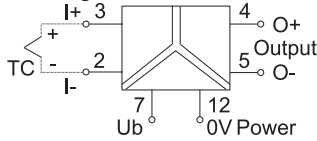
Input: Thermal elements J, K
Output: 0–10 V / 0–20 mA / 4–20 mA
Insulation: 4.0 kV, 3-way isolation



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 U_N	AC/DC 24–240 V	750847.0000 R*	LCIS-WP-WTCA-0847-175-S	1
Push-In				
Rated voltage U_N	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 Input	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%)	approx. 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 U_N	AC/DC 24–240 V			
Rated current	appr. 22 mA @ AC 24 V / appr. 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 type	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			
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			
Standards	EN 60947-5-1			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	700 fit			
Failure rate at +45 °C	1428555 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

Interface Technology · Microcompact current/analog converter

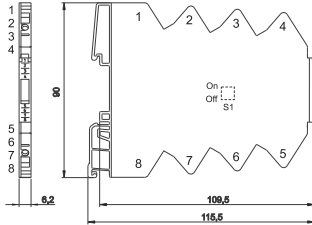
Input: AC/DC 0 – 1 A

Output: 0 – 10 V / 0 – 20 mA / 4 – 20 mA - adjustable

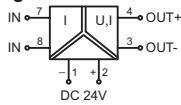
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

● → Switch On		S1			
Input	Output	1	2	3	4
0-1A	0-10V				
0-1A	0-20mA	●			
0-1A	4-20mA	●			

Description	Part-No.	Type	PU
Screw terminal			
Rated voltage U_N	DC 24 V	750540 S*	WAA 7-0540
Spring terminal			1

Input	750540
Input variable	Single analog signal
Input signal	AC/DC 0–1 A, ± 1 A
Galvanic isolation I/O	3-way isolation
Input resistance	typ. 0.06 Ω

Output	
Output variable	0 – 10 V, 0 – 20 mA, 4 – 20 mA
Output signal	adjustable via DIP switch S1
Max. load impedance at I-output	400 Ω
Output current	max. 21 mA
Residual ripple	<5 mV _{eff}

Operating data	
Accuracy	0.5 % FSR @ 23 °C
Linearity error	0.1 % FSR @ 23 °C
Build-up time (Accuracy 1%)	150 ms

General	
Rated voltage U_N	DC 24 V
Operation voltage range	DC 16.8–30 V
Status indication	LED yellow
Insulation voltage input / output	2.5 kV _{eff}
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)
Color of the housing	light grey
Mounting	DIN rail mountable TS35 (EN 60715)
Protection class	IP20
Installation position	any
Connection type	Screw terminal
Operation temperature range	-25 °C ... +60 °C
Storage temperature range	-40 °C ... +85 °C
Dimensions (w × h × d)	6.2 × 90.0 × 115.5 mm
Weight	0.055 kg/piece
Approvals	cULus, Cl.1 Div2, Gr. A, B, C, D, T4A

Failure Rate Prediction (MTBF)	
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500
Failure rate at +45 °C	639 fit
Failure rate at +45 °C	1564896 h

1 fit equals one failure per 10⁹ component hours

The indicated temperature is the mean component ambient temperature.

Comments	
	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year

Interface Technology · Microcompact current/analogue converter

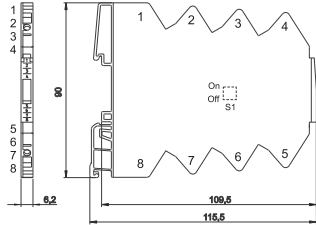
Input: AC/DC 0 – 5 A

Output: 0 – 10 V / 0 – 20 mA / 4 – 20 mA - adjustable

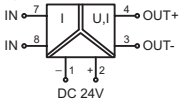
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

● → Switch On		S1			
Input	Output	1	2	3	4
0-5A	0-10V				
0-5A	0-20mA	●			
0-5A	4-20mA		●		

Description	Part-No.	Type	PU
Screw terminal			
Rated voltage U_N	DC 24 V	750541 S*	WAA 7-0541
Spring terminal			
Rated voltage U_N	DC 24 V	751541 A*	WAA 7-1541
Input			
	750541		751541
Input variable	Single analogue signal		
Input signal	AC/DC 0–5 A, ± 5 A		
Galvanic isolation I/O	3-way isolation		
Input resistance	typ. 0.02 Ω		
Output			
Output variable	0 – 10 V, 0 – 20 mA, 4 – 20 mA		
Output signal	adjustable via DIP switch S1		
Max. load impedance at I-output	400 Ω		
Output current	max. 21 mA		
Residual ripple	<5 mV _{eff}		
Operating data			
Accuracy	0.5 % FSR @ 23 °C		
Linearity error	0.1 % FSR @ 23 °C		
Build-up time (Accuracy 1%)	150 ms		
General			
Rated voltage U_N	DC 24 V		
Operation voltage range	DC 16.8–30 V		
Status indication	LED yellow		
Insulation voltage input / output	2.5 kV _{eff}		
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)		
Color of the housing	light grey		
Mounting	DIN rail mountable TS35 (EN 60715)		
Protection class	IP20		
Installation position	any		
Connection type	Screw terminal	Spring terminal	
Operation temperature range	-25 °C ... +60 °C		
Storage temperature range	-40 °C ... +85 °C		
Dimensions (w × h × d)	6.2 × 90.0 × 115.5 mm		
Weight	0.055 kg/piece		
Approvals	cULus, Cl.1 Div2, Gr. A, B, C, D, T4A		
Failure Rate Prediction (MTBF)			
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500		
Failure rate at +45 °C	639 fit		
Failure rate at +45 °C	1564896 h		
1 fit equals one failure per 10 ⁹ component hours			
The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year		

Interface Technology · Microcompact current/analogue converter

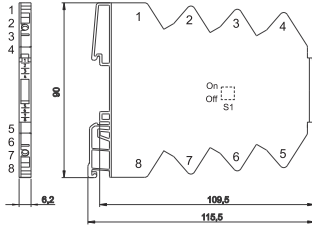
Input: AC/DC 0 – 10 A

Output: 0 – 10 V / 0 – 20 mA / 4 – 20 mA - adjustable

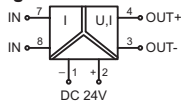
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

		S1			
Input	Output	1	2	3	4
0-10A	0-10V				
0-10A	0-20mA	●			
0-10A	4-20mA		●		

Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	DC 24 V	750542 A*	WAA 7-0542	1
Spring terminal				
Rated voltage U_N	DC 24 V	751542 S*	WAA 7-1542	1
Input				
Input variable	750542	751542		
Input signal	Single analogue signal			
Galvanic isolation I/O	AC/DC 0–10 A, + 10 A			
Input resistance	3-way isolation			
	typ. 0.02 Ω			
Output				
Output variable	0 – 10 V, 0 – 20 mA, 4 – 20 mA			
Output signal	adjustable via DIP switch S1			
Max. load impedance at I-output	400 Ω			
Output current	max. 21 mA			
Residual ripple	<5 mV _{eff}			
Operating data				
Accuracy	0.5 % FSR @ 23 °C			
Linearity error	0.1 % FSR @ 23 °C			
Build-up time (Accuracy 1%)	150 ms			
General				
Rated voltage U_N	DC 24 V			
Operation voltage range	DC 16.8–30 V			
Status indication	LED yellow			
Insulation voltage input / output	2.5 kV _{eff}			
Housing material	PA 6.6 (UL 94 V-0, NFF I2, F2)			
Color of the housing	light grey			
Mounting	DIN rail mountable TS35 (EN 60715)			
Protection class	IP20			
Installation position	any			
Connection type	Screw terminal	Spring terminal		
Operation temperature range	-25 °C ... +60 °C			
Storage temperature range	-40 °C ... +85 °C			
Dimensions (w × h × d)	6.2 × 90.0 × 116.5 mm			
Weight	0.055 kg/piece			
Approvals	cULus, Cl.1 Div2, Gr. A, B, C, D, T4A			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	643 fit			
Failure rate at +45 °C	1555162 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year			

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 1,5 ms response time for AC signal transmission

High load impedance

All current outputs are qualified for 700 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

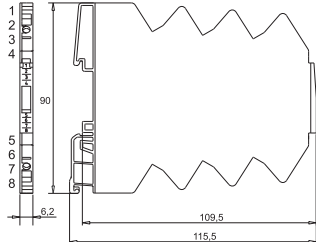
Input: ± 30 V, ± 50 mA, $\pm DC$ 5 A adjustable

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

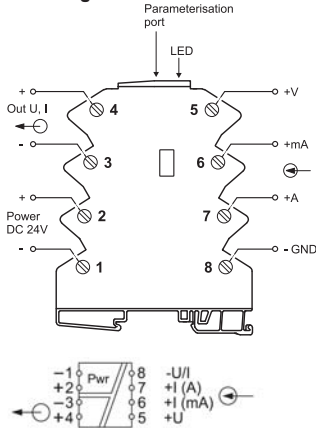
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

Range*	S1 → Switch On					Range*	S1 → Switch On				
	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 U_N	DC 24 V	750320 R*	LCON AA DFDT 806210	1
Spring terminal				
Rated voltage U_N	DC 24 V	751320 S*	LCON AA DFDT 806211	1

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 k Ω @ +30/-30 V, <30 Ω @ +50/-50 mA, 10 m Ω @ 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 k Ω @ 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 signal/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 mA 0.5 % FSR @ +5 A/-5 A
Linearity error	± 0.05 % FSR @ +30/-30 V, +50/-50 mA ± 0.1 % FSR @ +5 A/-5 A

General	
Rated voltage U_N	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 type	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²
Resolution	16-bit
Temperature compensation internally	–
Configuration	Switch and software: FDT / DTM
Temperature error	<100 ppm/K 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

Failure Rate Prediction (MTBF)	
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500
Failure rate at +45 °C	607 fit
Failure rate at +45 °C	1647753 h
	1 fit equals one failure per 10 ⁹ component hours

Comments	
	The indicated temperature is the mean component ambient temperature.
	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances

Comments	
NOTE:	The device can be configured using the DIP switches on the side or using the accessory LCON ZB service cable (Item no. 750894).

Interface Technology · Microcompact temp./analog converter

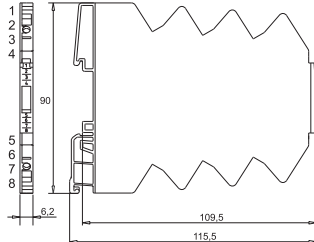
Input: PT, thermocouple, potentiometer – adjustable temperature converter

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

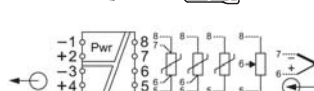
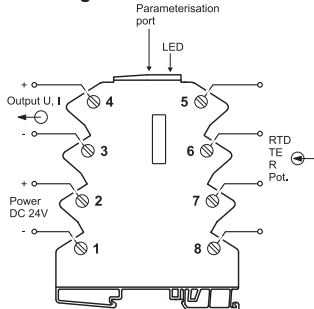
Insulation: 2.5 kV, 3-way isolation



Dimensions



PIN assignment



Range adjustment

Range*	S1	S2
Start	7 8 1 2	End 3 4 5 6 7 8
-200°C	●	0°C
-150°C	●	50°C
-100°C	●	100°C
-50°C	●	150°C
0°C	●	200°C
Sensor*	S1 1 2 3	250°C
PH100	●	300°C
Pt1000	●	350°C
TE J	●	400°C
TE K	●	450°C
Pot. %	●	500°C
Output*	S1 4 5 6	600°C
0–20mA	●	650°C
4–20mA	●	700°C
0–10V	●	750°C
±10V	●	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 U_N	DC 24 V	750340 R*	LCON TA DFDT 806210	1
Spring terminal				
Rated voltage U_N	DC 24 V	751340 S*	LCON TA DFDT 806211	1
Input				
Measurement input	PT100, PT1000, resistencia, potenciómetro 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: -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: 0.002–0.6 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			
Residual ripple	–			
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 signal/output current	10.5 V @ 0–10 V, -10–10 V 21 mA @ 0–20 mA, 4–20 mA			
Operating data				
Accuracy	PT: 10 K, dividido por el rango de medida configurado (K) + 0.2 % FSR Thermocouples: 10 K, divided by the set measurement range (K) + 0.4 % FSR			
Linearity error	±0.1 % FSR			
General				
Rated voltage U_N	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 type	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²			
Resolution	16-bit			
Temperature compensation internally	Thermal elements: type ±1 K, max. ±2 K			
Configuration	Switch and software: FDT / DTM			
Temperature error	<100 ppm/K 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), Cl.1 Div2, Gr. A, B, C, D, T4A, GL			
Standards	EN 60947-5-1			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	678 fit			
Failure rate at +45 °C	1474689 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances			
Comments				
NOTE: The device can be configured using the DIP switches on the side or using the accessory LCON ZB service cable (Item no. 750894).				

Interface Technology · Microcompact analog/limit value switch

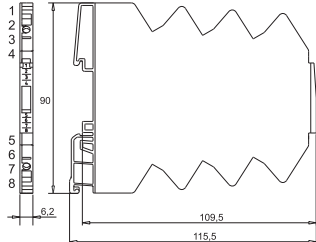
Input: ± 30 V, ± 50 mA, ± 5 A adjustable – adjustable limit value switch

Output: Semiconductor NO contact

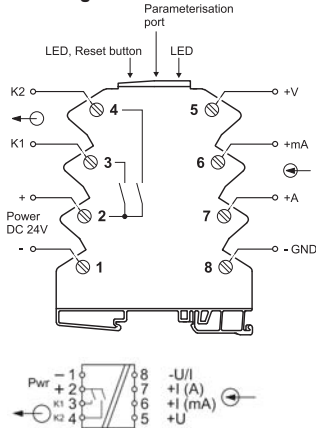
Insulation: 2.5 kV, 2-way isolation



Dimensions



PIN assignment



Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	DC 24 V	750360 R*	LCON ALS FDT 806210	1
Spring terminal				
Rated voltage U_N	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 k Ω @ +30/-30 V, <30 Ω @ +50/-50 mA, 10 m Ω @ 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, not short circuit protected
Status display output	LED yellow K1 and LED yellow K2
Operating mode	Limit value, window, alarm output / additionally adjustable: Hysteresis, input / output delay

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

General	
Rated voltage U_N	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 type	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²
Resolution	16-bit
Temperature compensation internally	–
Configuration	Software: FDT / DTM
Temperature error	<100 ppm/K 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), Cl.1 Div2, Gr. A, B, C, D, T4A, GL
Standards	EN 60947-5-1

Failure Rate Prediction (MTBF)	
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500
Failure rate at +45 °C	435 fit
Failure rate at +45 °C	2298502 h
	1 fit equals one failure per 10 ⁹ component hours

The indicated temperature is the mean component ambient temperature.
 Comments The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances

Comments
 NOTE: The device can be configured using the DIP switches on the side or using the accessory LCON ZB service cable (Item no. 750894).

Interface Technology · Microcompact temp./limit value switch

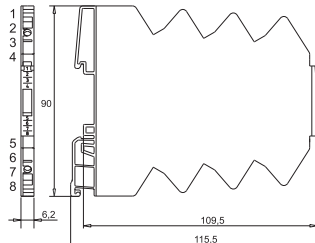
Input: PT, thermocouple, potentiometer – adjustable temperature converter

Output: Semiconductor NO contact

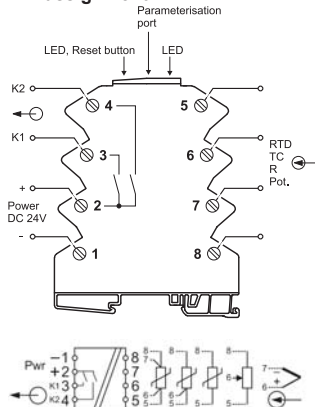
Insulation: 2.5 kV, 2-way isolation



Dimensions



PIN assignment



Description	Part-No.	Type	PU	
Screw terminal				
Rated voltage U_N	DC 24 V	750370 R*	LCON TLS FDT 806210	1
Spring terminal				
Rated voltage U_N	DC 24 V	751370 S*	LCON TLS FDT 806211	1
Input				
Measurement input	PT100, PT1000, resistencia, potenciómetro 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: -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: 0.002–0.6 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, not short circuit protected			
Status display output	LED yellow K1 and LED yellow K2			
Operating mode	Limit value, window, alarm output / additionally adjustable: Hysteresis, input / output delay			
Operating data				
Linearity error	±0.1 % FSR			
Accuracy	PT: 10 K, divided by the set measurement range (K) + 0.2 % FSR Thermocouples: 10 K, divided by the set measurement range (K) + 0.4 % FSR			
General				
Rated voltage U_N	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 type	Screw terminal 0.14 mm ² – 1.5 mm ² Spring terminal 0.14 mm ² – 1.5 mm ²			
Resolution	16-bit			
Temperature compensation internally	Thermal elements: type ±1 K, max. ±2 K			
Configuration	Software: FDT / DTM			
Temperature error	<100 ppm/K FSR			
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			
Failure Rate Prediction (MTBF)				
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500			
Failure rate at +45 °C	480 fit			
Failure rate at +45 °C	2081733 h			
	1 fit equals one failure per 10 ⁹ component hours			
	The indicated temperature is the mean component ambient temperature.			
Comments	The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances			
Comments				
NOTE: The device can be configured using the DIP switches on the side or using the accessory LCON ZB service cable (Item no. 750894).				

Interface Technology · Microcompact analog/analog splitter

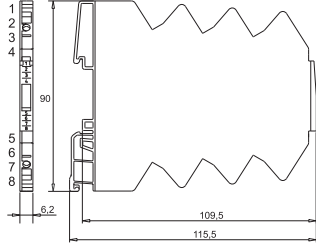
Input: 0–10 V, 0–20 mA, 4–20 mA adjustable

Output: 2 × 0–10 V, 0–20 mA, 4–20 mA

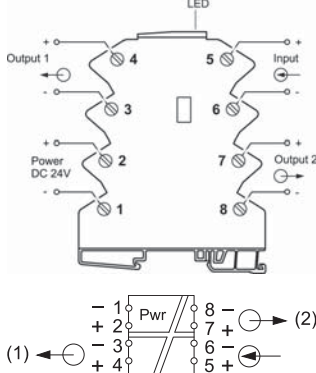
Insulation: 2.5 kV, 4-way isolation



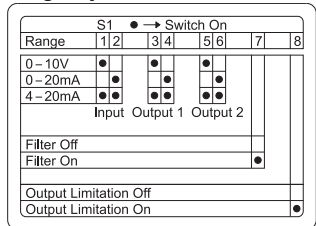
Dimensions



PIN assignment



Range adjustment



See instruction leaflet for details

Description	Part-No.	Type	PU
Screw terminal			
Rated voltage U_N	DC 24 V	750321 R*	LCON AASP D 806210
Spring terminal			
Rated voltage U_N	DC 24 V	751321 S*	LCON AASP D 806211

Input	
Measurement input	0–10 V, 0–20 mA, 4–20 mA adjustable via switch
Galvanic isolation I/O	4-way isolation
Critical frequency	100 Hz (filter off), 5 Hz (filter on)
Input resistance	>500 k Ω @ 0–10 V, <100 Ω @ 0–20 mA, <100 Ω @ 4–20 mA
Zero /Span	Production comparison

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	–
Limitation for exceeding measurement range	yes, switchable
max. modulation range/output signal/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 @ 23 °C
Linearity error	\pm 0.1 % FSR

General	
Rated voltage U_N	DC 24 V
Operation voltage range	16.8–30 V
Rated current	13 mA
Status indication	LED green/red
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output
Connection type	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/K 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) in preparation, Cl.1 Div2, Gr. A, B, C, D, T4A (E319134) in preparation, GL
Standards	EN 60947-5-1

Failure Rate Prediction (MTBF)	
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500

Failure rate at +45 °C	663 fit
Failure rate at +45 °C	1509179 h
	1 fit equals one failure per 10 ⁹ component hours

Comments	The indicated temperature is the mean component ambient temperature. The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year
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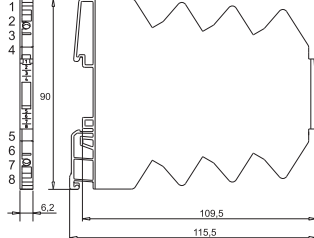
Comments
NOTE: The device can be configured using the DIP switches on the side or using the accessory LCON ZB service cable (Item no. 750894).

Interface Technology · Microcompact analog/limit value switch

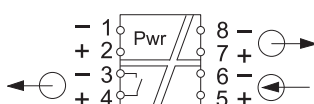
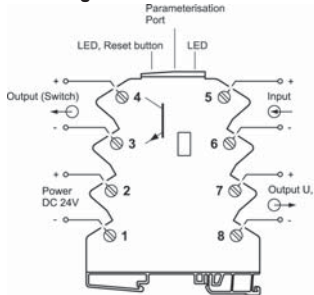
Input/output: 0–10 V, 0–20 mA, 4–20 mA, 2–10 mA, 0–5 V, 1–5 V, 2–10 V adjustable
Output: switching transistor DC 30 V/100 mA adjustable (LiveZero)
Insulation: 2.5 kV, 4-way isolation



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 U_N	DC 24 V	750322 R*	LCON AALS DFDT 806210
Spring terminal			
Rated voltage U_N	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–650 ms (adjustable by means of filter stage 1–5, default: 150 ms)
Step response (10–90%)	10 ms – 800 ms (adjustable by means of filter stage 1–5, default: 150 ms)
Input resistance	>500 k Ω @ 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	–
Limitation for exceeding measurement range	yes, switchable
max. modulation range/output signal/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 not 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 @ 23 °C
Linearity error	\pm 0.1 % FSR

General	
Rated voltage U_N	DC 24 V
Operation voltage range	16.8–30 V
Rated current	13 mA
Status indication	LED green/red
Input/output protection	Overvoltage, current input with PTC fuse, short circuit-proof output
Connection type	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	<100 ppm/K 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	0.050 kg/piece
Approvals	cULus (E135145) in preparation, Cl.1 Div2, Gr. A, B, C, D, T4A (E319134) in preparation, GL
Standards	EN 60947-5-1

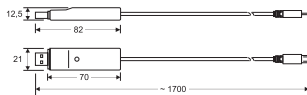
Failure Rate Prediction (MTBF)	
Standards	Electronic components – Reliability – Reference conditions for failure rates and stress models for conversion: EN/IEC 61709 Failure Rates of Components – Expected values: SN 29500
Failure rate at +45 °C	598 fit
Failure rate at +45 °C	1671386 h
	1 fit equals one failure per 10 ⁹ component hours

The indicated temperature is the mean component ambient temperature.
 Comments The results are valid under following conditions: Automotive environment or industrial areas without extreme dust levels and harmful substances Continuous operation 8760 h per year

Comments
 NOTE: The device can be configured using the DIP switches on the side or using the accessory LCON ZB service cable (Item no. 750894).

Mounting Accessories

USB Service cable



Properties

- USB interface cable for parameterization of FDT/DTM capable LCON converters, time relays, etc.

Technical data

Status indication	LED green - status operation
Housing material	ABS
Color of the housing	transparent
Connection type	USB A – Micro USB
Operation temperature range	0 °C ... +40 °C
Storage temperature range	-25 °C ... +50 °C
Dimensions (w × h × d)	82.0 × 12.5 × 21.0 mm
Cable length	1.7 m
Weight	0.047 kg/piece

Part-No.	Type		PU piece
750894	S* LCON ZB USB	USB data cable for parameterization	1

Interface Technology · LCIS accessories

Labeling system

200 Labeling tabs 5 × 5 mm

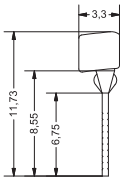
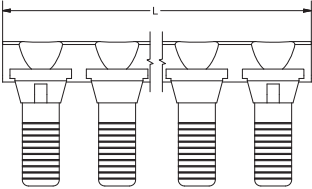


Description	Part-No.	Type	PU	
Labelling plates				
Color	white	716431 S*	LOCC-Box-BZW 7-6431	1
	red	716432 S*	LOCC-Box-BZR 7-6432	1
	blue	716433 S*	LOCC-Box-BZB 7-6433	1
	yellow	716434 A*	LOCC-Box-BZG 7-6434	1
General				
	716431	716432	716433	716434
Color	white	red	blue	yellow
Design	200 tabs			
Material	PA 6.6 (UL 94 V0, NNF I2, F2)			
Operation temperature range	-40 °C ... +80 °C			
Storage temperature range	-40 °C ... +80 °C			
Weight	0.010 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

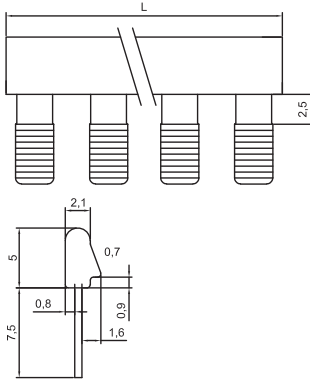
General	762803.1000	762813.1000	762823.1000	762833.1000
Pole number	2	4	8	16
Connection type	plug-in			
Rated current	DC 6 A			
Contact design	Flat contact 0.5 mm Ribbing on the sides			
Pin spacing	6.2 mm			
Length	12.4 mm	24.8 mm	49.6 mm	99.2 mm
Contact material	CuZn			
Material	Frianyl A3 RV0			
Color	white			
Flamability according to UL 94	V0			
Operation temperature range	-40 °C ... +80 °C			
Storage temperature range	-40 °C ... +80 °C			
Weight	0.011 kg/piece			

Interface Technology · Microcompact 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 type	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 C130				
Color	white				
Flamability according to UL 94	V0				
Operation temperature range	-40 °C ... +80 °C				
Storage temperature range	-40 °C ... +80 °C				
Weight	0.0006 kg/ piece	0.0008 kg/ piece	0.0011 kg/ piece	0.0022 kg/ piece	0.0044 kg/ piece

Part number index

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750320	38	751819.0000	28						
750321	42	751839.0000	30						
750322	43	751847.0000	31						
750340	39	751848.0000	32						
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750370	41	762803	47						
750510.0000	22	762803.1000	46						
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750517.0000	24	762823	47						
750518.0000	21	762823.1000	46						
750519.0000	21	762833	47						
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Notes

Notes

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