

**PROCESS DISPLAYS
PULSE CONTROL UNITS**

**SIGNAL CONVERTERS
ROTATIONAL SPEED MONITORS**



EVALUATING AND DISPLAYING SIGNALS AND PULSES

Pepperl+Fuchs offers an extensive range of control devices. Electromechanical and electronic counters assist in the display and evaluation of signal pulses as well as the implementation of simple decentralized controllers. They are frequently used in packaging technology as well as device and machine construction. Multifunction devices for pulse counting, speed evaluation and time measurement can be used universally throughout the factory automation sector. Process devices with analog inputs and outputs can be used to display and control fill levels in containers. PT100 sensors or thermocouple devices can be connected to the temperature displays.

DIGIT DISPLAYS

Display counters are installed in machines to indicate daily production quantities or support manual counting processes.

- Counting frequency up to 25 Hz
- Degree of protection IP65, (front)



Model number	Technical features
KCM-51-C	24 x 48 mm, reset button, 5 digits, 24 V DC
KCM-51-V	24 x 48 mm, reset button, 5 digits, 230 V AC
KCM-70-C	24 x 48 mm, 7 digits, 24 V DC
KCM-70-V	24 x 48 mm, 7 digits, 230 V AC
KCM-70A-C	15 x 32 mm, 7 digits, 24 V DC
KCM-70A-V	15 x 32 mm, 7 digits, 230 V AC

LCD PULSE AND OPERATING HOURS COUNTERS

The 7-digit pulse counter that monitors production volumes as well as time and operating hours can be reset manually or by signal, for example, after a maintenance.

- 7-digit LCD display
- Housing dimensions: 24 x 48 mm
- Reset function with repeat function, option of locking via separate input
- Preselection with transistor output
- All values are stored in the EEprom
- IP65, front end
- Power supply with 24 V DC

Model number	Technical features
KC-LCD-24-24VDC	Pulse counter
KH-LCD-24-24VDC	Time and operating hours counter



Multifunction batch controllers are designed to display parameters, measure frequency or time duration as well as count pulses. The batch preselection can be entered as an absolute value or a teach-in value using the programming buttons on the front of the controller. The models available include units with additional outputs or a serial interface.

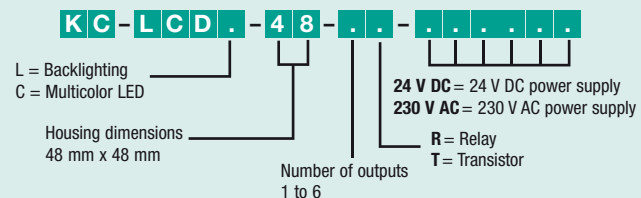
LCD BATCH CONTROLLERS WITH PERCENTAGE EVALUATION

LCD multifunction counters with two 6-digit displays, IP65 rating (front) and the DIN 48 x 48 mm design are optionally available with backlighting or in a multicolor LED version. They support pulse, time and frequency counting, operate by adding or subtracting and can be reset automatically or by external trigger. With a maximum counting frequency of 55 kHz, they are ideally suited for connecting rotary encoders with a high pulse count. With front panel keys to individually adjust each digit, they are extremely easy to use.



Model number	Technical features
KC-LCD-48-1R-24VDC	up to 5 kHz, LCD display
KC-LCD-48-1R-230VAC	up to 5 kHz, LCD display
KC-LCDL-48-2R-24VDC	up to 55 kHz, backlit LCD display
KC-LCDL-48-2R-230VAC	up to 55 kHz, backlit LCD display
KC-LCDC-48-2T-24VDC	up to 55 kHz, two-color LED display
KC-LCDC-48-2T-230VAC	up to 55 kHz, two-color LED display
KC-LCDC-48-2R-24VDC	up to 55 kHz, two-color LED display
KC-LCDC-48-2R-230VAC	up to 55 kHz, two-color LED display
KC-LCDC-48-6T-24VDC	up to 55 kHz, two-color LED display
KC-LCDC-48-6T-230VAC	up to 55 kHz, two-color LED display

ORDER CODES



LED BATCH CONTROLLER

This multifunction LED batch controller incorporates timer, counter and speed indicator functions in a single device and a bright 6-digit display visible at viewing angles of up to 150°. The degree of protection (front) is IP65.



- DIN design 48 x 48 mm
- Max. counting frequency 20 kHz
- Scaling function
- Many different operating and output modes
- Removable screw terminals

Model number	Technical features
KCT1-6SR-C	One preselection with relay output, 24 V DC
KCT1-6SR-V	One preselection with relay output, 115/230 V AC
KCT1-6ST-V	One preselection with transistor relay output, 115/230 V AC
KCT1-6WR/RS232-V	One preselection with relay output and serial interface, 115/230 V AC



- Housing with DIN design 24 x 48 mm
- Max. counting frequency 60 kHz

Model number	Technical features
KCT-6S-C	No preselection, 24 V DC
KCT-6ST-C	Preselection with transistor output, 24 V DC



- Housing with DIN design 48 x 96 mm
- Max. counting frequency 60 kHz
- Large, bright display, legible at a max. distance of 10 m

Model number	Technical features
KC-LED-96-1T-24VDC	Counter, speed indicator, timer with transistor output, 24 V DC
KCT2-6ST-V	One preselection with transistor relay output, 115/230 V AC

MOBILE ELECTRONIC LCD COUNTER WITH BATTERY POWER SUPPLY

Battery-operated electronic batch controllers with LCD display can be integrated seamlessly in mobile machines. The device is operated with keys that individually adjust each digit.



- Housing with DIN design 48 x 48 mm
- Preselection with relay output
- Max. counting frequency 25 Hz
- Local or remote reset
- Display of 2 x 6 digits
- IP65, front end
- Battery power supply (useful life of 8 years)

Model number	Technical features
KCY1-6SR-B	Battery-operated pulse counter



PROCESS DISPLAYS FOR ANALOG SIGNALS

Compact 5-digit digital display for analog current (0/4 ... 20 mA) and voltage values (0/2 ... 10 V) with galvanic isolation from the signal input and 14 bit resolution. Input signal linearization function available. The connection is made via screw terminals. The min./max. values can be stored.



- Housing with DIN design 24 x 48 mm

Model number	Technical features
DA5-IU-C	Analog input IU, 24 V DC

This 5-digit process control unit not only incorporates a superior, clearly legible display for analog current/voltage values, but also offers control functions for dual level control, for example, via galvanically isolated relay outputs and includes a hysteresis function and min./max. value storage option. Sensors are connected directly and supplied with power from the device. The input characteristic can be scaled via 24 interpolation points.



- Housing with DIN design 48 x 96 mm

Model number	Technical features
DA5-IU-2K-C	Process control unit with 2 relay outputs, 24 V DC
DA5-IU-2K-V	Process control unit with 2 relay outputs, 115/230 V AC

TEMPERATURE DISPLAYS AND CONTROL UNITS

These temperature display units store the min./max. value and the thermocouple compensation can be done internally or externally. Temperature control units have relay outputs with a variable hysteresis function, are suitable for connection to millivolt sensors (0 ... 400 ohms, 0 ... 4000 ohms) and the input characteristic can be adapted via 24 interpolation points.



- Housing with DIN designs 24 x 48 mm and 48 x 96 mm
- Galvanic isolation with reverse polarity protection
- Resolution up to 0.1 °C



Model number	Technical features
KT-LED-24-PT100-24VDC	Connection of PT100 and Ni100, power supply 24 V DC
KT-LED-24-TC-24VDC	Connection of thermocouples J/K/N, power supply 24 V DC
KT-LED-96-2R-230VAC	Temperature control unit with 2 relay limit value outputs, 230 V AC
KT-LED-96-2R-24VDC	Temperature control unit with 2 relay limit value outputs, 24 V DC

PROCESS CONTROL UNIT WITH ANALOG OUTPUT

This 6-digit process control unit can process 2 pulse inputs up to 25 kHz as a sum, a differential, or a ratio and generate a control function for a process via a scaleable analog output.

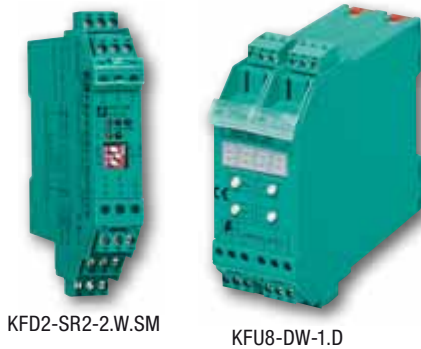


- Housing with DIN design 48 x 96 mm
- Large multifunction display with 15 mm digit height
- 2 digital counter inputs
- 1 analog control output

Model number	Technical features
TC-6A-V	Analog output for controlling processes, 24 V DC and 115/230 V AC

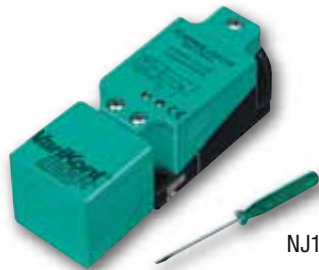
STANDSTILL AND ROTATIONAL SPEED MONITORS

Standstill and rotational speed monitors are used to monitor low speed limit or speed range for motors, conveyor belts or other rotating components and then signal the speed status to the controller via logic outputs. All devices include a startup override and an adjustable frequency limit.



KFD2-SR2-2.W.SM

KFU8-DW-1.D



NJ15+U1+DW1-...

Model number	Technical features
KFD2-SR2-2.W.SM	Standstill monitors in IP20 with a width of 20 mm, frequency limit adjustable to 10 Hz with dip switch, rotational direction and slip monitor with second input, 2 relay outputs, PNP changeover contact, option of connecting NAMUR and 3-wire sensors, 24 V DC power supply, not suitable for hazardous applications
KFU8-DW-1.D	Rotational speed monitor with width of 40 mm, frequency limit adjustable to 10 kHz via menu, option of connecting NAMUR and 2/3/4-wire sensors, wide range power supply 24 V DC and 230 V AC
NJ15+U1+DW1-1 NJ15+U1+DW1-10 NJ15+U1+DW1-100	Inductive rotational speed monitor in VariKont housing with switching distance of 15 mm, frequency limit adjusted via potentiometer (up to 1/10/100 Hz, depending on model), dimensions: 40 x 40 x 118 mm

FREQUENCY CURRENT/VOLTAGE CONVERTER

Signal converters are used to convert pulse signals into analog current or voltage values for process controlling.



Model number	Technical features
KFU8-FSSP-1.D	Single-channel signal converter up to 40 kHz, connection of 2/3/4-wire and NAMUR sensors, current and voltage output, scaleable pulse output, width of 40 mm, 4-way 7-segment display, wide range power supply 24 V DC/115 V AC/230 V AC, not suitable for hazardous applications
KFU8-UFT-2.D.FA	2-channel signal converter up to 1 kHz, connection of NAMUR sensors or contacts, 2 relay outputs and one 0/4...20 mA current output, slip or rotational direction monitoring, width of 40 mm, wide range power supply 24 V DC/115 V AC/230 V AC

SIGNAL CONVERTERS

These devices convert SSI sensor signals with an input frequency of 100 Hz to 1 MHz and serial RS232/485 signals into analog current values. During the conversion process, the values are linearized via two interpolation points.



Model number	Technical features
K23-SSI/R2/IU-C	SSI/RS232/RS485 signal converter, analog current output, power supply 24 V DC
K23-SSI/R2/25B-C	SSI/RS232/RS485 signal converter, parallel 25 bit output in gray code format, power supply 24 V DC

SENSOR SIGNAL CONVERTER

Compact sensor signal converter with built in terminals. The DIN rail mount converter provides LEDs for signal status display and can convert NAMUR switching signals to PNP/NPN signals (200 mA, max. 1 kHz), or convert a 3-wire sensor signal to a relay output (30 V DC or 230 V AC, 2 A, max. 10 Hz).

The products listed are not suitable for hazardous applications.



Model number	Technical features
KCD2-E	NAMUR input, NPN NO contact output
KCD2-EL	NAMUR input, NPN NO contact output, with lead breakage detection
KCD2-E1	NAMUR input, NPN NC contact output
KCD2-E2	NAMUR input, PNP NO contact output
KCD2-E2L	NAMUR input, PNP NO contact output, with lead breakage detection
KCD2-E3	NAMUR input, PNP NC contact output
KCD2-R	NPN or PNP 3-wire input, change-over contact relay output

ISOLATED SWITCH AMPLIFIER

NPN or PNP sensors can be connected to the 2-channel isolated switch amplifier with 2 change-over relay outputs (230 V AC, 4 A). The amplifier is suitable for bistable min./max. control, signal doubling or switching 2 galvanically isolated signals, and incorporates a 24 V DC power supply for the sensors.



Model number	Technical features
KFA6-SR-2.3L.FA	Isolated switch amplifier for safe area applications with galvanic isolation of inputs/output as per EN 50178, power supply 115/230 V AC



FACTORY AUTOMATION – SENSING YOUR NEEDS



Pepperl+Fuchs sets the standard in quality and innovative technology for the world of automation. Our expertise, dedication, and heritage of innovation have driven us to develop the largest and most versatile line of industrial sensor technologies and interface components in the world. With our global presence, reliable service, and flexible production facilities, Pepperl+Fuchs delivers complete solutions for your automation requirements – wherever you need us.

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