Overview

Monitoring relays
The wide range of Carlo Gavazzi monitoring relays features 7 different families depending on the type of electric measurement to be monitored: 3-phase, Voltage, Current, Frequency, Power, Power factor, Temperature. Most of them are available in 3 different housings:
- the standard DIN rail,
- the plug-in housing, with undecal socket
- the Mini-DIN housing, according to DIN 43880, for electric distribution panel installations.

**DPD series: the 3-phase multifunction monitoring relay with NFC communication**
This 3-phase voltage and frequency monitoring relay provides utmost flexibility in very compact dimensions, as it offers a wide range of features in just 22.5 mm. The DPD comes with 2 different factory default settings and if they are not appropriate for the application, they can be modified through an App via smartphone or PC and uploaded into the DPD by means of its NFC communication.

**DPA52 and DPB52, 3-phase monitoring relays for increased protection**
The main purpose of the new 3-phase monitoring relays DPA52 and DPB52 is to protect loads from wrong phase sequence and phase loss. The DPB52 additionally provides protection against over voltage and under voltage. One of the most important advantages of these relays is the switch mode power supply, which filters and minimizes any harmonic distortions.

**DUB72, the double under voltage monitoring relays for hazardous environments**
The main advantages of this monitoring relay are the presence of 2 set levels and 2 outputs, which allow the use of one as a pre-alarm and the second as an alarm. Thanks to the high powered electromechanical 20 A relay, the second threshold/relay can be used to directly disconnect the battery or load.

**DTA series, motor thermistor relays, renewed range**
These thermistor relays protect electric motors from overheating, ensuring continuous production and preventing machine downtime. They can be supplied with any voltage from 24 V to 240 V either AC or DC with two Normally Open NEMA B300 rated, or two SPDT relay outputs. Configurations are for as auto or manual reset for the DTA04 and DTA72. The DTA71 is only auto. The DTA71 and DTA72 come with DIN 43880 housing, hence they are also suitable for distribution boxes and panels, typical in domestic and industrial building installations. The unique “Ready for reset” function is available in all our DTA thermistor relays.

Due to the low profile DIN housing, DPA52, DPB52 and DUB72 are suitable for installation into electric distribution panels as well as industrial cabinets.

DTA motor thermistor relays are useful in all applications where overloads are frequent and may cause motor damage.
## Select your function level

<table>
<thead>
<tr>
<th>Measured value</th>
<th>Single function</th>
<th>Dual function</th>
<th>Extended</th>
<th>Full function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured value</td>
<td>Single setpoint and/or major failure reaction (phase sequence or loss)</td>
<td>Dual setpoints, adjustable delay, TRMS, other functions</td>
<td>Dual setpoints, dual delays, 2 outputs, extended functions</td>
<td>Digital setting, dual measurements, 10 setpoints, 2 outputs, NFC</td>
</tr>
<tr>
<td><strong>Current</strong></td>
<td>DIA01 DIA53* PIA01</td>
<td>DIB01 DIB02 DIB71* PIB01 PIB02</td>
<td></td>
<td>DIC01 PIC01</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td>DUA01 DUA52* PUA01 DUA55*</td>
<td>DUB01 DUB02 DUB03 DUB71* DUB72* PUB01 PUB02</td>
<td>DUC01 PUC01</td>
<td></td>
</tr>
<tr>
<td><strong>3-phase</strong></td>
<td>DPA01 DPA02 DPA03 DPA51* DPA52* DPA53* PPA01 PPA02 PPA03 DPA71* DPA55*</td>
<td>DPB01 DPB02 DPB51* DPB52* PPB01 PPB02</td>
<td>DPC01 PPC01 DPC02 DPC71* PPC71</td>
<td></td>
</tr>
<tr>
<td><strong>Frequency</strong></td>
<td></td>
<td>DFB01 PFB01</td>
<td>DFC01</td>
<td></td>
</tr>
<tr>
<td><strong>Thermistor</strong></td>
<td></td>
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<tr>
<td><strong>Power &amp; Power factor</strong></td>
<td>DWA01 PWA01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pump alternating relays</td>
<td>DLA71* DLA73*</td>
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</tbody>
</table>

### Current transformers for monitoring relays

- **MI:** 1-phase AC current transformers for 5, 20, 100, 500 AAC
- **MP3:** 3-phase AC current transformers for 5, 20, 100 or 500 AAC
- **A82:** True RMS AC current metering transformer for 25, 50, 100, 250 or 500 AAC
- **E83:** Small AC current metering transformer with 7 knob selectable ranges

* DIN 43880, low profile DIN rail Housing
### Monitoring relays

#### Current monitoring relays

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
</table>
| DIA01 / PIA01 | Over current monitoring relay  
1-phase AC/DC  
Direct input ≤ 5 A or external CT  
1 setpoint, hysteresis  
1 relay output |
| DIA53   | Over current monitoring relay  
1-phase AC  
Versions from 20 A to 100 A  
1 setpoint  
1 transistor output  
Hall sensing hole 12 mm |
| DIB71   | Over or under current  
1-phase AC/DC TRMS  
Direct reading ≤ 5 A or CT  
Adjustable delay and hysteresis  
1 relay output |
| DIB01 / PIB01 | Over or under current  
1-phase AC/DC TRMS  
Direct reading ≤ 10 A or CT Input  
Adjustable delay and hysteresis  
1 relay output |
| DIB01 100A | Over or under current  
1-phase AC/DC TRMS  
Hysteresis, Delay  
Hall sensing hole 12 mm ≤ 100 A |

#### Frequency monitoring relays

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
</table>
| DIB02 / PIB02 | Over or under current  
1-phase AC/DC TRMS  
CT or Shunt input signal  
Hysteresis, delay  
1 relay output |
| DIC01 / PIC01 | Process signals monitoring  
AC/DC: 0.5-5 mA, 2-20 mA, 0.1+1 V, 1-10 V  
DC: -5 to +5 V, -20 mA to +20 mA, -1 to +1 V, -10 to 10 V  
2 relay outputs |
| DFB01 / PFB01 | 1-phase AC input  
Over / under frequency  
24 to 240 V, 50/60 Hz  
Adjustable delay  
Programmable latching or inhibit  
Self supplied  
SPDT relay output |
| DFC01   | 1-phase AC input  
Over and under frequency  
24 to 240 V, 50/60 Hz  
2 Adjustable delay  
Programmable latching or inhibit  
Self supplied  
2 SPDT relay output |
| DLA71 / DLA73 | Pump alternating relay  
For 2 or 3 pumps  
Different or sequential mode  
Automatic rotation of the pumps  
Output relay managed by one independent input contact (DLA73) |

#### Level management relays

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIB02</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>PIB02</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>DIC01</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>PIC01</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>DFB01</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>PFB01</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>DIN rail housing</td>
<td>DIN rail housing</td>
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</tbody>
</table>

CARLO GAVAZZI Automation Components. Specifications are subject to change without notice. Illustrations are for example only.
## Monitoring relays

### 3-phase monitoring relays

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Features</th>
</tr>
</thead>
</table>
| **DPA01 / PPA01** | 3-phase Delta mains | - Phase sequence and loss
- Self powered
- 1 SPDT (PPA01)
- 1 SPDT or 2 SPDT relay outputs (DPA01) |
| **DPA51 / DPA71** | 3-phase Delta mains | - Phase sequence and loss
- Self powered
- SPDT relay output (DPA51)
- 2 SPDT relay outputs (DPA71) |
| **DPA52** | 3-phase Delta mains | - Phase sequence and loss
- Self powered
- Switch mode power supply
- SPDT relay output |
| **DPA53** | 3-phase Delta mains | - Phase sequence and loss
- Self powered
- SPDT relay output |
| **DPA55** | 3-phase Delta mains | - Phase sequence and loss
- Over and under voltage
- Voltage window monitoring
- Self powered
- SPDT relay output |

### DPA01, DIN rail housing
PPA01, Plug-in terminals

### DPA03 / PPA03
- 3-phase Delta mains
- Phase sequence and loss
- Adjustable under voltage
- Self powered
- SPDT relay output
- Up to 690 V mains (DPA03 only)

### DPA02 / PPA02
- 3-phase Delta mains
- Phase sequence
- Supply voltage monitoring +/-15%
- Self powered
- SPDT relay output

### DPA03, DIN rail housing
PPA03, plug-in terminals

### DPB01 / PPB01
- 3-phase Delta or Star mains
- Phase sequence and loss
- Over and under voltage
- Adjustable delay
- Self powered
- SPDT relay output

### DPB02 / PPB02
- 3-phase Delta or Star mains
- Phase sequence and loss
- Adjustable asymmetry and delay
- Self powered
- SPDT relay output

### DPB02, DIN rail housing
PPB02, plug-in terminals

### DPB51
- 3-phase Delta mains
- Phase sequence, neutral and phase loss
- Adjustable over and under voltage
- Adjustable delay
- Self powered
- SPDT relay output

### Din rail housing

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Monitoring relays

### 3-phase monitoring relays

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
</table>
| **DPB52** | - 3-phase Delta mains  
- Phase sequence and loss  
- Adjustable over/under voltage and delay ON  
- Switch mode power supply  
- 5A SPDT relay output |
| **DPC01 / PPC01** | - 3-phase Delta or Star mains  
- Phase sequence and loss  
- Asymmetry or tolerance  
- 2 setpoints and adjustable delay  
- Self powered  
- 2 SPDT relay outputs  
- Up to 690 V mains  
- 400 Hz versions |
| **DPC71 / PPC71** | - 3-phase Delta or Star mains  
- Over and under voltage  
- Phase sequence and loss  
- Asymmetry or tolerance  
- Self powered  
- 2 SPDT outputs |
| **DPC02** | - 3-phase Delta and Star mains  
- Over to 690 V mains  
- Phase sequence and loss  
- Over and under voltage  
- Over and under frequency  
- 2 setpoints and delay  
- Self powered  
- 2 SPDT relay output |
| **DPD** | - 3-phase Delta and Star mains  
- Voltage and frequency over/under, asymmetry, phase and neutral loss, phase sequence  
- Standard configuration, customizable NFC  
- Two SPDT relay outputs  
- Up to 400 Hz |

### DIN rail housing

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
</table>
| DPC01, DIN rail housing  
PPC01, Plug-in terminals | |
| DPC71, DIN rail housing  
PPC71, Plug-in terminals | |
| DIN rail housing | |
| DIN rail housing | |

### Power monitoring relays

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
</table>
| **DWA01 / PWA01** | - 1 or 3-phase Cos φ monitoring  
- Over or under Cos φ  
- Adjustable setpoint  
- Self powered  
- Direct reading or through ext. CT  
- SPDT relay output |
| **DWB01 / PWB01** | - 3-phase load guard  
- Up to 690 V  
- Over and under Cos φ  
- Adjustable setpoint  
- Manual start/stop  
- Direct reading or through ext. CT  
- SPDT relay output |
| **DWB02 / PWB02** | - 1 or 3-phase active power monitoring  
- Direct current or CT reading input  
- Over and under power  
- Programmable latching or inhibit  
- Automatic/manual start/stop  
- Separate power ON and alarm ON delays  
- SPDT relay output |
| **DWB03 / PWB03** | - 1 or 3-phase active power monitoring  
- Direct current or CT reading input  
- Over and under power  
- Power direction setting  
- Programmable latching or inhibit  
- Automatic/manual start/stop  
- Separate power ON and alarm ON delays  
- SPDT relay output |

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
</table>
| DWA01, DIN rail housing  
PWA01, Plug-in terminals | |
| DWB01, DIN rail housing  
PWB01, Plug-in terminals | |
| DWB02, DIN rail housing  
PWB02, Plug-in terminals | |
| DWB03, DIN rail housing  
PWB03, Plug-in terminals | |
### Monitoring relays

#### Voltage monitoring relays

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUA01 / PUA01</td>
<td>DC 1-phase over voltage from 0.4 V to 500 V, adjustable hysteresis, programmable latching, SPDT relay output</td>
</tr>
<tr>
<td>DUA52</td>
<td>DC 1-phase over voltage from 8 to 58 VDC, adjustable voltage and hysteresis, SPDT relay output</td>
</tr>
<tr>
<td>DUB71</td>
<td>AC 1-phase, from 208 to 480 VAC, +/-10% or +/-15% tolerance monitoring, self-powered, SPDT relay output</td>
</tr>
<tr>
<td>DUB01 / PUB01</td>
<td>DC 1-phase over or under voltage, adjustable hysteresis and delay, programmable latching or inhibit, SPDT relay output</td>
</tr>
<tr>
<td>DUB02 / PUB02</td>
<td>AC 1-phase, adjustable over or under voltage, programmable latching or inhibit, SPDT relay output</td>
</tr>
<tr>
<td>DUB03 / PUB03</td>
<td>Dual under voltage monitoring, 24Vdc power supply: range from 15 VDC to 30 VDC, adjustable over or under voltage, adjustable delay and hysteresis, programmable latching or inhibit, SPDT relay output</td>
</tr>
<tr>
<td>DUC01 / PUC01</td>
<td>2 to 500 VDC/AC 1-phase, over or under voltage, adjustable hysteresis, 2 voltage and delay setpoints, SPDT relay output</td>
</tr>
<tr>
<td>DTA71</td>
<td>Up to 6 PTCs input, auto reset, test button, no setting, SPDT relay output, universal supply</td>
</tr>
<tr>
<td>DTA72</td>
<td>Up to 6 PTCs input, manual/auto reset, test button, no setting, 2 SPDT relay outputs, universal supply</td>
</tr>
<tr>
<td>DTA04</td>
<td>Up to 6 PTCs input, auto or manual reset configuration available, 2 SPDT relay outputs, universal power supply from 24 V to 240 VAC/VDC</td>
</tr>
</tbody>
</table>

#### DIN rail housing

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DUA01, DIN rail housing PUA01, plug-in terminals</td>
<td></td>
</tr>
<tr>
<td>DUA52</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>DUB71</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>DUB01, DIN rail housing PUB01, plug-in terminals</td>
<td></td>
</tr>
<tr>
<td>DUB02, DIN rail housing PUB02, plug-in terminals</td>
<td></td>
</tr>
<tr>
<td>DUB03 DIN rail housing PUB03, plug-in terminals</td>
<td></td>
</tr>
<tr>
<td>DUC01, DIN rail housing PUC01, plug-in terminals</td>
<td></td>
</tr>
<tr>
<td>DTA71</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>DTA72</td>
<td>DIN rail housing</td>
</tr>
<tr>
<td>DTA04</td>
<td>DIN rail housing</td>
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</tbody>
</table>

### Motor thermistor relays

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DTA71</td>
<td>Up to 6 PTCs input, auto reset, test button, no setting, SPDT relay output, universal supply</td>
</tr>
<tr>
<td>DTA72</td>
<td>Up to 6 PTCs input, manual/auto reset, test button, no setting, 2 SPDT relay outputs, universal supply</td>
</tr>
<tr>
<td>DTA04</td>
<td>DIN rail housing</td>
</tr>
</tbody>
</table>
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