DFQ 96

Data Sheet
M Series
090.D.101.06

Phase Sequence Indicator

DEKRA

CE

WEIGEL
Application

The phase sequence indicator DFQ 96 (M series) is used to determine the phase sequence in three–phase systems up to 500 V by a direct connection. A disc marked with two arrows rotates clockwise (in arrow direction) when pressing a button accessible on indicator front, provided the three phases are logically connected in accordance with the indicator terminal markings, otherwise the disc will rotate anticlockwise.

In case of an incorrect phase sequence, the correct direction of rotation is obtained by interchanging any of two phases. Phase sequence indicators are housed in pressed steel cases suitable to be mounted in switchboards, control panels, machinery and/or mosaic grid panels.

Functional Principle

Induction–movement with a freely rotating disc.

Mechanical Data

case details square case suitable to be mounted in switchboards or mosaic grid panels, stackable
material of case pressed steel
material of window glass
colour of bezel black (similar to RAL 9005)
position of use vertical
panel thickness 1 ... 15 mm
mounting stackable next to each other
terminals hexagon studs, M3 screws and wire clamps C6

dimensions DFQ 96
bezel □ 96 mm
case □ 90.5 mm
deepth 62 mm
panel cutout □ 92x10.8 mm
weight approx. 0.4 kg

Electrical Data

measuring unit phase sequence in three–phase systems
frequency range 40 ... 100 Hz
voltage range 100 ... 500 V
power consumption at 100 V approx. 0.5 VA per phase
at 500 V approx. 2 VA per phase
safe operational period 5 min max.
measurement category CAT III
operating voltage 300 V
pollution level 2
enclosure code IP 52 case front side
IP 00 for terminals without protection against accidental contact
IP 20 for terminals protected against accidental contact

Indication

Disc marked with two arrows rotates behind dial plate with an arrow indicating the correct phase sequence.

Disc diameter 36 mm

Environmental

climatic suitability climatic class 2 according to VDE/VDI 3540, sheet 2
operating temperature range –25 ... +40°C
storage temperature range –25 ... +65°C
relative humidity ≤ 75% annual average, non–condensing
shock resistance 15 g, 11 ms
vibration resistance 2.5 g, 5 ... 55 Hz

Rules and Standards

DIN 43 718 Measurement and control; front-frames and frontpanels of measurement and control equipment; principal dimensions
DIN 43 802 Line scales and pointers for indicating electrical measuring instruments; general requirements
DIN 16 257 Nominal positions and position symbols used for measuring instruments
DIN EN 60 051 Direct acting indicating analogue electrical measuring instruments and their accessories
DIN EN 60 529 Enclosure codes by housings (IP-code)
DIN EN 61 010-1 Safety requirements for electrical measuring, control and laboratory equipment Part 1: General requirements
DIN EN 61 326-1 Electrical equipment for measurement, control and laboratory use – EMC requirements Part 1: General requirements
DIN IEC 61 554 Panel mounted equipment – Electrical measuring instruments – Dimensions for panel mounting
VDE/VDI 3540 sheet 2 Reliability of measuring and control equipment (classification of climates)

* also refer to “Options”
Options

- **frequency**: 400 Hz on request
- **case**: portable type on request
- **window**: non-glaring glass
- **colour of bezel**: gray (similar to RAL 7037)
- **position of use**: horizontal or to be specified 15°...165°
- **performance**
  - increased mechanical loads: shock 30 g, 11 ms
  - vibration: 5 g, 5 ... 55 Hz
  - climatic suitability: limited use in the tropics
    - climatic class 3 according to VDE/VDI 3540, sheet 2
- **with operating temperature range**: −10 ... +55°C
- **marine application**: non-certified
- **enclosure code**: IP 54 splash-water protected front
- **accessories**
  - terminal protection against accidental contact
  - full-sized rear cover or protective sleeves
  - terminals: connector blades 6.3 x 0.8
  - dial
  - custom logo: none or as specified

Connections

- **L1 (R)**
- **L2 (S)**
- **L3 (T)**

Dimensions

- **DFQ 96**
  - a: 96
  - b: 90
  - c: 62
### Ordering Information

<table>
<thead>
<tr>
<th>Type</th>
<th>DFQ</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phase Sequence Indicator</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Front dimensions 96</strong></td>
<td>96 mm x 96 mm</td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td>40 ... 100 Hz  (^1) (400) Hz  (^3)</td>
</tr>
</tbody>
</table>
| **Version**   | Panel type \(^1\)  
non–portable type \(^2\) |
| **Window**    | Glass \(^1\)  
non–glaring glass |
| **Colour of bezel** | Black (similar to RAL 9005) \(^1\)  
Gray (similar to RAL 7037) |
| **Position of use** | Vertical \(^1\)  
to be specified \(15^\circ \ldots 165^\circ\)  \(^2\) |
| **Mechanical loads** | Shock \(15\) g, vibration \(2.5\) g \(^1\)  
Shock \(30\) g, vibration \(5\) g |
| **Climatic suitability** | Class 2, \(-25^\circ \ldots +40^\circ\) \(^1\)  
Class 3, \(-10^\circ \ldots +55^\circ\) |
| **Marine application** | None \(^1\)  
Non–certified |
| **Enclosure code** | IP \(52\) \(^1\)  
IP 54 splash–water protected front |
| **Terminal protection** | None \(^1\)  
Full–sized rear cover  
Protective sleeves |
| **Terminals**  | Screws M3 x 6 \(^1\)  
Connector blades \(6.3 \times 0.8\) |
| **Logo**      | WEIGEL \(^1\)  
OEM logo \(^2\) |

\(^1\) Standard  
\(^2\) Please clearly add the desired specifications.  
\(^3\) On request

**Ordering example**
DFQ 96 50 Hz, panel type indicator,  
Window non–glaring glass, WEIGEL logo