

# Data Sheet

M Series  
090.D.101.06

## Phase Sequence Indicator

DFQ 96



## 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 $\pm 5^\circ$ ▶
panel fixing	screw clamps
panel thickness	1 ... 15 mm
mounting	stackable next to each other
terminals	hexagon studs, M3 screws and wire clamps C6
<b>dimensions</b>	<b>DFQ 96</b>
bezel	□ 96 mm
case	□ 90.5 mm
depth	62 mm
panel cutout	□ $92^{+0.8}$ 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

▶ also refer to "Options"

## Indication

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

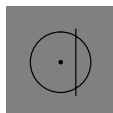
disc diameter 36 mm

## 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
-1	Part 1: Definitions and general requirements common to all parts
-5	Part 5: Special requirements for phase meters, power factor meters, and synchronoscopes
-9	Part 9: Recommended test methods
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)

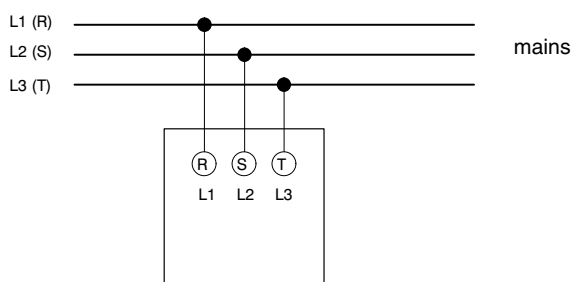


## Phase Sequence Indicator

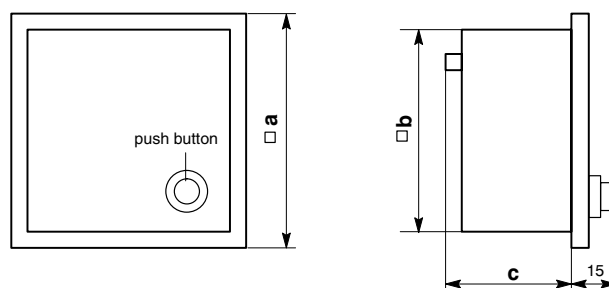
### Options

frequency	400 Hz on request
<b>case</b>	
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°
<b>performance</b>	
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
<b>accessories</b>	
terminal protection against accidental contact	full-sized rear cover or protective sleeves
terminals	connector blades 6.3 x 0.8
<b>dial</b>	
custom logo	none or as specified

### Connections



### Dimensions



dimensions (in mm)    **DFQ 96**

<b>a</b>	96
<b>b</b>	90
<b>c</b>	62

## Ordering Information

<b>type</b> DFQ	Phase Sequence Indicator
<b>front dimensions</b> 96	96 mm x 96 mm
<b>frequency</b>	40 ... 100 Hz <sup>1)</sup> 400 Hz <sup>3)</sup>
<b>version</b>	panel type <sup>1)</sup> portable type <sup>3)</sup>
<b>window</b>	glass <sup>1)</sup> non-glaring glass
<b>colour of bezel</b>	black (similar to RAL 9005) <sup>1)</sup> gray (similar to RAL 7037)
<b>position of use</b>	vertical <sup>1)</sup> to be specified 15 ... 165° <sup>2)</sup>
<b>mechanical loads</b>	shock 15 g, vibration 2.5 g <sup>1)</sup> shock 30 g, vibration 5 g
<b>climatic suitability</b>	class 2, -25 ... +40°C <sup>1)</sup> class 3, -10 ... +55°C
<b>marine application</b>	none <sup>1)</sup> non-certified
<b>enclosure code</b>	IP 52 <sup>1)</sup> IP 54 splash-water protected front
<b>terminal protection</b>	none <sup>1)</sup> full-sized rear cover protective sleeves
<b>terminals</b>	screws M3 x 6 <sup>1)</sup> connector blades 6.3 x 0.8
<b>logo</b>	WEIGEL <sup>1)</sup> none OEM logo <sup>2)</sup>

<sup>1)</sup> Standard

<sup>2)</sup> Please clearly add the desired specifications.

<sup>3)</sup> on request

### ordering example

DFQ 96 50 Hz, panel type indicator,  
window non-glaring glass, WEIGEL logo

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– specifications subject to change without notice; date of issue 12/10 –

