

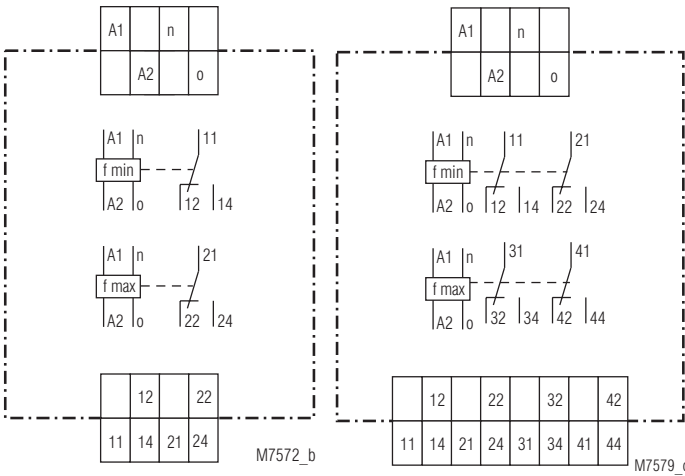
Over- and Underfrequency relay IP 9141, IR 9141 varimeter

0224438



- According to IEC/EN 60 255, DIN VDE 0435-303
- Measuring ranges from 0,5 to 1000 Hz
- Separate settable response value for f_{min} and f_{max}
- Optionally fixed response value for f_{min} and f_{max}
- Fixed hysteresis
- Optionally settable hysteresis
- Settable functions:
 - Position 1: open circuit operation / automatic reset
 - Position 2: open circuit operation / manual reset
 - Position 3: closed circuit operation / automatic reset
 - Position 4: closed circuit operation / manual reset
- Optionally without settable functions
- Optionally start up delay 0 ... 10 s
- LED indicators for auxiliary supply, f_{min} and f_{max}
- 1 or 2 changeover contacts for f_{min} and f_{max}
- Width IP 9141: 70 mm
- Width IR 9141: 105 mm

Circuit diagrams



Approvals and marking



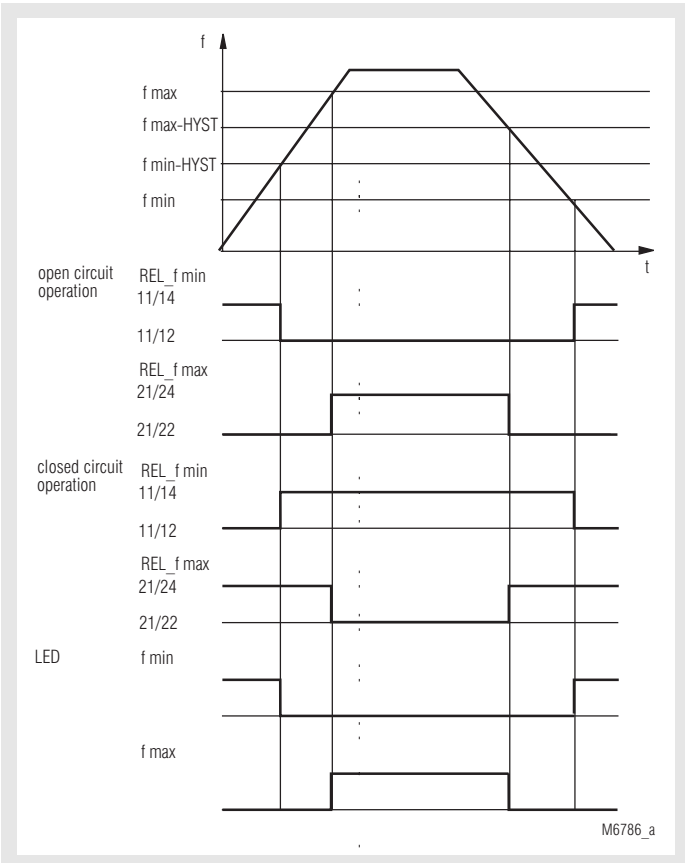
Applications

Monitors over- and underfrequency in generator systems.

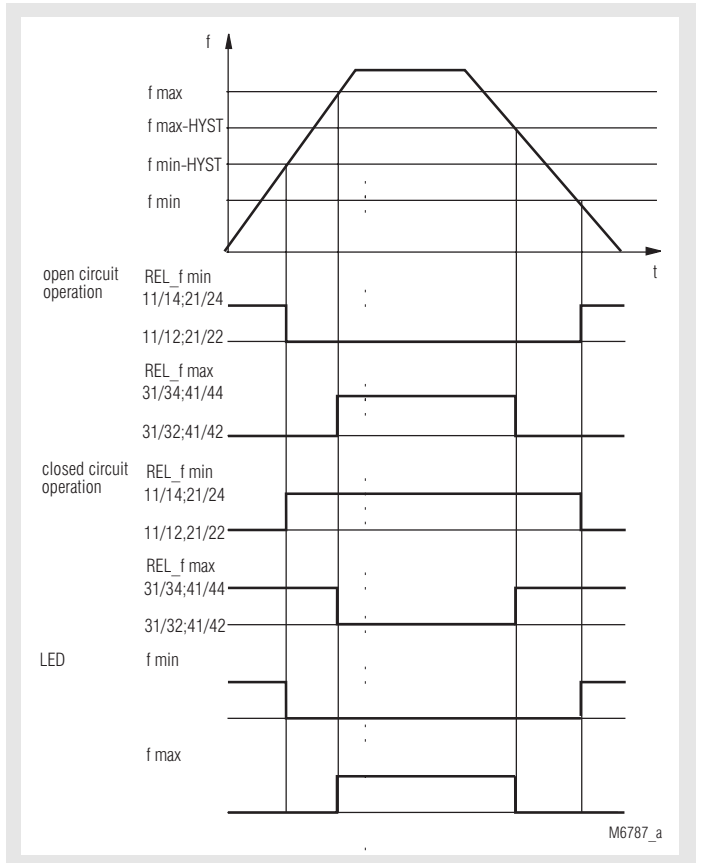
Indicators

LED f_{min} : underfrequency
 LED f_{max} : overfrequency
 LED A1/A2: auxiliary supply

Function diagram IP 9141



Function diagram IR 9141



Technical data

Measuring circuit

Nominal voltage U_N:	AC 127, 230, 400, 690 V
Voltage range:	0,65 ... 1,1 U_N
Response value:	45 ... 65 Hz settable for f_{min} and f_{max} or fixed 49 Hz for f_{min} and 51 Hz for f_{max} (others on request)

Hysteresis

at IP 9141.38, IP 9141.38/0__
IP 9141.38/2__:

f_{min} :	1,01 of response value
f_{max} :	0,99 of response value

at IP 9141.38/1__
IR 9141.39/1__:

f_{min} :	1,0 ... 1,2 of response value
f_{max} :	0,8 ... 1,0 of response value

Galvanic separation of the measuring circuit to:

Auxiliary circuit and output

Influence of auxiliary supply:

< ± 0,1 % at 0,8 ... 1,1 U_N

Temperature influence:

< ± 0,1 % / K

Auxiliary circuit

Auxiliary voltage U_H : AC/DC 24 ... 60 V galvanic separated
AC 127, 230, 400, 690 V

Voltage range: 0,8 ... 1,1 U_H

Nominal consumption: max. 2,2 W

Frequency range: 50 ... 60 Hz

Start up delay: 0 ... 10 sec activated by aux. supply

Max. buffer time at loss off aux. supply: 30 ms

Output

Contacts

IP 9141.38: 1 changeover contact for f_{min}
1 changeover contact for f_{max}

IR 9141.39: 2 changeover contact for f_{min}
2 changeover contact for f_{max}
4 A

Thermal current I_{th} :

Switching capacity

to AC 15

NO contact: 3 A / AC 230 V IEC/EN 60 947-5-1

NC contact: 1 A / AC 230 V IEC/EN 60 947-5-1

Electrical contact life: IEC/EN 60 947-5-1

to AC 15 at 1 A, AC 230 V: > 1,5 x 10⁵ switching cycles

Short circuit strength

max. fuse rating: 4 A gL IEC/EN 60 947-5-1

Mechanical life: > 100 x 10⁶ switching cycles

General data

Operating mode: Continuous operation

Temperature range: 0 ... + 60°C

Clearance and creepage distances

overvoltage category /
contamination level:

Aux. supply, measuring

circuit, contacts: 6 kV / 2 IEC 60 664-1

Contact, contact: 4 kV / 2 IEC 60 664-1

EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61 000-4-2

HF irradiation: 10 V / m IEC/EN 61 000-4-3

Fast transients: 2 kV IEC/EN 61 000-4-4

Surge voltages

between

wires for power supply: 1 kV IEC/EN 61 000-4-5

between wire and ground: 2 kV IEC/EN 61 000-4-5

Interference suppression: Limit value class B EN 55 011

Degree of protection: Housing: IP 40 IEC/EN 60 529

Terminals: IP 20 IEC/EN 60 529

Housing: Thermoplastic with V0 behaviour
according to UL subject 94

Technical data

Vibration resistance: Amplitude 0,35 mm
frequency 10 ... 55 Hz IEC/EN 60 068-2-6

Climate resistance: 0 / 060 / 04 IEC/EN 60 068-1

Terminal designation: EN 50 005

Wire connection: 2 x 2,5 mm² solid or
2 x 1,5 mm² stranded ferruled
DIN 46 228-1/-2/-3/-4

Wire fixing: Flat terminals with self-lifting
clamping piece IEC/EN 60 999-1
DIN rail IEC/EN 60 715

Mounting:

Weight

IP 9141: 290 g

IR 9141: 360 g

Dimensions

Width x height x depth

IP 9141: 70 x 90 x 59 mm

IR 9141: 105 x 90 x 59 mm

Standard type

IP 9141.38 AC 230 V AC 230 V 45 ... 65 Hz

Article number: 0047813

- 1 changeover contact for f_{min} and f_{max}
- Auxiliary voltage U_H : AC 230 V
- Nominal voltage U_N : AC 230 V
- Setting value: 45 ... 65 Hz, settable
- Fixed hysteresis
- With selectable function and reset button
- Width: 70 mm

Variants

IP 9141.38/

- 0 with function setting and reset button
- 1 closed circuit operation fixed function no reset button
- 2 open circuit operation fixed function no reset button

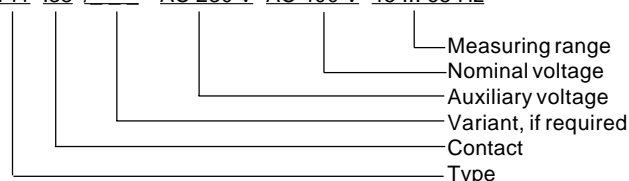
- 0 without start up delay
- 1 with start up delay

- 0 settable response value / fixed hysteresis
- 1 settable response value / settable hysteresis
- 2 fixed response value / fixed hysteresis

IR 9141.39/101 functions see above

Ordering example for variants

IP 9141 .38 / _____ AC 230 V AC 400 V 45 ... 65 Hz



Application example

