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Омск (3812)21-46-40  
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## РОТАМЕТРЫ

### DK 46, DK 47, DK 48, DK 800





## Miniature flowmeters DK 46, DK 47, DK 48, DK 800

with glass metering cones

### Options

All flowmeters (apart from DKR 46) can be equipped with limit switches and differential pressure regulators (options).

Front plates and holding devices are available for panel mounting.

The flowmeters can be converted into bench instruments with the aid of a support base (option).

### Instrument designation

Instruments with top and bottom connection block of:

Stainless steel = DK ... / R  
Brass = DK ... / N  
PVDF = DK ... / PV

### DK 46, DK 47, DK 48, DK 800

All flowmeters are equipped with a needle valve in the base to facilitate precise setting of gas and liquid flow rates. On request, these valves can also be fitted in the top connection block.

The mounts are made of stainless steel, brass or PVDF and feature a specially designed fitting to take the glass cone.

This device permits easy cone replacement without removal of the mount.



### Compact flowmeter DKR 46

The DKR 46 is a DK 46 miniature flowmeter plus an RE flow regulator combined to form one compact unit.



**Technical data**

| Instrument type  | DK 46<br>DKR 46   | DK 47                         | DK 48                         | DK 800                        |
|--|---|-------------------------------|-------------------------------|-------------------------------|
| <b>Measuring range</b> (100% values)   |   |                               |                               |                               |
| Water at 20 °C, l/h; (68 °F, US GPH)   | 2.5 to 160*<br>(0.66 to 42.27)*   | 2.5 to 100<br>(0.66 to 26.42) | 0.4 to 100<br>(0.11 to 26.42) | 2.5 to 160<br>(0.66 to 42.27) |
| Air at 1.2 bar abs. (17.4 psia), 20 °C, l/h; (68 °F, SCFH)   | 5 to 1600*<br>(0.19 to 59.55)   | 16 to 800<br>(0.6 to 29.77)   | 16 to 3000<br>(0.6 to 111.65) | 5 to 4300<br>(0.19 to 160.03) |
| DK 48: 1.013 bar abs. (14.7 psia), 20 °C (68 °F) air<br>* DKR 46: max. 40 l/h (10.57 US GPH) water or 800 l/h (29.77 SCFH) air   |   |                               |                               |                               |
| <b>Turn-down ratio</b>   | 10 : 1  | 10 : 1                        | 10 : 1                        | 10 : 1                        |
| <b>Accuracy class</b> to VDI/VDE Code 3513, Sh. 2  | 4   | 2.5                           | 1                             | 2.5                           |
| <b>Measuring cone</b>  |   |                               |                               |                               |
| Length in mm (inches)  | 65 (2.65")  | 150 (5.91")                   | 300 (11.81")                  | 100 (3.94")                   |
| Scale graduation   | flow units, DK 48 also in mm  |                               |                               |                               |
| Float shapes   | Ball  | Ball                          | A III                         | Ball                          |
| <b>Operating data</b>  |   |                               |                               |                               |
| max. allowable operating pressure at 20 °C (68 °F). Test pressure is 1.5 times the specified max. allowable operating pressure.* |   |                               |                               |                               |
| Standard   | 10 bar<br>(145 psig)  | 10 bar<br>(145 psig)          | 10 bar<br>(145 psig)          | 10 bar<br>(145 psig)          |
| DK ... / PV  | 6 bar<br>(87 psig)  | 6 bar<br>(87 psig)            | 6 bar<br>(87 psig)            | 6 bar<br>(87 psig)            |
| max. process temperature   | 100 °C (212 °F)   | 100 °C (212 °F)               | 100 °C (212 °F)               | 100 °C (212 °F)               |
| with limit switches  | 80 °C (176 °F)  | 80 °C (176 °F)                | 80 °C (176 °F)                | 80 °C (176 °F)                |
| * At temperatures > 20 °C (68 °F) pressure drops at the rate of 1% per degree C  |   |                               |                               |                               |
| <b>Overall height and connection dimensions</b> see Dimensions and Weights   |   |                               |                               |                               |
| <b>Connection</b>  |   |                               |                               |                               |
| Standard   | 1/4" NPT  | 1/4" NPT                      | 1/4" NPT                      | 1/4" NPT                      |
| Adapters   | Ermeto 6 and 8, Dilo, tubing nozzle 6 or 8 mm, Gyrolok and Swagelok   |                               |                               |                               |
| <b>Materials</b>   |   |                               |                               |                               |
| Measuring cone   | borosilicate glass  |                               |                               |                               |
| Float  |   |                               |                               |                               |
| Standard   |   |                               |                               |                               |
| DK 46, 47, 800   | Stainless steel 1.4401 (316)  |                               |                               |                               |
| DK 48  | Stainless steel 1.4571 (316 Ti)   |                               |                               |                               |
| Options  |   |                               |                               |                               |
| DK 46, 47, 800   | titanium, POM (polyoxymethylene), glass   |                               |                               |                               |
| DK 48  | steatite, aluminium, hard rubber  |                               |                               |                               |
| Float stop   | PTFE  |                               |                               |                               |
| Valve spindle  | Stainless steel 1.4571 (316 Ti)   |                               |                               |                               |
| Gaskets  |   |                               |                               |                               |
| Standard   | Viton   |                               |                               |                               |
| Option   | PTFE/FF KM (perfluorinated elastomer) PTFE (not for DK ... / PV)  |                               |                               |                               |
| Mount  | Top/bottom connection block: stainless steel 1.4581 (316 C17), brass or PVDF<br>Rail: stainless steel 1.4571 (316 Ti) |                               |                               |                               |
| <b>Ringinitiators</b>  | DK 46   | available                     | available                     | available                     |

# DK 46, DKR 46, DK 47, 48, 800

## Needle valves for gases and liquids

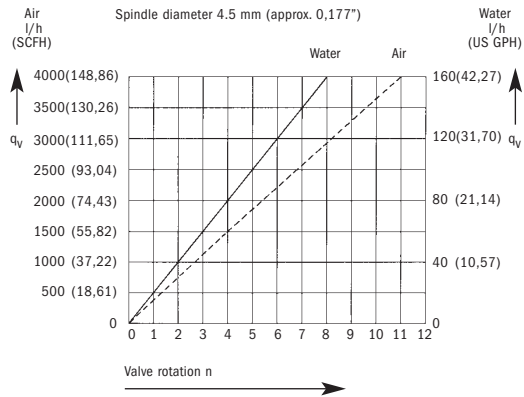
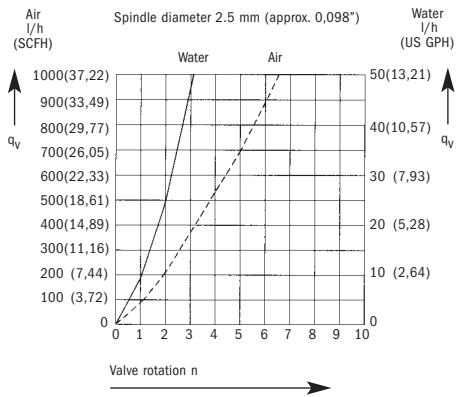
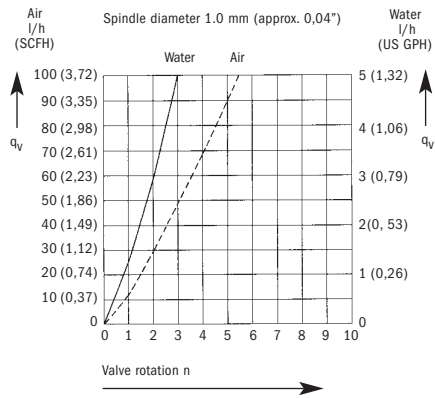
Needle valves allow precise setting of the flow rate.

| Spindle<br>dia. mm | (inches) | Max. flow rate ( $q_v$ ) |          | Water* l/h (US GPH) |         | $K_v$ factor<br>m <sup>3</sup> /h | $C_v$ factor<br>US GPM |
|--------------------|----------|--------------------------|----------|---------------------|---------|-----------------------------------|------------------------|
|                    |          | Air* l/h                 | (SCFH)   |                     |         |                                   |                        |
| 1.0                | (0.04")  | 100                      | (3.72)   | 5                   | 0(1.32) | 0.018                             | 0.021                  |
| 2.5                | (0.098") | 1000                     | (37.22)  | 50                  | (13.21) | 0.15                              | 0.18                   |
| 4.5                | (0.177") | 4300                     | (160.03) | 160                 | (42.27) | 0.48                              | 0.56                   |

$K_v, C_v$  = valve characteristic

\* Reference conditions: 20 °C (68 °F), 1.013 bar abs. (14.7 psia).

### Valve characteristics



## DK 46, DKR 46, DK 47, 48, 800

### Flow table

#### Standard float materials

DK 46, DKR 46, DK 47, DK 800: stainless steel 1.4401 (316)  
 DK 48: stainless steel 1.4571 (316 Ti)  
 100% flow values  
 Turn-down ratio 10 : 1

#### Reference conditions

Water at 20 °C (68 °F)  
 Air at 20 °C (68 °F) DK 46, DKR 46, DK 47, DK 800,  
 1.2 bar abs. (17.4 psia)  
 DK 48, 1.013 bar abs. (14.7 psia)

| Ball dia. mm | Cone No. | Water           |        |       |        |       |        |        |        | Air             |        |       |       |       |        |        |        |
|--------------|----------|-----------------|--------|-------|--------|-------|--------|--------|--------|-----------------|--------|-------|-------|-------|--------|--------|--------|
|              |          | DK 46<br>DKR 46 |        | DK 47 |        | DK 48 |        | DK 800 |        | DK 46<br>DKR 46 |        | DK 47 |       | DK 48 |        | DK 800 |        |
|              |          | l/h             | US/GPH | l/h   | US/GPH | l/h   | US/GPH | l/h    | US/GPH | l/h             | SCFH   | l/h   | SCFH  | l/h   | SCFH   | l/h    | SCFH   |
| 4            | G 13.11  | 2.5             | 0.66   |       |        | 0.4   | 0.11   | 2.5    | 0.66   | 5               | 0.19   | 16    | 0.60  | 16    | 0.60   | 5      | 0.19   |
| 4            | G 14.06  |                 |        |       |        | 0.6   | 0.16   |        |        | 8               | 0.30   | 40    | 1.49  | 25    | 0.93   | 8      | 0.30   |
| 4            | G 14.08  |                 |        |       |        | 1.6   | 0.26   |        |        | 16              | 0.60   |       |       | 40    | 1.49   | 16     | 0.60   |
| 4            | G 15.07  |                 |        |       |        | 1.6   | 0.42   |        |        | 40              | 1.49   |       |       | 60    | 2.23   | 40     | 1.49   |
| 4            | G 15.09  |                 |        |       |        | 2.5   | 0.66   |        |        | 60              | 2.23   |       |       | 90    | 3.35   | 60     | 2.23   |
| 4            | G 15.12  |                 |        |       |        | 4.6   | 1.06   |        |        |                 |        |       |       | 140   | 5.21   |        |        |
| 6            | G 16.08  | 5.5             | 1.32   | 3     | 0.66   | 6.4   | 1.59   | 5      | 1.32   | 100             | 3.72   | 160   | 2.23  | 200   | 7.44   | 100    | 3.72   |
| 6            | G 16.12  | 12.5            | 3.17   | 5     | 1.32   | 10.4  | 2.64   | 12     | 3.17   | 250             | 9.30   | 100   | 3.72  | 300   | 11.16  | 250    | 9.30   |
| 6            | G 17.08  | 25.5            | 6.61   | 12    | 3.17   | 16.4  | 4.23   | 25     | 6.61   | 500             | 18.61  | 250   | 9.30  | 500   | 18.61  | 500    | 18.61  |
| 6            | G 17.12  | 40.5            | 10.57  | 25    | 6.61   | 25.4  | 6.61   | 40     | 10.57  | 800             | 29.77  | 500   | 18.61 | 800   | 29.77  | 800    | 29.77  |
| 6            | G 18.06  | 60*             | 15.85* | 40    | 10.57  | 40.4  | 10.57  | 60     | 15.85  | 1600*           | 59.55* | 800   | 29.77 | 1200  | 44.66  | 1000   | 37.22  |
| 6            | G 18.08  | 100*            | 26.42* | 60    | 15.85  | 63.4  | 16.64  | 100    | 26.42  |                 |        |       |       | 2000  | 74.43  | 1800   | 66.99  |
| 6            | G 18.12  |                 |        | 100   | 26.42  | 100.4 | 26.42  | 120    | 31.70  |                 |        |       |       | 3000  | 111.65 | 2400   | 89.32  |
| 6            |          |                 |        |       |        |       |        | 160    | 42.27  |                 |        |       |       |       |        | 3000   | 111.65 |
| 6            |          |                 |        |       |        |       |        |        |        |                 |        |       |       |       |        | 3500   | 130.26 |
| 6            |          |                 |        |       |        |       |        |        |        |                 |        |       |       |       |        | 4300   | 160.03 |
| 8            |          | 120*            | 15.85* |       |        |       |        |        |        |                 |        |       |       |       |        |        |        |
| 8            |          | 160*            | 42.27* |       |        |       |        |        |        |                 |        |       |       |       |        |        |        |

\* (not DKR 46)

## Differential pressure regulators

Differential pressure regulators are used to help maintain constant flow rates at fluctuating operating pressure.

- Minimum pressure levels are required to permit operation of the regulators (see regulator characteristics)
- Differential pressure regulators are not pressure reducing valves
- Max. flow rate: 4000 l/h (2.48 SCFM) air or 160 l/h (0.7 US GPM) water.
- Connections:  
Standard: 1/4" NPT  
Special version: Serto 6 or 8, tubing nozzles 6 or 8 mm, Ermeto 6 or 8, Dilo, Gyrolok, Swagelok
- Max. allowable operating pressure [at 20 °C (68 °F)]:  
10 bar (145 psig)
- Temperatures up to max. 80 °C (176 °F)  
[option 100 °C (212 °F)].

## Application ranges

### Inlet pressure regulators, type RE, NRE

The RE and NRE regulators help maintain a constant flow rate for gases and liquids at variable inlet pressure and constant outlet pressure.

### Outlet pressure regulators, type RA, NRA

For gaseous products, the RA and NRA regulators help maintain a constant flow rate at variable outlet pressure and constant inlet pressure.

In order to function, the outlet pressure regulator requires a specific minimum pressure difference between inlet and outlet pressures.

Inlet pressure  $p_1$  must always be greater than outlet pressure  $p_2$ .

## Technical data

| Type                              | Identifi-<br>cation | Material        | Max. measuring range |        |              |       | Min. inlet<br>pressure p1          |            |
|-----------------------------------|---------------------|-----------------|----------------------|--------|--------------|-------|------------------------------------|------------|
|                                   |                     |                 | Water**<br>l/h       | US GPM | Air**<br>l/h | SCFM  | p1 in bar                          | p1 in psig |
| <b>Inlet pressure regulators</b>  |                     |                 |                      |        |              |       |                                    |            |
| RE-1000-R                         | RE 10               | stainless steel | 40                   | 0.18   | 1000         | 0.62  | 0.5                                | 7.25       |
| RE-1000-N                         | RE 10               | brass           | 40                   | 0.18   | 1000         | 0.62  | 0.5                                | 7.25       |
| RE-4000-R                         | RE 40               | stainless steel | 160                  | 0.70   | 4000         | 2.48  | 1                                  | 14.50      |
| RE-4000-N                         | RE 40               | brass           | 160                  | 0.70   | 4000         | 2.48  | 1                                  | 14.50      |
| NRE-100-R                         | NRE 1               | stainless steel | -                    | -      | 100          | 0.062 | 0.06                               | 0.87       |
| NRE-100-N                         | NRE 1               | brass           | -                    | -      | 100          | 0.062 | 0.06                               | 0.87       |
| NRE-800-R                         | NRE 8               | stainless steel | -                    | -      | 800          | 0.50  | 0.2                                | 2.90       |
| NRE-800-N                         | NRE 8               | brass           | -                    | -      | 800          | 0.50  | 0.2                                | 2.90       |
| <b>Outlet pressure regulators</b> |                     |                 |                      |        |              |       |                                    |            |
|                                   |                     |                 |                      |        |              |       | <b>Min. differential pressure*</b> |            |
|                                   |                     |                 |                      |        |              |       | <b>Δp in bar</b>                   |            |
| RA-1000-R                         | RA 10               | stainless steel | -                    | -      | 1000         | 0.62  | 0.4                                | 5.80       |
| RA-1000-N                         | RA 10               | brass           | -                    | -      | 1000         | 0.62  | 0.4                                | 5.80       |
| RA-4000-R                         | RA 40               | stainless steel | -                    | -      | 4000         | 2.48  | 0.8                                | 11.60      |
| RA-4000-N                         | RA 40               | brass           | -                    | -      | 4000         | 2.48  | 0.8                                | 11.60      |
| NRA-800-R                         | NRA 8               | stainless steel | -                    | -      | 800          | 0.50  | 0.15                               | 2.18       |
| NRA-800-N                         | NRA 8               | brass           | -                    | -      | 800          | 0.50  | 0.15                               | 2.18       |

\* Differential pressure between inlet and outlet pressures

\*\* Reference conditions: 20 °C (68°F), 1.013 bar abs. (14.7 psia)

## DK 46, DKR 46, DK 47, 48, 800

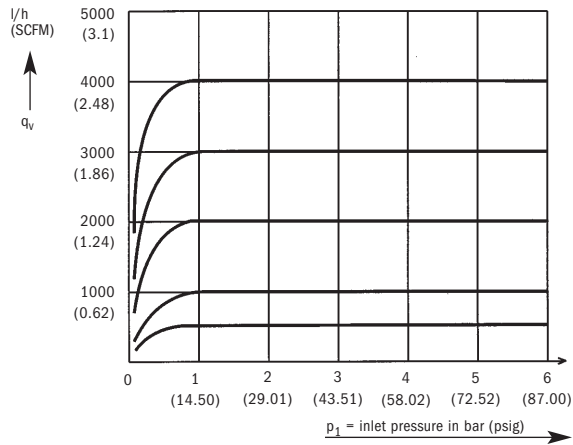
### Regulator characteristics

Inlet pressure regulators Type RE, NRE

Example: variable inlet pressure  $\leq 6$  bar ( $\leq 87$  psig)

Air at 20 °C (68 °F), 1.013 bar abs. (14.7 psia)

$q_v$  = flow rate



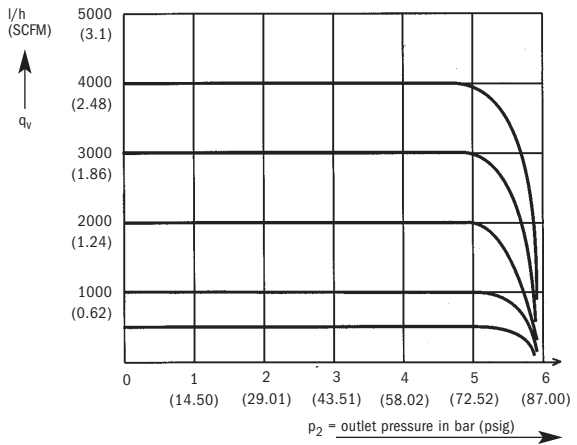
Outlet pressure regulators Type RA, NRA

Example: inlet pressure 6 bar (87 psig),

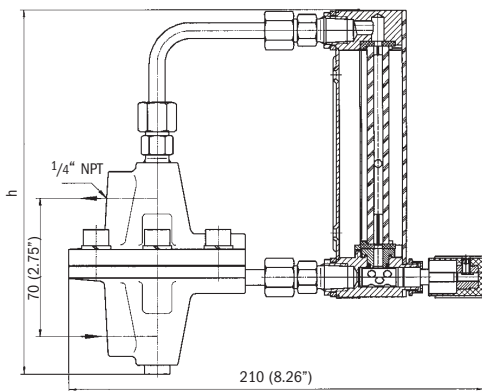
variable outlet pressure  $\leq 5.5$  bar ( $\leq 80$  psig)

Air at 20 °C (68 °F), 1.013 bar abs. (14.7 psia)

$q_v$  = flow rate



### Dimensions



| h      | mm  | inches |
|--------|-----|--------|
| DK 46  | 148 | 5.83   |
| DK 47  | 233 | 9.17   |
| DK 48  | 383 | 15.08  |
| DK 800 | 183 | 7.20   |

**Limit switches**

To signal specific flow rates, the miniature flowmeters can be equipped with limit switches that initiate an electrical signal when a preset flow value has been reached. One limit switch is required for each limit value.

Limit switches are only suitable for flowmeters fitted with stainless steel floats.

The limit switches are inductive ring sensors designed to be slipped over the glass cone of DK flowmeters. An electrical signal is initiated when the metal float passes through the sensor.

Monostable limit switches (see Table "Limit Switches") act as pulse contacts. Bistable limit switches detect the direction of movement of the float. Therefore a clear differentiation can be made between "above" or "below" the ring sensor.

2-wire limit switches have electrical values according to DIN EN 50227 (Namur wiring recommendations). Disconnect diodes are required.

3-wire limit switches can be wired in without disconnect.

Function boxes with PG gland can be fitted to the flowmeters for connection to the limit switches. For bistable limit switches an EMC filter is needed in the junction box. Alternatively the filter unit can be mounted on a TS 32 rail.

Ring sensors function in the same way as pulse contacts.

RC 10-14-N3 (TG 10-1/bi) and RC 15-14-N3 (TG 15-1/bi) are bistable ring sensors. The bistable ring sensors are supplied with an EMC filter either in a PG 11 junction box or in the form of a filter unit in a DIN rail housing. This arrangement enables the direction of movement of the float to be identified, thus providing a clear indication of the float position – whether above or below the ring sensor.

Isolation switching amplifiers are required to operate the ring sensors.

Junction boxes with PG screw connection can be fitted to the flowmeters for connection of the limit switches.

**Application ranges for the limit switches**

|   | <b>DK 48</b> | <b>DK 46, DK 47, DK 800</b> |
|---|--------------|-----------------------------|
|   | Cone No.     | Ball dia.                   |
| <b>RC 10-14-N0</b><br><b>RC 10-14-N3</b>                          | G 15.07      | 4 mm (0.16")                |
|   | G 15.09      |                             |
|   | G 15.12      |                             |
| <b>RC 15-14-N0</b><br><b>RC 15-14-N3</b><br><b>RB 15-14-E2-Bi</b> | G 16.08      | 6 mm (0.24")                |
|   | G 16.12      |                             |
|   | G 17.08      |                             |
|   | G 17.12      |                             |

From a measuring range of 100 l/h (26.42 US GPH) water and 2400 l/h (89.32 SCFH) air onwards, the RC 15-14-N0 and RC 15-14-N3 limit switch can only be used as a minimum contact up to approx. 40% of the range.



**Technical data**

**Limit switches**

| Version        | Function   | Approval          | Self-inductance | Self-capacitance | Type of protection   | Connection   |
|----------------|--|-------------------|-----------------|------------------|----------------------|--------------|
| RC 10-14-N0    | monostable, dia. 10 mm (dia. 0.4")                           | PTB 99 ATEX 2128X | 100 µH          | 150 nF           | EEx ia IIC T1 ... T6 | DIN EN 50227 |
| RC 10-14-N3    | bistable, dia. 10 mm <sup>1)</sup> (dia. 0.4") <sup>1)</sup> | PTB 99 ATEX 2128X | 120 µH          | 90 nF            | EEx ia IIC T1 ... T6 | DIN EN 50227 |
| RC 15-14-N0    | monostable, dia. 15 mm (dia. 0.6")                           | PTB 99 ATEX 2128X | 100 µH          | 150 nF           | EEx ia IIC T1 ... T6 | DIN EN 50227 |
| RC 15-14-N3    | bistable, dia. 15 mm <sup>1)</sup> (dia. 0.6") <sup>1)</sup> | PTB 99 ATEX 2128X | 70 µH           | 90 nF            | EEx ia IIC T1 ... T6 | DIN EN 50227 |
| RB 15-14-E2-bi | bistable, dia. 15 mm <sup>1)</sup> (dia. 0.6") <sup>1)</sup> | non Ex-approval   | -               | -                | -                    | 3-wire       |

<sup>1)</sup> One of the EMC filters specified below is required for operation of bistable limit switches in Europe.

**Limit switch Type RC ...**

|   |  |
|---|--|
| Connection technique  | 2-wire connection to DIN EN 50227  |
| Rated voltage   | 8 V DC   |
| Power consumption   |  |
| Version RC ... NO   | 3 mA (active area clear)<br>1 mA (active area obscured)                                |
| Version RC ... N3   | below limit value 1mA<br>above limit value 3mA   |
| Ambient temperature   | - 20°C to + 100°C (- 4°F to + 212°F)   |
| Protection category to DIN 60529/IEC 529                              | IP 67, equivalent to NEMA 6  |
| Electromagnetic compatibility (EMC)                                   | to EN 60947-5-2  |
| Connection  | 0.2 m (8") PVC cable (0.14 mm <sup>2</sup> ) (0.00022 sqin) or connecting housing PG11 |
| Housing material  | PBT  |
| Electrical characteristics to DIN 50227 (NAMUR recommended circuitry) |  |

**Version RB ...**

|                                     |   |
|-------------------------------------|---|
| Connection technology               | 3-wire technology   |
| Operating voltage U <sub>b</sub>    | 10 V to 30 V  |
| Operating current I <sub>b</sub>    | 0 to 100 mA   |
| Output voltage U <sub>a</sub>       | below limit value 1 V<br>above limit value U <sub>b</sub> - 3 V<br>after switching on 1 V |
| No-load current                     | 20 mA   |
| Ambient temperature                 | -25 to +70°C (-13 to +158°F)  |
| Protection category                 | IP 67 (EN 60529)  |
| Electromagnetic compatibility (EMC) | to EN 60947-5-2   |
| Connection                          | 2 m (6.56 ft) PUR cable (no terminal box on device)                                       |
| Core cross-section                  | 0.14 mm <sup>2</sup> (0.00022 sqin)   |
| Housing material                    | PBT   |

**EMC filters for limit switches**

| Version       | Function                                     | Approval         | Self-inductance <sup>2)</sup> | Self-capacitance <sup>2)</sup> | Type of protection   |
|---------------|--|------------------|-------------------------------|--------------------------------|----------------------|
| EMC-Y38620    | EMC filter 1 Channel, internal <sup>4)</sup> | DMT 99 ATEX 104X | 600 µH                        | 40 nF                          | EEx ia IIC T6 or     |
| EMC-Y38622    | EMC filter 2 Channel, Internal <sup>4)</sup> | DMT 99 ATEX 104X | 600 µH <sup>3)</sup>          | 40 nF <sup>3)</sup>            | EEx ia IIC T5 or     |
| KC-EMC-Y38624 | EMC filter 1 Channel, external <sup>5)</sup> | DMT 99 ATEX 104X | 600 µH                        | 40 nF                          | EEx ia IIC T1 ... T4 |

<sup>2)</sup> the effective inner inductance and capacitance of the EMC filter additionally need to be taken into account.

<sup>3)</sup> per channel, <sup>4)</sup> filter built into the DK terminal box, <sup>5)</sup> filter in external DIN rail housing

**Max. allowable ambient temperature for limit switches**

| Circuit with peak values of        | Ui < 16V     | Ii < 25 mA   | Pi < 34 mW    | Ui < 16V     | Ii < 25 mA   | Pi < 64 mW    | Ui < 16V     | Ii < 52 mA   | Pi < 169 mW  |
|------------------------------------|--------------|--------------|---------------|--------------|--------------|---------------|--------------|--------------|--------------|
| Temperature class                  | T6           | T5           | T4 ... T1     | T6           | T5           | T4 ... T1     | T6           | T5           | T4 ... T1    |
| Max. allowable ambient temperature | 75°C (167°F) | 90°C (194°F) | 100°C (212°F) | 70°C (158°F) | 85°C (185°F) | 100°C (212°F) | 55°C (131°F) | 70°C (158°F) | 90°C (194°F) |

**Max. allowable ambient temperature for EMC filters**

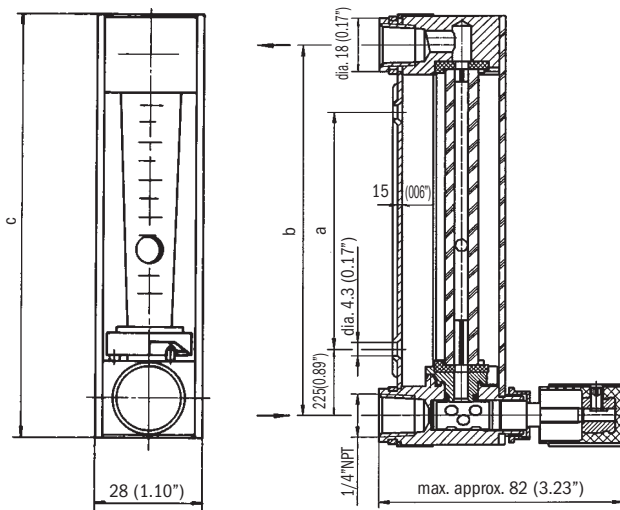
|                                    |   |   |   |   |   |   |              |              |               |
|------------------------------------|---|---|---|---|---|---|--------------|--------------|---------------|
| Max. allowable ambient temperature | - | - | - | - | - | - | 65°C (149°F) | 80°C (176°F) | 100°C (212°F) |
|------------------------------------|---|---|---|---|---|---|--------------|--------------|---------------|

**DK 46, DKR 46, DK 47, 48, 800**

**Dimensions and weights**

| Instrument type | Dimensions in mm and inches |        |     |        |     |        |              |      |     |       |             |        |     |        | Weight |      |
|-----------------|-----------------------------|--------|-----|--------|-----|--------|--------------|------|-----|-------|-------------|--------|-----|--------|--------|------|
|                 | a                           |        | b   |        | c   |        | Panel recess |      |     |       | Cover plate |        |     |        | kg     | lbs  |
|                 | mm                          | inches | mm  | inches | mm  | inches | d            | e    | f   | g     | mm          | inches | mm  | inches |        |      |
| DK 46           | 045                         | 01.77  | 090 | 03.54  | 111 | 04.37  | 32           | 1.26 | 128 | 05.04 | 40          | 1.57   | 145 | 05.71  | 0.5    | 1.10 |
| DK 47           | 130                         | 05.12  | 175 | 06.89  | 196 | 07.72  | 32           | 1.26 | 213 | 08.39 | 40          | 1.57   | 230 | 09.06  | 0.6    | 1.32 |
| DK 48           | 280                         | 11.02  | 325 | 12.80  | 346 | 13.62  | 32           | 1.26 | 363 | 14.29 | 40          | 1.57   | 380 | 14.96  | 0.7    | 1.54 |
| DK 800          | 080                         | 03.15  | 125 | 04.92  | 146 | 05.75  | 32           | 1.26 | 163 | 06.42 | 40          | 1.57   | 180 | 07.09  | 0.4    | 0.88 |
| DKR 46          | -                           | -      | -   | -      | -   | -      | -            | -    | -   | -     | -           | -      | -   | -      | 2.2    | 4.85 |

**DK 46, DK 47, DK 48, DK 800**



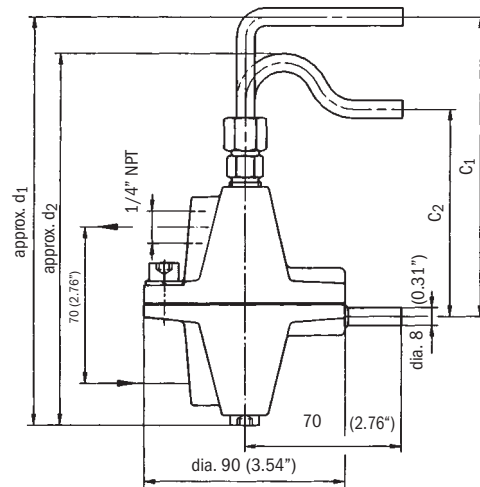
**Dimensions in mm and inches**

**Flow regulators RA, NRA, RE, NRE**

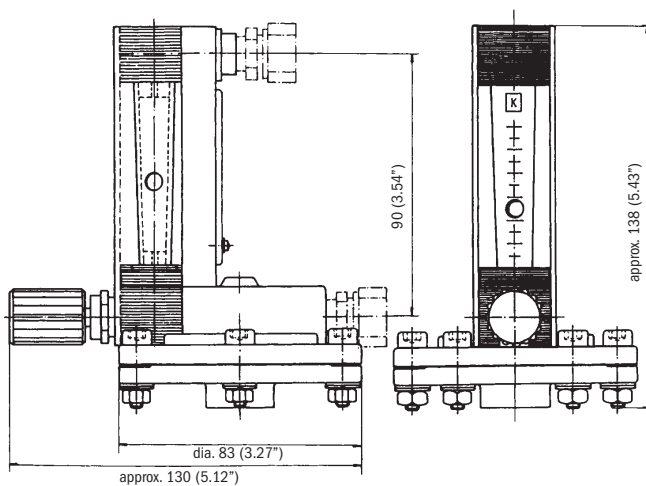
**Instrument Dimensions**

| Instrument type | c <sub>1</sub> |        | c <sub>2</sub> |        | d <sub>1</sub> |        | d <sub>2</sub> |        |
|-----------------|----------------|--------|----------------|--------|----------------|--------|----------------|--------|
|                 | mm             | inches | mm             | inches | mm             | inches | mm             | inches |
| DK 46           | -              | -      | 90             | 3.54   | -              | -      | 163            | 6.42   |
| DK 47           | 175            | 6.89   | -              | -      | 223            | 8.78   | -              | -      |
| DK 48           | 325            | 12.8   | -              | -      | 373            | 14.7   | -              | -      |
| DK 800          | 125            | 4.92   | -              | -      | 173            | 6.81   | -              | -      |

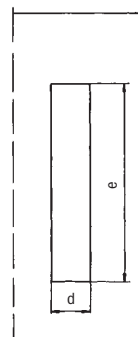
**Weight: 1.5 kg (3.31 lbs)**



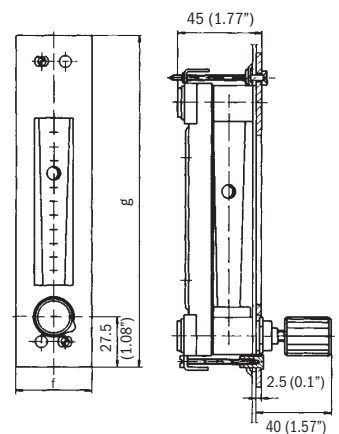
**DKR 46**



**Panel mounting**



**Cover plate**



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Ангарск (3955)60-70-56  
Архангельск (8182)63-90-72  
Астрахань (8512)99-46-04  
Барнаул (3852)73-04-60  
Белгород (4722)40-23-64  
Благовещенск (4162)22-76-07  
Брянск (4832)59-03-52  
Владивосток (423)249-28-31  
Владикавказ (8672)28-90-48  
Владимир (4922)49-43-18  
Волгоград (844)278-03-48  
Вологда (8172)26-41-59  
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Екатеринбург (343)384-55-89  
Иваново (4932)77-34-06  
Ижевск (3412)26-03-58  
Иркутск (395)279-98-46  
Казань (843)206-01-48

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Кемерово (3842)65-04-62  
Киров (8332)68-02-04  
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Кострома (4942)77-07-48  
Краснодар (861)203-40-90  
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