



## Digital Indicator and Controller for panel mounting



measuring  
•  
monitoring  
•  
analysing

### DAG-S../DAG-M..



Model DAG-M1...  
48 x 24 mm



Model DAG-M3...  
96 x 24 mm



Model DAG-M4...  
96 x 48 mm



Model DAG-S4...  
96 x 48 mm

- 5-digit LED (red, green, orange, blue or tricolor)
- Input: temperature, current, voltage, frequency
- 1 (2) analogue output
- 2(4) contacts, min./max. memory
- RS232 or RS485 interface
- 30 additional adjustable setpoints, zero-key for Hold, Tara, zero-point tranquilising
- Volume measuring (totalisator)



Z2

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## Description

Digital indicators and controllers for measurement of temperature, current and voltage. The measuring input is set at the factory. The dimension symbols can be adapted with interchangeable plates.

The Parameters

- Required display value and offset
- Decimal position, display time, sample rate
- Type, full scale and offset of analogue output
- Switching point, hysteresis, standby-/operating current, delay can be programmed via keypad in 3 levels by customer.

## Technical Details

Display:	5-digit, 7-segment, 14 (10) mm high optional red, green, blue, orange, or 3-color (red/green/orange) LED horizontal bar (up/down) for overflow/Underflow display time: 0.1..10.0 seconds
Housing:	polycarbonate, black, gasket EPDM
Mounting:	pluggable screw elements up to wall thickness 3 mm
Protection type:	IP 65 (front), IP 00 (back)
Elect. Connection:	plug terminals cable cross-section up to 2.5 mm <sup>2</sup>
Max. temperature:	0...+50°C operating, -20...+80°C storage
Weathering resistance:	relative humidity 0-85 % annual mean, no condensation
Output:	pulse output: max. 10 kHz (only for frequency input) analogue output: 0 - 10 V <sub>DC</sub> , 0(4)-20 mA switchable
Contacts:	optical display flashing relay (Changeover contact) 250 V <sub>AC</sub> /2 A, 30 V <sub>DC</sub> /2 A PhotoMOS: N/O contact 30V <sub>DC/AC</sub> , 0.4 A
Sensor supply:	10 V <sub>DC</sub> /50 mA (DAG-M3/DAG-M4) / 10 V <sub>DC</sub> /20 mA (DAG-S4/DAG-M1)
Interface:	RS232, 9,600 Baud, no parity, 8 DataBit, 1 Stopbit, max. cable length 3 m RS 485, 9,600 Baud, no parity, 8 DataBit, 1 Stopbit, max. cable length 1000 m.
Supply:	DAG-M3.../DAG-M4... 100-240 V <sub>AC</sub> 50/60 Hz ± 10% 100-240 V <sub>DC</sub> ± 10% (max. 10 VA (DAG-M3...)/max. 15 VA (DAG-M4...)) 10-40 V <sub>DC</sub> galvanic separated, 18-30 V <sub>AC</sub> 50/60 Hz (max.10 VA (DAG-M3...)/max. 15 VA (DAG-M4...))

DAG-S4...	230 V <sub>AC</sub> ± 10% ( max. 20 VA), 115 V <sub>AC</sub> 10-30 V <sub>DC</sub> , galv. separated (max. 8 VA)
DAG-M1...	100-240 V <sub>AC</sub> 50/60 Hz, ±10%, 100-240 V <sub>DC</sub> ±10% (max. 5 VA) 24 V <sub>DC</sub> , galv. separated (max. 4 VA)
Memory:	EEPROM, data retention ≥100 years by 25 °C

## Measuring input

### Measuring input (direct current/direct voltage)

Measuring range:	0(4) - 20 mA / 0-10 V <sub>DC</sub>
Measuring span:	-22 ... 24 mA / -12 ... 12V
Input resistance:	Ri at ~100 Ω (at 0(4) - 20 mA) Ri at ~200 kΩ (at 0-10 V <sub>DC</sub> )
Measuring error:	0.1% of measuring range ± 1 Digit
Temperature drift:	100 ppm/K
Measuring time:	0.1..10.0 seconds
Measuring principle:	U/F-conversion
Resolution:	approx. 18 Bit at 1s measuring time

### Measuring input (Pt100)

Measuring range:	-200.0 ... +850.0 °C -328.0 ... 1562.0 °F
Measuring error:	0.1 % of measuring range ± 1 Digit
Temperature drift:	100 ppm/K
Measuring time:	0.1 ... 10.0 seconds
Measuring principle:	U/F-conversion
Resolution:	0,1 °C or 0,1 °F

### Measuring input (Thermocouple)

Measuring range:	Type L: -200...+900 °C Type J: -210...+1 200 °C Type K: -270...+1 372 °C Type B: +80...+1 820 °C Type S: -50...+1768 °C Type N: -270...+1 300 °C Type E: -270...+1 000 °C Type T: -270...+400 °C Type R: -50...+1768 °C
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Measuring error:	2 K ± 1 Digit
Temperature drift:	100 ppm/K
Measuring time:	0.1 ... 10.0 seconds
Measuring principle:	U/F-conversion
Resolution:	0.1 °C or 0.1 °F
Characteristic error:	< ± 1 K
Cold junction:	thermistor

### Measuring input (Frequency)

Signal:	pulse input, TTL, Namur, 3-wire initiator PNP/NPN
Input resistance:	Ri at 24 V / 4 kΩ high/low level: >15 V / <4 V high/low TTL-level: >4.6 V / <1.9 V
Input Frequency:	0.01 Hz selectable up to 999.99 kHz
Measuring error:	0.05 % of measuring range

DAG-S4../DAG-M4..., 96 x 48 mm



DAG-M3, 96 x 24 mm



DAG-M1, 48 x 24 mm



Standard version with min./max. memory, 30 additional adjustable setpoints, zero-key to activate Tara, Hold, zero-point tranquilising, volume measurement (totalisator)

**Order Details DAG-S4 96 x 48** (Example: DAG-S45 3 0 0 2 R)

Display 14 mm	Input	Model	Supply	Output	Sensor supply <sup>1)</sup>	Contacts	Display
5-digit	Pt100/3/4-wire (-200.0...+850.0 °C)	DAG-S45..	3 = 10-30 V <sub>DC</sub> galvanic separated	0 = without 4 = 1 x 0(4) - 20 mA (not with sensor supply), 0-10 V <sub>DC</sub>	0 = without V <sup>5)</sup> = 10 V <sub>DC</sub> / 20 mA W <sup>2)</sup> = 24 V <sub>DC</sub> / 50 mA	0 = without 2 = 2 relay	R = red B = blue O = orange G = green T <sup>4)</sup> = Tricolor (red/green/orange)
	Thermocouples (L, J, K, B, S, N, E, T, R)	DAG-S4T..					
	Frequency (0.01 Hz...999.99 kHz)	DAG-S4F..	2 = 24 V <sub>AC</sub> 4 = 115 V <sub>AC</sub>				
	0(4) - 20 mA, 0 - 10 V <sub>DC</sub>	DAG-S4V..	0 = 230 V <sub>AC</sub>				
5-digit	Pt100/3/4-wire (-200.0...+850.0 °C)	DAG-M45..	7 = 10-40 V <sub>DC</sub> galvanic separated, 18-30 V <sub>AC</sub>	0 = without 4 = 1 x 0(4) - 20 mA, 0-10 V <sub>DC</sub>	0 = without V <sup>5)</sup> = 10 V <sub>DC</sub> / 20 mA W <sup>2)</sup> = 24 V <sub>DC</sub> / 50 mA	0 = without 2 = 2 relay 4 = 4 relay 8 = 8 Photo-Mos <sup>3)</sup>	R = red B = blue O = orange G = green T = Tricolor (red/green/orange)
	Thermocouples (L, J, K, B, S, N, E, T, R)	DAG-M4T..					
	Frequency (0.01 Hz...999.99 kHz)	DAG-M4F..	8 = 100-240 V <sub>AC/DC</sub> ±10%				
	0(4) - 20 mA, 0 - 10 V <sub>DC</sub>	DAG-M4V..	7 = RS 232 8 = RS 485				

**Order Details DAG-M3 96 x 24** (Example: DAG-M35 8 0 0 2 R)

Display 14 mm	Input	Model	Supply	Output	Sensor supply <sup>1)</sup>	Contacts	Display
5-digit	Pt100/3/4-wire (-200.0...+850.0 °C)	DAG-M35..	7 = 10-40 V <sub>DC</sub> galvanic separated, 18-30 V <sub>AC</sub>	0 = without 4 = 1 x 0(4) - 20 mA, 0-10 V <sub>DC</sub>	0 = without V <sup>5)</sup> = 10 V <sub>DC</sub> / 50 mA W <sup>2)</sup> = 24 V <sub>DC</sub> / 50 mA	0 = without 2 = 2 relay	R = red B = blue O = orange G = green T = Tricolor (red/green/orange)
	Thermocouples (L, J, K, B, S, N, E, T, R)	DAG-M3T..					
	Frequency (0.01 Hz...999.99 kHz)	DAG-M3F..	8 = 100-240 V <sub>AC/DC</sub> ±10%				
	0(4) - 20 mA, 0 - 10 V <sub>DC</sub>	DAG-M3V..	7 = RS 232 8 = RS 485				

**Order Details DAG-M1 48 x 24** (Example: DAG-M12 3 0 0 0 R)

Display 10 mm	Input	Model	Supply	Output	Sensor supply <sup>1)</sup>	Contacts	Display
5-digit	Pt100/2/4-wire (-200.0...+850.0 °C)	DAG-M12..	3 = 24 V <sub>DC</sub> galvanic separated	0 = without 4 <sup>6)</sup> = 1 x 0(4) - 20 mA	0 = without V = 10 V <sub>DC</sub> / 20 mA W <sup>2)</sup> = 24 V <sub>DC</sub> / 50 mA	0 = without	R = red B = blue O = orange G = green
	Thermocouples (L, J, K, B, S, N, E, T, R)	DAG-M1T..					
	Frequency (0.01 Hz...999.99 kHz)	DAG-M1F..	8 = 100-240 V <sub>AC/DC</sub> ±10%				
	0(4) - 20 mA, 0 - 10 V <sub>DC</sub>	DAG-M1V..					

<sup>1)</sup> Not available for input Pt100, thermocouples or for output option '5', as well as for DAG-M1 with AC supply.

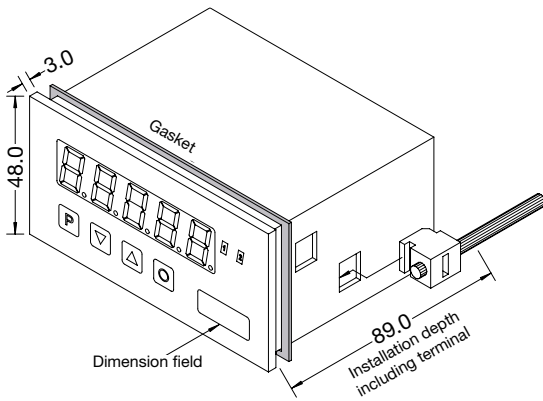
<sup>2)</sup> For DAG-xxV... and DAG-xxF..

<sup>3)</sup> Not available with output option '5'. <sup>4)</sup> Tricolor option for AC power supply is only available with output option, sensor supply or contacts.

<sup>5)</sup> For DAG-M3F, DAG-M4F and DAG-S4F 12 V<sub>DC</sub>/50 mA <sup>6)</sup> Not to combine with AC supply

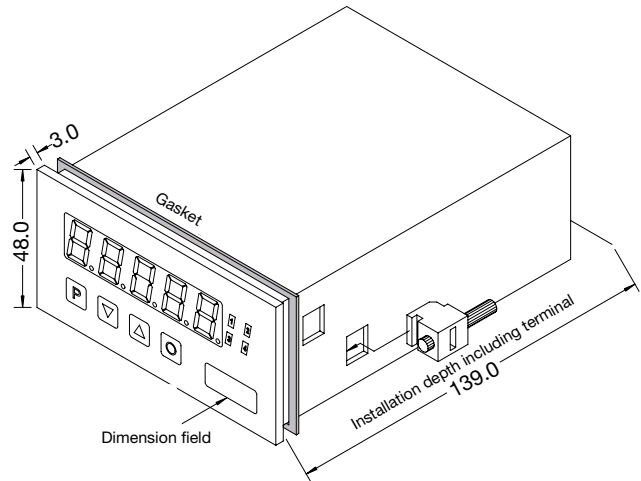
Dimensions [mm]

DAG-S4



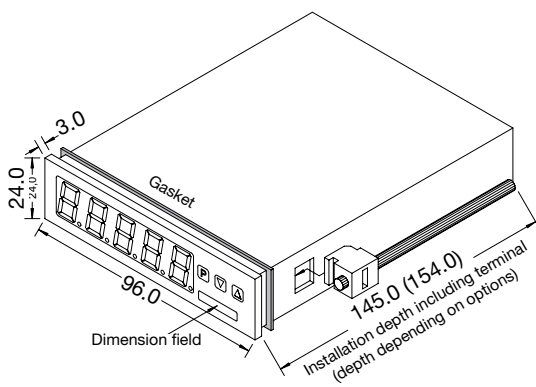
Cut-out:  $92.0^{+0.8} \times 45.0^{+0.6}$  mm  
 Weight: approx. 200 g

DAG-M4



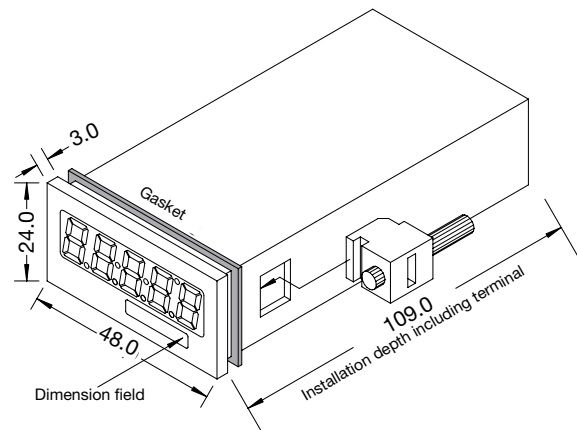
Cut-out:  $92.0^{+0.8} \times 45.0^{+0.6}$  mm  
 Weight: approx. 350 g

DAG-M3



Cut-out:  $92.0^{+0.8} \times 22.2^{+0.3}$  mm  
 Weight: approx. 250 g

DAG-M1



Cut-out:  $45.0^{+0.6} \times 22.2^{+0.3}$  mm  
 Weight: approx. 150 g