

# PMA CI 45

## Universal transmitter

### Overview

UNIFLEX CI 45 transmitters are designed to give precise and cost-effective signal detection and processing tasks.

Every CI 45 has at least one universal input, one universal output and a relay.

Optionally, the transmitter can be fitted with an additional relay, with a second universal input and counter or frequency input. The voltage output can also be used as frequency output.

Galvanic isolation is provided between inputs and outputs as well as from the supply voltage and the communication interfaces.

### Key Features

- Compact design, only 22,5 mm wide
- Clips onto top-hat DIN rail
- Plug-in screw terminals or spring-clamp connectors
- Dual-line LC display with additional display elements
- Process values always in view
- Convenient 3-key operation
- Direct communication between mounted transmitters, fieldbus connections via bus coupler
- Up to two universal inputs with high signal resolution (>15 bits)
- Universal output with high resolution (14 bits) as combined voltage/current output
- One or two relay outputs
- Combined counter or frequency input, frequency output
- Quick response; only 100 ms
- Customer-specific linearization
- Measurement value correction (offset or 2-point)
- Min/max indicator ('slave pointer')
- Logical linking of digital outputs, e.g. for common alarms

### Description

#### Mounting

The compact CI 45 is clipped onto a top-hat DIN rail and can also be unmounted very simply.

All connections are of the plug-in type, so that a transmitter can be replaced very quickly without disturbing the wiring.

#### Display and operation

The two-line LC display permits simultaneous indication of the measured value and all of the unit's operating functions.

Moreover, a LED and 4 other display elements give a reliable indication of operating status, operating mode, and error messages.

The user-configurable engineering unit of the measured value can be included in the display. By means of the extended Operating Level, it is possible to show any signal or parameter in the 2nd display line.

#### Interfaces and Engineering Tools

The transmitter settings are also configurable by means of an Engineering Tool.

Via the BlueControl® software, including the transmitter simulation and especially the convenient connection via the



BluePort® front interface, the user can solve the task in hand without having to work through operating instructions.

Of course, practically all settings can also be made from the device front. Moreover, the CI 45 can exchange data with supervisory systems and PCs via an optional RS 485 interface with MODBUS RTU protocol that is fitted into the top-hat DIN rail.

Devices with option system interface can be connected via bus coupler to fieldbuses.

#### Password protection

If required, unauthorized access to the various Operating Levels can be prevented with a password, or an entire level can be blocked.

## TECHNICAL DATA

### INPUTS

#### Survey of inputs

Input	Purpose
INP1	AX1 (process value 1), universal input
INP2 (option)	X2 (process value 2), universal input
di1	Operation disabled; Reset of stored alarms; Reset of min/max indicator.
di1 (option)	Counter or frequency input

#### UNIVERSAL INPUT INP1

Resolution: >15 bits  
 Decimal point: 0 to 3 decimals  
 Digital input filter: adjustable 0.0. 999.9 s  
 Scanning cycle: 100 ms (only INP1) 140 ms (INP1 + INP2)

Linearization: 31 segments, adaptable with BlueControl®

Measurement value correction: 2-point or offset

Limiting frequency: 1,7 Hz

#### Thermocouples (Table 1)

Input resistance:  $\geq 1 \text{ M}\Omega$

Influence of source resistance:  $1 \mu\text{V}/\Omega$

Input circuit monitor: sensor break, polarity

#### Cold-junction compensation

- Internal
  - additional error: typical  $\geq +0.5 \text{ K}$
  - max.  $\leq +1.2 \text{ K}$
- External:  $0 \dots 100 \text{ }^\circ\text{C}$ 
  - value setting:  $0 \dots 100 \text{ }^\circ\text{C}$
  - measured via INP2 (option)

#### Break monitoring

Sensor current:  $\leq 1 \mu\text{A}$

Operating sense configurable

#### Resistance thermometer (Table 2)

Connection technique: 3-wire or 4-wire (not available if using INP2)

Lead resistance: max.  $30 \Omega$  (max. at range end)

Input circuit monitoring: break and short circuit

#### Measurement span

Separated into ranges

Physical measurement range:  $0 \dots 4,500 \Omega$

The BlueControl® software enables the internal characteristic curve for the KTY 11-6 temperature sensor to be adapted.

Table 1: Thermocouple input

Thermocouple type		Measurement range		Error	Typical resol.
L	Fe-CuNi (DIN)	-100...900°C	-148...1,652°F	$\leq 2\text{K}$	0.05 K
J	Fe-CuNi	-100...1,200°C	-148...2,192°F	$\leq 2\text{K}$	0.05 K
K	NiCr-Ni	-100...1,350°C	-148...2,462°F	$\leq 2\text{K}$	0.1 K
N	Nicrosil/Nisil	-100...1,300°C	-148...2,372°F	$\leq 2\text{K}$	0.1 K
S	PtRh-Pt 10%	0...1,760°C	32...3,200°F	$\leq 2\text{K}$	0.1 K
R	PtRh-Pt 13%	0...1,760°C	32...3,200°F	$\leq 2\text{K}$	0.1 K
T**	Cu-CuNi	-200...400°C	-328...752°F	$\leq 2\text{K}$	0.03 K
C	W5%Re-W26%Re	0...2,315°C	32...4,199°F	$\leq 3\text{K}$	0.2 K
D	W3%Re-W25%Re	0...2,315°C	32...4,199°F	$\leq 3\text{K}$	0.2 K
E	NiCr-CuNi	-100...1,000°C	-148...1,832°F	$\leq 2\text{K}$	0.05 K
B*	PtRh-Pt6%	0(400)...1,820°C	32(752)...3,308°F	$\leq 3\text{K}$	0.2 K
Special		-25 ... 75 mV		$\leq 0.1\%$	0.005%

\* Values apply from 400°C upwards.

\*\* Values apply from -80°C upwards.

Table 2: Resistive inputs

Type	Sensor current	Measurement range		Error	Typical resol.
Pt100***	$\beta 0,25 \text{ mA}$	-200...100(150)°C	-328...212(302)°F	$\leq 1 \text{ K}$	0.05 K
Pt100		-200...850°C	-328...1,562°F	$\leq 1 \text{ K}$	0.05 K
Pt1000		-200...850°C	-328...1,562°F	$\leq 2 \text{ K}$	0.05 K
KTY 11-6*		-50...150°C	-58...302°F	$\leq 2 \text{ K}$	0.05 K
Special*		0...4,500 $\Omega$ **		$\leq 0.1\%$	0.005%
Special*		0...450 $\Omega$ **		$\leq 0.1\%$	0.005%
Potentiom		0...160 $\Omega$ **		$\leq 0.1\%$	0.005%
Potentiom		0...450 $\Omega$ **		$\leq 0.1\%$	0.005%
Potentiom		0...1,600 $\Omega$ **		$\leq 0.1\%$	0.005%
Potentiom		0...4,500 $\Omega$ **		$\leq 0.1\%$	0.005%

\* Default setting is the characteristic for KTY 11-6 (-50...150°C)

\*\* Including lead resistance

\*\*\* up to 150°C at reduced lead resistance (max. 160  $\Omega$ )

Table 3: Current and voltage input

Measurement range	Input resistance	Error	Typical resol.(Ø)
0...10 Volt	$\approx 110 \text{ k}\Omega$	$\leq 0.1 \%$	0.3 mV
-10...10 Volt	$\approx 110 \text{ k}\Omega$	$\leq 0.1 \%$	0.6 mV
-5...5 Volt	$\approx 110 \text{ k}\Omega$	$\leq 0.1 \%$	0.3 mV
-2,5...115mV*	$>1 \text{ M}\Omega$	$\leq 0.1 \%$	4 $\mu\text{V}$
-25...1150mV*	$>1 \text{ M}\Omega$	$\leq 0.1 \%$	40 $\mu\text{V}$
-25...90mV*	$>1 \text{ M}\Omega$	$\leq 0.1 \%$	4 $\mu\text{V}$
-500...500mV*	$>1 \text{ M}\Omega$	$\leq 0.1 \%$	40 $\mu\text{V}$
-200...200mV*	$>1 \text{ M}\Omega$	$\leq 0.1 \%$	20 $\mu\text{V}$
0-20 mA	20 $\Omega$	$\leq 0.1 \%$	0.8 $\mu\text{A}$

\*For INP1: high-impedance, without break monitoring

for INP2: high impedance, break monitoring always active

**Current and voltage measurement (Table 3)**

Span start and span: anywhere within the measurement range  
 Scaling: freely selectable, -1,999...9,999  
 Input circuit: 12.5% below span  
 monitoring (current): start (2 mA)

**O2- measuring (option)**

EMI-measuring by means of INP1 (high-impedance mV-inputs) suitable for probes with

- Constant sensor temperature (heated probes), setting by means of parameter
- Measured sensor temperature (non-heated probes), measuring by means of INP2

**ADDITIONAL INPUT INP2 (UNIVERSAL, OPTION)**

Resolution: >15 bits  
 Digital input filter: adjustable, 0.0. 9,999 s  
 Scanning cycle: 140 ms  
 Linearization: as for INP1  
 Measurement value correction: 2-point or offset  
 Type: single-ended except thermocouples

**Thermocouples (Table 1)****Cold-junction compensation**

- Internal
  - additional error: typical:  $\leq +0.5$  K  
max.:  $\leq -2.5$  K
- External 0...100 °C

Remaining technical data as for INP1.

**Resistive sensors (Table 2)**

Connection technique: 3-wire  
 Measurement span

Remaining technical data as for INP1.

**Current and voltage measurement (Table 3)**

Remaining technical data as for INP1 except:

- Voltage input ranges -10 / 0...+10V and -5...+5V not possible.
- Millivolt input ranges: break monitoring always active.

**CONTROL INPUT DI1****Model with****a) Contact input**

Connection of potential-free contact that is suitable for switching 'dry' circuits.

Switched voltage: 5 V  
 Switched current: 1 mA

**b) Optocoupler input**

For active control signals.

Nominal voltage: 24 V DC, external supply

Logic '0': -3...5 V  
 Logic '1': 15...30 V  
 Current demand: max. 6 mA

**Control input**

Configurable as direct or inverse switch or contact.

functions: Locking front operating, resetting of latched alarms, slave pointers, integrator; activating tare-, sample&hold function; switchover between inputs

**Counter input (option)**

Pulse counter for up or down counting, non storing

active edge: configurable  
 Count register: 31 bit  
 Display range: adjustable via counter divider, 8-digit

Counter divider: adjustable, 0.1...9,999

Counter start value: adjustable  
 Counter end value: adjustable; signalling on output

Counter processing: each 100 ms

Resetting: via front key combination, limit Counter input with option contact

Count frequency, max.: 5 Hz at square 1:1  
 Pulse duration, min.: 100ms

**Counter input with option optocoupler**

Count frequency, max.: 100 kHz at square 1:1

Pulse duration, min.: 5µs

Effects to active transmitters connected to INP1, INP2 can occur.

**Frequency input (option)**

Input with option optocoupler  
 Frequency range: 0...100 kHz at square 1:1

Gate time: adjustable, 0.1... 20s  
 Process value: scalable

Interference with active transmitters connected to INP1, INP2 is possible

**OUTPUTS****SURVEY OF OUTPUTS**

Output	Purpose
OUT1, OUT2 (Relay)	Limit contact, alarms, counter end value, errors, status messages *
OUT3 (Logic)	Same as OUT1 and OUT2
OUT3 (Continuous)	Analog output for display value, INP1, INP2, frequency value or counter value
OUT3 (U)	Transmitter supply 13 V / 22 mA

\*All logic signals can be "OR-linked".

Output values can also be forced via interface.

**RELAY OUTPUTS OUT1, OUT2,**

Type: 2 NO contacts with a common terminal

Max. Contact rating: 500 VA, max 250 V, 2 A at 48...62 Hz

Min. Contact rating: 6V, 1 mA DC

Switching for I=1A/2A: ? 800,000/500,000 Cycles (at 250V AC, resistive load)

(Electrical):

**Note:**

If the relays OUT1, 2 and 3 are used to operate external contactors, these must be fitted with RC snubber circuits to manufacturer specifications to prevent excessive voltage peaks at switch-off.

**OUT3 AS UNIVERSAL OUTPUT**

Parallel current/voltage output with common 'minus' terminal (combined use only in galvanically isolated circuits).

Freely scalable

Resolution: 14 bits

Dynamic response Output follows the input:

(step change of input signal) T90:  $\leq 540$  ms

Tracking error I/U:  $\leq 2\%$

Residual ripple:  $\leq +1\%$

(rel. to range end) 0...130 kHz

**Current output**

0/4...20 mA, configurable.

Short circuit proof

Dynamic range: -0,5...23 mA

Load:  $\leq 700 \Omega$

Load effect:  $\leq 0,02\%$

Resolution:  $\leq 1,5 \mu A$

Error:  $\leq 0,1\%$

### Voltage output

0/2...10V, configurable not continuous short-circuit proof

Dynamic range: -0,15...11,5 V  
 Load:  $\geq 2 \text{ k}\Omega$   
 Load effect:  $\leq 0,06\%$   
 Resolution:  $\leq 0,75 \text{ mV}$   
 Error:  $\leq 0,1\%$   
 Additional error when using simultaneously the current output  $\leq 0,09\%$

### OUT3 as transmitter supply

Output: 22 mA /  $\geq 13 \text{ V DC}$

### OUT3 as logic signal

Load  $\leq 700 \Omega$  0 /  $\leq 23 \text{ mA}$   
 Load  $> 500 \Omega$  0 /  $> 13 \text{ V}$

### Frequency output

Output by means of voltage output  
 frequency range: 0, 0.25...1000 Hz (square wave)  
 Output value: adjustable  
 Level: 0 / 11.5V

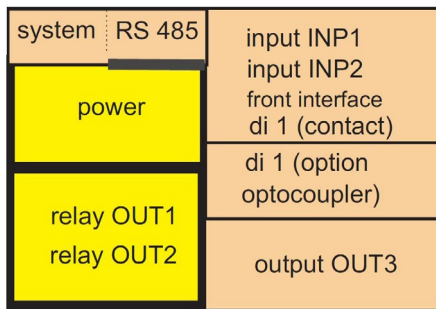
### Pulse output

By means of integrator with automatic resetting  
 frequency range: 0...5 Hz max. 5 Imp/s  
 Pulse duration: 100ms (INP1 measuring) 140ms (INP1 + INP2 measuring)

### GALVANIC ISOLATION

Galvanic isolation is provided between inputs and outputs as well as from the supply voltage (3-port-isolation).

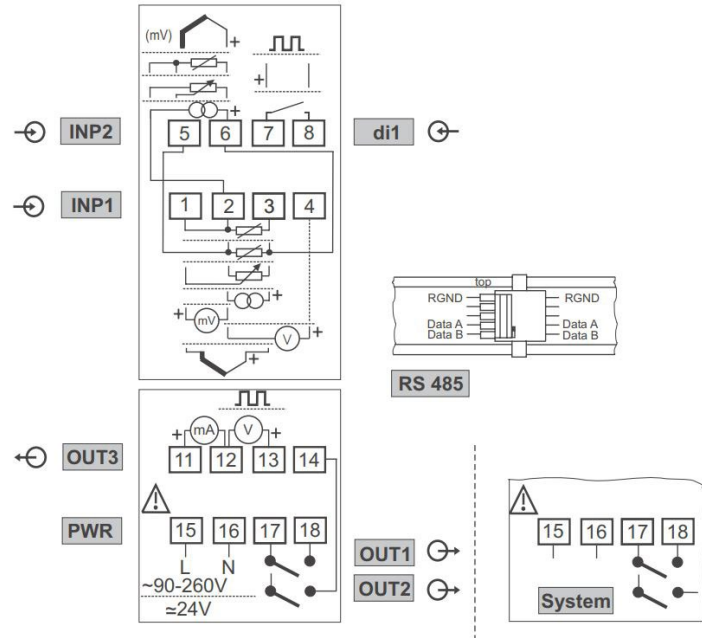
Fig. 1: Galvanic isolation



— Safety isolation  
 - - - functional isolation

Test voltage:  
 Hilfsenergie gegen Ein-/Ausgänge: 2.3 kV AC, 1 min  
 Eingang gegen Ausgang: 500 V AC; 1min  
 Max. zulässige Spannungen zwischen Ein-/Ausgängen gegen Erde:  $\leq 33 \text{ V AC}$

Fig. 2: Connecting diagram CI 45



### FUNCTIONS

#### Process value functions

- Standard (process value X1)
- Optionally:
- Difference control (X1 - X2)
- Max. value selection from X1, X2
- Min. value selection from X1, X2
- Mean value selection from X1, X2
- Switchover between X1 and X2
- Oxygen measurement\* with measured or constant sensor temperature
- Counter / frequency measuring
- Process value via INP1, CJC via INP2

\*Precise determination of O2 content by means of Nernst equation.

#### Signal processing

The selected input signal is converted into an analog output signal or is accessible at the interface.

Depending on the selected sensor type, the following options are provided for manipulating the input signal:

- Measurement value correction (offset and 2-point)
- Scaling
- 1st-order filter with adjustable
- Parameters (bandwidth, see below)
- Linearisation with 31 segments
- $\sqrt{x}$ , with  $\sqrt{-x} = 0$
- $x^2$
- Integrator

#### Behaviour on sensor break/short circuit

- Response of the analog output is selectable
- (upscale / downscale)
- Preset substitute input value, can be disabled

#### Sample & Hold amplifier (option)

The sample-and-hold amplifier stores input signals which are only present for a short time. Typical applications are: storage of discontinuous set-values, and storage of signals in the case of a fault in the signal source.

#### Tare function (option)

Setting the tare signal the actual process value is reset to zero. Further measurements work with the offset, e.g. to subtract the tare weight.

#### Min/max indicator (slave pointer)

The minimum and maximum input values are stored in the CI 45, and can be displayed by means of the keys D (minimum) and I (maximum). The values are resettable.

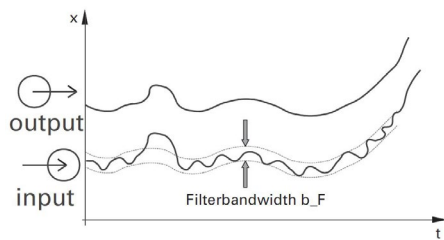
**Display of engineering units**

The engineering unit for the measured value can either be selected from a predefined list of standard units, or it can be defined by the user (BlueControl®). The unit appears in the second line of the display.

**FILTER**

The transmitter contains a 1st-order mathematical filter with adjustable time constant and bandwidth. The bandwidth is the adjustable tolerance range within which the filter is active above and below the process value. Measurement value changes in excess of the adjusted bandwidth are not filtered.

Fig. 3: Filter function



**LIMIT VALUE FUNCTIONS**

Max, Min or Max/Min monitoring with adjustable hysteresis.

Monitored signals

- Process value
- Input 1
- Input 2
- Counter / frequency value

**Functions**

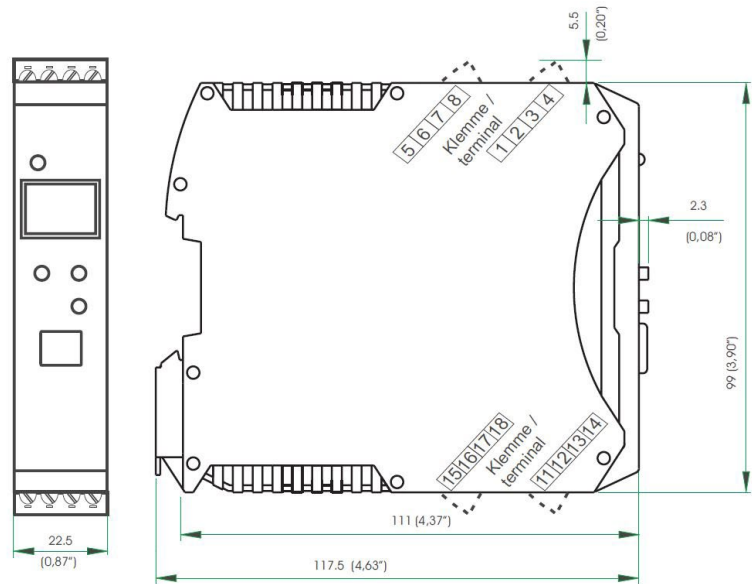
- Input value monitoring
- Input value monitoring with storage
- Signal changes / with storage
- Reset via front panel or digital input
- Alarm discriminator adjustable from 0...9999 seconds
- Several limit values and alarm messages can be logically "OR-linked".
- Limits can be used as control signals.

**ALARMS**

*Sensor break / short circuit*

Depending on the selected input type, the input circuit is monitored for break, short circuit, and reversed polarity.

Fig. 4: Dimensions CI 45



**MAINTENANCE MANAGER**

Display of error messages, warnings, and stored limit value messages in the error list. Messages are stored, and can be reset manually.

Possible elements in the error list:

Sensor break, short circuit, incorrect polarity
Stored limit values
Heating current alarm
Control loop alarm
Fault during self-tuning
E.g. Re-calibration warning (message is generated when a predefined operating time is reached)
E.g. Maintenance interval for a switching device (message is generated when a predefined number of switching cycles is reached)
Internal fault (RAM, EEPROM, ...)

**DISPLAY AND OPERATION**

*Display*

LCD: dual-line plus additional display elements

*Upper line:*

- 4 digits, 7-segment LCD
- for process value

*Lower line:*

- 5 digits, 14-segment LCD; configurable contents (via BlueControl®)
- Engineering unit
- Parameters
- Extended Operating Level

*Additional display elements*

4 display elements (bars in the lower line of the LCD, identified as 1, 2, F, E)

- Bars 1 and 2: OUT1/OUT2 active or INP1/INP2 active
- Bar F: Function active (planned)
- Bar E: Entry has been made in the error list

*Dual-color indicator LEDs:*

- Green = OK
- Green, blinking = no data exchange with bus coupler (only for devices with system option)
- Red = limit value Lim1 triggered
- Red blinking = internal fault, configuration mismatch

**Operating functions**

Only three keys at the front of the CI 45 are used to operate process values, parameters, and configuration data. Different Operating Levels and selected parameters can be disabled by means of BlueControl®.

## POWER SUPPLY

Depending on ordered version:

### AC supply

Voltage: 90...260 V AC  
Frequency: 48...62 Hz  
Consumption: approx. 7 VA max.

### Universal supply 24 V UC\*

AC supply: 18...30 V AC  
Frequency: 48...62 Hz  
DC supply: 1 8...31 V DC  
Consumption: approx. 4 VA/3 W max.

Supply only from safety electrical low voltage (SELV).

\* Devices with system option:

They are supplied via the bus connector from bus coupler or power supply module.

### Behaviour with power failure

Configuration and parameter settings:

Permanent storage in EEPROM

### BLUEPORT® FRONT INTERFACE

Connection to the controller front via a PC adapter (see 'Additional Accessories'). The BlueControl® software enables the KS 45 to be configured, parameters set, and operated.

### BUS INTERFACE (OPTIONAL)

#### RS 485

Connection via bus connector fitted in the top-hat rail. Screened cables should be used.

Galvanically isolated

Type: RS 485  
Transmission speed: 2,400, 4,800, 9,600, 19,200, 38,400 bits/sec

Parity: even, odd, none

Address range: 1...247

Number of controllers per bus segment: 32

#### Protocol:

- MODBUS RTU

### System Interface

For connection to fieldbus couplers (see system components) Connection via bus connector fitted in the top-hat rail. Technical data see data sheet 9498-737-50911.

## ENVIRONMENTAL CONDITIONS

### Protection mode

Front panel: IP 20  
Housing: IP 20  
Terminals: IP 20

### Permissible temperatures

For specified accuracy: -10...55°C

Warm-up time: < 20 minutes

Temperature effect: ≤ 0.05% / 10K

add. influence to cold

junction compensation: ≤ 0.05% / 10 K

Operating limits: -20...60°C

Storage: -30...70°C

### Humidity

Max. 95%, 75% yearly average, no condensation

### Shock and vibration

Vibration test Fc (DIN EN 60 068-2-6)

Frequency: 10...150 Hz

Unit in operation: 1g or 0.075 mm

Unit not in operation: 2g or 0.15 mm

Shock test Ea (DIN EN 60 068-2-27)

Shock: 15 g

Duration: 11 ms

### Electromagnetic compatibility

Complies with EN 61 326-1 for continuous, unattended operation.

Interference radiation:

- Within the limits for Class B devices.

Immunity to interference:

Meets the test requirements for devices in industrial areas.

Evaluation criteria:

- Surge interference partly has marked effects, which decay after the interference stops.
- With high levels of surge interference on 24 V AC mains leads, it is possible that the device is reset.
- With HF interference, effects up to 50 µV can occur.

## GENERAL

### Housing front

Material: Polyamide

PA 6.6 Flammability class: VO (UL 94)

### Connecting terminals

Material: Polyamide PA

Flammability class: V2 (UL 94) for screw

terminals

V0 (UL 94) for spring-clamp terminals

and bus connector

### Electrical safety

IP 20 CE conform

IP 20 Complies with EN 61 010-1

Over-voltage category II Contamination degree 2

Protection class II

### Electrical connections

Plug-in connector strips with choice of terminal type:

- Screw terminals or spring-clamp terminals, both for lead cross-sections from 0.2 to 2.5 mm<sup>2</sup>. (AWG24-12)

### Mounting method

Clip-on rail mounting (35 mm top-hat rail to EN 50 022).

Locked by means of metal catch in housing base.

Close-packed mounting possible.

Mounting position: vertical

### Weight:

0.18kg

### Standard accessories

Operating instructions

- With 'Interface' option: bus
- Connector for fitting into top-hat rail

### Certification

- CE certified
- cULus certification (Type 1, indoor use) File: E 208286

## ACCESSORIES

### BlueControl® (Engineering Tool)

PC software package for configuring, parameter setting, and operating (commissioning) the KS 45 controller. Moreover, all settings are saved and can be printed, if required.

Depending on version, a powerful data acquisition module with trend graphics is available.

### Show/hide function

The BlueControl® software enables any number of parameters and configuration setting to be shown/hidden. This ensures that only permitted parameters & settings can be changed in the controller. Safety-relevant parameters are not displayed.

Fig. 5: Hiding of interface parameters: only the address is visible

Name	Description	Visible
othr	Other	<input checked="" type="checkbox"/>
bAud	baudrate	<input type="checkbox"/>
Addr	address	<input checked="" type="checkbox"/>
Prty	parity	<input type="checkbox"/>
dCLY	answer delay [ms]	<input type="checkbox"/>
D.Unt	display unit	<input checked="" type="checkbox"/>
O2	parameter unit for O2	<input checked="" type="checkbox"/>
Unit	unit	<input checked="" type="checkbox"/>
dP	decimal points	<input checked="" type="checkbox"/>
SEGm	display segment assignment	<input checked="" type="checkbox"/>
C.dEL	modem delay [ms]	<input checked="" type="checkbox"/>

This ensures that only permitted parameters & settings can be changed in the transmitter. Safety-relevant parameters are not displayed.

### Simulation function

The built-in simulation serves to test the settings.

### Import function

Engineering of UNIFLEX CI/CB created by engineering tool ET/Uniflex can be read and transformed if possible.

### Software requirements:

Windows 95/98/NT/2000/XP

Configuration settings made only via the BlueControl® software (not via the transmitter's front keys)

- Customer-specific linearization
- Enable forcing for inputs and outputs
- Setting the limits for operating hours and switching cycles
- Switch-over to 60 Hz mains frequency
- Blocking operator functions, Operating Levels, and password definition
- Text setting
- Definition of the display contents

### Hardware requirements:

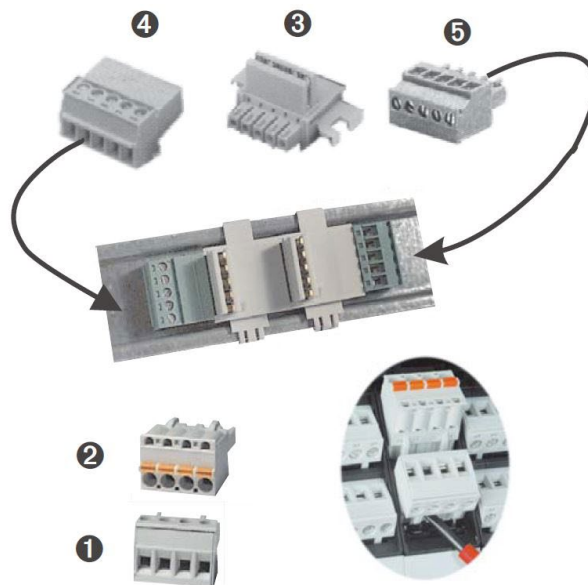
A special PC adapter (see 'Accessories') is required for connecting to the transmitter.

Updates and demo software from: [www.west-co.uk](http://www.west-co.uk)

Table 4: BlueControl®: Versions and functions

FUNCTIONALITY	MINI	BASIC	EXPERT
Parameter and configuration setting	Yes	Yes	Yes
Controller and loop simulation	Yes	Yes	Yes
Download: transfer of an engineering to the controller	Yes	Yes	Yes
Online mode/ visualisation	SIM only	Yes	Yes
Defining and application specific linearisation	Yes	Yes	Yes
Configuration in the extended operating level	Yes	Yes	Yes
Upload: reading an engineering from the controller	SIM only	Yes	Yes
Basic diagnostic functions	No	No	Yes
Saving data file and engineering	No	Yes	Yes
Printer function	No	Yes	Yes
Online documentation, help	Yes	Yes	Yes
Implementation of measurement value correction	Yes	Yes	Yes
Data acquisition and trend display	SIM only	Yes	Yes
Wizard function	Yes	Yes	Yes
Extended simulation	No	No	Yes

Fig. 6: Accessory parts



### ACCESSORIES

Description	Quantity	Order no.
① Connector set with screw terminals	4 pieces	9407-998-07101
② Connector set with spring-clamp terminals	4 pieces	9407-998-07111
③ Bus connector for fitting in top-hat rail	1 piece	9407-998-07121
④ Plug for bus connection, inverted, connections at left, horizontal cable entry	1 piece	9407-998-07131
⑤ Plug for bus connection, connections at right, vertical cable entry	1 piece	9407-998-07141

### ADDITIONAL ACCESSORIES

Description	Language	Order no.
PC adapter for the BluePort® front interface		9407-998-00001
USB serial adaptor (USB to RS 232)		9407-998-00081
Converter RS 232 to RS 422/485	galv. isolated	ADAM-4520-D
BlueControl® Mini	German/English	<a href="http://www.west-cs.de">www.west-cs.de</a>
BlueControl® with Basic license rail line	German/English	9407-999-12001
BlueControl® with Expert license rail line	German/English	9407-999-12011

## ORDERING DATA

Transmitter UNIFLEX CI 45	C	I	4	5	-	1		-		0	0	-	00
1 universal input, 1 digital input with display and BluePort interface							↑	↑	↑	↑	↑	↑	
without plug-in connector terminals							0						
with screw terminal connector							1						
90..260V AC, mA/V/logic +1 relay								2					
18...30VAC/18..31VDC, mA/V/logic +1 relay								3					
90..260V AC, mA/V/logic +2 relay								4					
18...30VAC/18..31VDC, mA/V/logic +2 relay								5					
no option									0				
RS 485 / MODBUS - protocol									1				
System interface (only for 24V versions)									2				
No option										0			
Option package 1*										1			
Option package 2**										2*			
Standard configuration											0		
Configuration to order											9		
Standard (CE-certification)													0
UL /cUL - certified													U

\* Option package 1: additional universal input INP2, plus: O2-measuring; counter input; functions tare, sample&hold, integrator

\*\* Option package 2: additional to option package 1: Digital input as optocoupler, frequency input / output

### Standard accessories:

- Operating notes
- Devices with 'Interface' option: bus connector for fitting into top-hat rail

### Additional system components for units with system interface

Fieldbus couplers	
CANopen	RL40-111-00000-U00
PROFIBUS DP/DPV1	RL40-112-00000-U00
MODBUS RTU	RL40-113-00000-U00
Ethernet MODBUS/TCP	RL40-114-00000-U00
Profinet IO	RL40-115-00000-U00

Power supply module RL40-119-00000-U00

\* see Rail Line system datasheet

### Documentation

<https://www.west-cs.co.uk/resources-uk/>



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