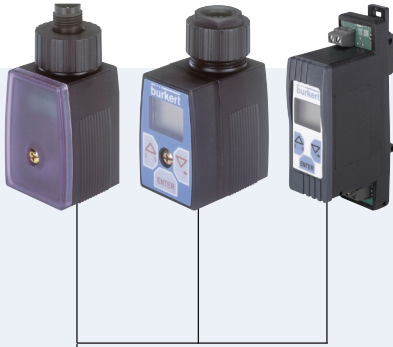


## PWM Control Electronics for Solenoid Control Valves



Type 8605 can be combined with...



**Type 8605**

with operating unit combined with type 2873



**Type 8605**

without operating unit combined with type 2873

- Programmable digital electronics
- Converts an analog input signal to a PWM output signal
- Adjustable PWM frequency
- Cable plug and DIN rail version

The digital control electronics, type 8605, serves to operate valves in the power range from 40-2000 mA.

The electronics converts an external standard signal into a pulse-width modulated (PWM) signal with which the opening of the valve and hence a fluidic output parameter (e.g. flow rate) can be infinitely varied. An internal current control with the duty cycle factor of the PWM signal as control variable ensures that every value of the input signal, irrespective of the thermal condition of the coil, is unambiguously assigned a given value of the effective coil current.

Compared to DC operation of solenoid control valves the PWM operation improves, among others, their sensitivity and hysteresis. A display and operating keys allow the electronics to be easily adapted to a particular solenoid control valve and to the concrete conditions of an application.

| Technical data                         |                                                                                                        |
|----------------------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Operating voltage</b>               | 12-24 V DC                                                                                             |
| <b>Voltage tolerance</b>               | ± 10 %                                                                                                 |
| <b>Residual ripple</b>                 | < 5 %                                                                                                  |
| <b>Power consumption</b>               | approx. 1 W (without valve)                                                                            |
| <b>Output current (valve)</b>          | max. 2 A                                                                                               |
| <b>Ambient temperature</b>             | - 10 to 60 °C                                                                                          |
| <b>Input signal</b>                    | 0-20 mA, 4-20mA or<br>0-5 V, 0-10 V (configurable)                                                     |
| <b>Input impedance</b>                 | < 200 Ω (with current input)<br>> 20 kΩ (with voltage input)                                           |
| <b>Output signal for valve control</b> | PWM signal – frequency adjustable from 80 Hz to 6 kHz                                                  |
| <b>Ramp function</b>                   | Time variable from 0 to 10 sec.                                                                        |
| <b>Version</b>                         | – Cable plug for direct installation (with PG- or M12 connection)<br>– DIN-rail version (DIN EN 50022) |
| <b>Protection class</b>                | Cable plug – IP65<br>DIN-rail – IP40                                                                   |
| <b>Housing material</b>                | Cable plug – Polyamide / PC<br>DIN-rail – Polyamide / PBT                                              |

## Functions of the controller Type 8605

- Microprocessor-controlled electronics
- Compensation of the solenoid coil heating by internal current control
- Configurable ramp function
- Adjustable zero point shutdown
- Display and buttons
- Selectable input signal
- Infinitely variable PWM frequency
- Simple adaptation of the minimum and maximum current (start of opening and full opening) to the actual pressure conditions

## Ordering chart Control Electronics for Solenoid Control Valves

| Version                                               | Max. coil current [mA] | Article no. | 2861, 2871 24 V DC | 2861, 2871 12 V DC | 2863, 2873 24 V DC | 2863, 2873 12 V DC | 2865, 2875 24 V DC | 2865, 2875 12 V DC | 2836 24 V DC | 6024 24 V DC | 6024 12 V DC | 6223 24 V DC | 6223 12 V DC |
|-------------------------------------------------------|------------------------|-------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------|--------------|--------------|--------------|--------------|
| Cable plug with PG-connection                         | 200 – 1000             | 316530      |                    |                    | x                  | x                  | x                  |                    |              | x            |              | x            |              |
| Cable plug with M12-connection                        | 200 – 1000             | 316528      |                    |                    | x                  | x                  | x                  |                    |              | x            |              | x            |              |
| Cable plug with PG-connection                         | 500 – 2000             | 316529      |                    |                    |                    | x                  | x                  | x                  | x            | x            | x            |              | x            |
| Cable plug with M12-connection                        | 500 – 2000             | 316526      |                    |                    |                    | x                  | x                  | x                  | x            | x            | x            |              | x            |
| Cable plug with PG-connection without operating unit  | 200 – 1000             | 316521      |                    |                    | x                  | x                  | x                  |                    |              | x            |              | x            |              |
| Cable plug with M12-connection without operating unit | 200 – 1000             | 316522      |                    |                    | x                  | x                  | x                  |                    |              | x            |              | x            |              |
| Cable plug with PG-connection without operating unit  | 500 – 2000             | 316523      |                    |                    |                    | x                  | x                  | x                  | x            | x            | x            |              | x            |
| Cable plug with M12-connection without operating unit | 500 – 2000             | 316525      |                    |                    |                    | x                  | x                  | x                  | x            | x            | x            |              | x            |
| DIN-rail                                              | 40 – 220               | 316531      | x                  |                    |                    |                    |                    |                    |              |              |              |              |              |
| DIN-rail                                              | 200 – 1000             | 316532      | x                  | x                  | x                  | x                  | x                  |                    |              | x            |              | x            |              |
| DIN-rail                                              | 500 – 2000             | 316533      |                    |                    |                    | x                  | x                  | x                  | x            | x            | x            |              | x            |

### Notes:

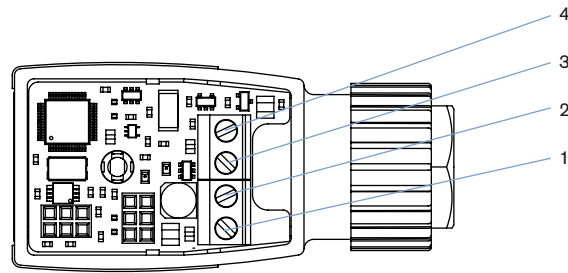
- With two current ranges possible please choose the lower one.
- Please consider the internal resistance of the valve if used in combination with valves of other vendors. The internal resistance should not fall below 7Ω because the control electronics might be damaged if the resistance of the valve is too low.
  - Successor types:
    - 2861, 2871 with 2822, 2824
    - 2863, 2873 with 2833
    - 2865, 2875 with 2835
- When using the older type please choose the control electronics indicated for the adequate new type.

## Ordering chart accessories

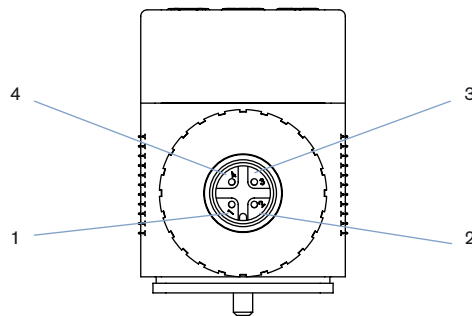
| Version                                  | Article no. |
|------------------------------------------|-------------|
| Control unit for plug-on module          | 582878      |
| Right-angle plug M12, 4 pins             | 784301      |
| M12 connector with 5 m cable, 4 pins     | 918038      |
| Cover (for control unit without display) | 670549      |

## Pin Assignment

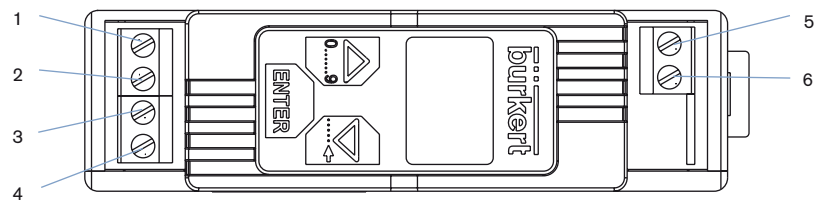
### Cable plug PG



### Cable plug M12



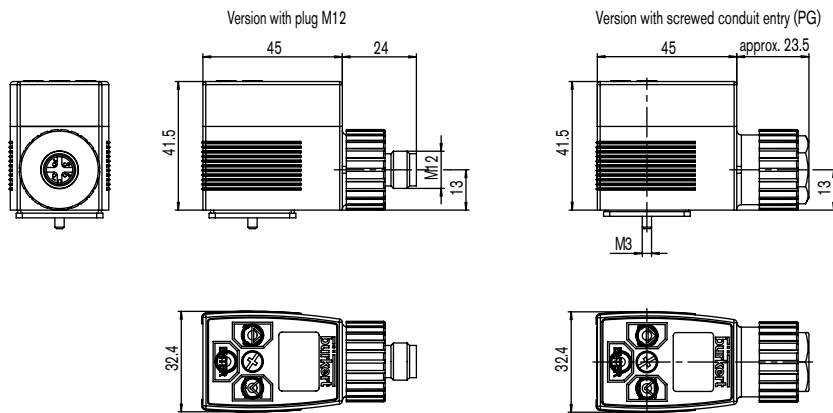
### DIN-rail



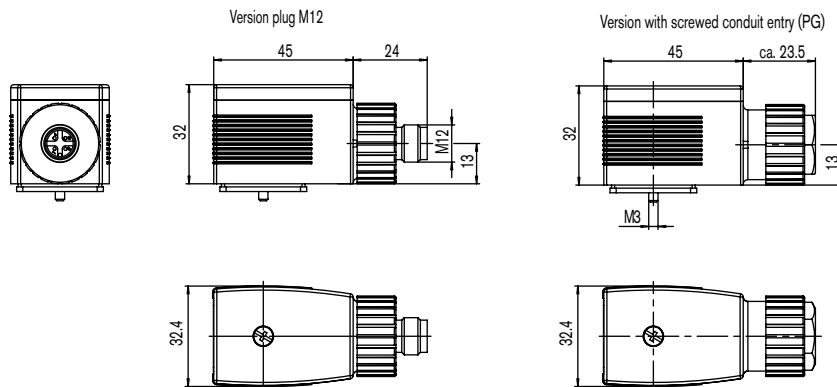
- 1 : + 12-24 V DC
- 2 : GND
- 3 : Standard signal GND
- 4 : Standard signal +
- 5 : Valve
- 6 : Valve

## Dimensions [mm]

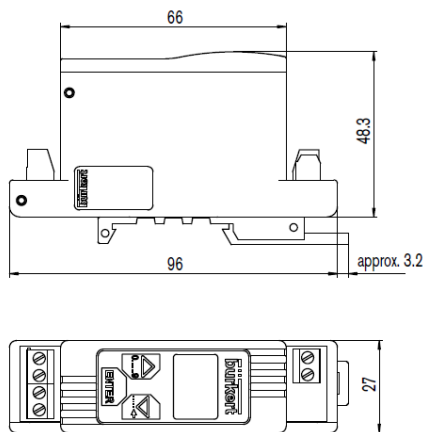
## Cable plug with operating unit



## Cable plug without operating unit



## DIN-rail



In case of special application conditions,  
please consult for advice.

We reserve the right to make technical  
changes without notice.

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