



**Digital panel meter  
3½-digit**

**DV3, DT3**

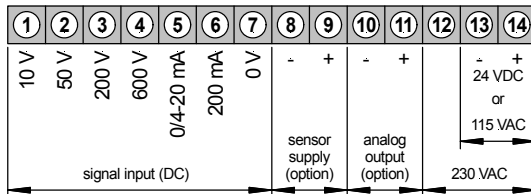
- Without setpoints
- Analog output
- Sensor supply

# Digital panel meter

- Direct voltage
- Alternating voltage
- Resistance
- PT100/PT1000
- Direct current
- Alternating current
- Potentiometer
- Thermocouple
- Shunt



## • Direct voltage, direct current



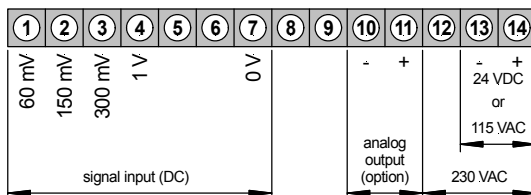
- Power supply 230/115 VAC
- Power supply 24 VDC
- Power supply 24 VDC (galv. insulated)

ORDER NUMBER  
(without option)

- DV 3.001.110C
- DV 3.001.130C
- DV 3.001.170C

Transmitter connections see page 6

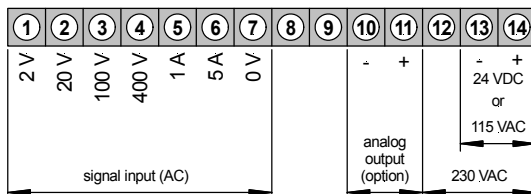
## • Direct voltage (Shunt)



- Power supply 230/115 VAC
- Power supply 24 VDC
- Power supply 24 VDC (galv. insulated)

- DV 3.002.110C
- DV 3.002.130C
- DV 3.002.170C

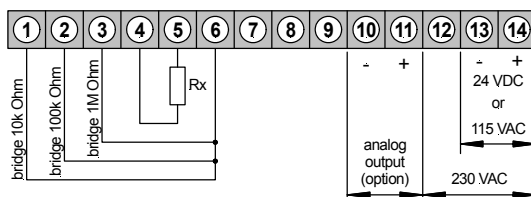
## • Alternating voltage, alternating current



- Power supply 230/115 VAC
  - Power supply 24 VDC (galv. insulated)
- Standard True effective value RMS
- Standard True effective value RMS

- DV 3.004.110C
- DV 3.104.110C
- DV 3.004.170C
- DV 3.104.170C

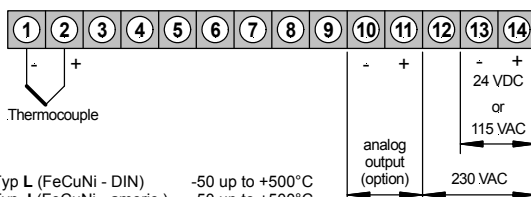
## • Resistance, potentiometer measurement



- Power supply 230/115 VAC
- Power supply 24 VDC
- Power supply 24 VDC (galv. insulated)

- DV 3.006.110C
- DV 3.006.130C
- DV 3.006.170C

## • Thermocouple L, J or K



- Typ L (FeCuNi - DIN) -50 up to +500°C
- Typ J (FeCuNi - americ.) -50 up to +500°C
- Typ K (NiCrNi) -100 up to +800°C

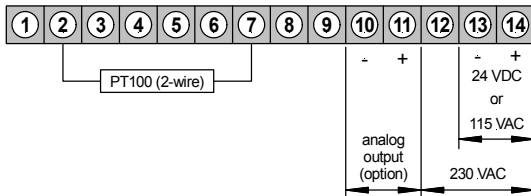
- Power supply 230/115 VAC
- Power supply 24 VDC (galv. insulated)

- DT 3.40x.110C
- DT 3.40x.170C

(fill in the desired type of thermocouple in the order number instead of x)

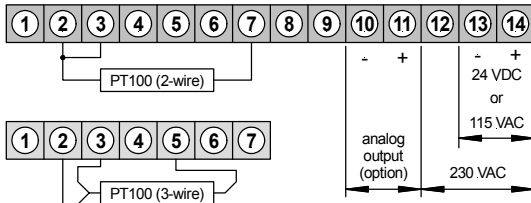
**ORDER NUMBER OF TYPE**  
(without options)

• **PT100 (2 wire)**



Power supply 230/115 VAC 2 wire **DT 3.202.110C** (199,9°C)  
 2 wire **DT 3.206.110C** (600°C)  
 3+2 wire **DT 3.302.110C** (199,9°C)  
 3+2 wire **DT 3.306.110C** (600°C)

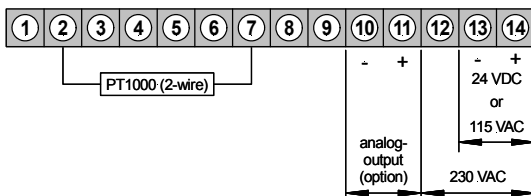
• **PT100 (3+2 wire)**



Power supply 24 VDC 2 wire **DT 3.202.170C** (199,9°C)  
 (galv. insulated) 2 wire **DT 3.206.170C** (600°C)  
 3+2 wire **DT 3.302.170C** (199,9°C)  
 3+2 wire **DT 3.306.170C** (600°C)

• **PT100 (4 wire) see panel meter with microprocessor based technology**

• **PT1000 (2 wire)**



Power supply 230/115 VAC 2 wire **DT 3.602.110C** (199,9°C)  
 Power supply 24 VDC 2 wire **DT 3.602.170C** (199,9°C)  
 (galv. insulated)  
 Power supply 230/115 VAC 2 wire **DT 3.606.110C** (600°C)  
 Power supply 24 VDC 2 wire **DT 3.606.170C** (600°C)  
 (galv. insulated)

**OPTIONS**

	DV 3.001... Direct voltage	DV 3.002... Shunt	DV 3.004... Alternating voltage	DV 3.006... Resistance	DT 3.40x... Thermocouple	DT 3.x02.../3.x06... PT100/0 (2 +3 wire)	Additional price
	EUR						
LED green	x	x	x	x	x	x	
Protection IP54 at the front	x	x	x	x	x	x	6,15
Protection IP65 at the front (see following table)	x	x	x	x	x	x	28,10
Plug in terminal	x	x	x	x		x	12,25
Sensor supply 24 VDC/50 mA (supply voltage 230/115 VAC and 24 VDC)	x						24,55
Sensor supply 10 VDC/20 mA (supply voltage 230/115 VAC and 24 VDC)	x						24,55
Sensor supply 24 VDC/50 mA (supply voltage 24 VDC galv. insulated)	x						35,80
Sensor supply 10 VDC/20 mA (supply voltage 24 VDC galv. insulated)	x						35,80
Sensor supply 24 VDC/100 mA (supply voltage 230/115 VAC and 24 VDC galv. insulated)	x						56,25
Sensor supply 10 VDC/120 mA (supply voltage 230/115 VAC and 24 VDC galv. insulated)	x						56,25
<i>With supply voltage AC and DC (galvanically insulated) the sensor supply is galv. insulated from the measuring input !</i>							
Analog output 0-10 VDC/2 mA (supply voltage 230/115 VAC and 24 VDC)	x	x	x	x	x	x	39,90
Analog output 0-20 mA/load 500 Ω (supply voltage 230/115 VAC and 24 VDC)	x	x	x	x	x	x	39,90
Analog output 4-20 mA/load 500 Ω (supply voltage 230/115 VAC and 24 VDC)	x	x	x	x	x	x	39,90
Analog output 0-10 VDC/2 mA (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	61,35
Analog output 0-20 mA/load 500 Ω (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	61,35
Analog output 4-20 mA/load 500 Ω (supply voltage 24 VDC galv. insulated)	x	x	x	x	x	x	61,35
Analog output with customer specified offset (S26)	x	x	x	x	x	x	10,25
Measuring input 0-1 mA (S10)	x						15,35
<b>Figures height 20 mm – adjustment by potentiometer at the rear side (S33)</b>	x	x	x	x	x	x	23,00
Dimension strips selectable	x	x	x	x	x	x	
Other power supplies on demand	x	x	x	x	x	x	
Setpoints	See type PVE....						

• Settings ex works with protective system IP65, adjustable on rear side

Settings deviating from the standard settings must be indicated in the order description.	Standard	As desired	DV 3.001... Direct voltage	DV 3.002... Shunt	DV 3.004... Alternating voltage	DV 3.006... Resistance	DT 3.40x... Thermocouple	DT 3.x02.../3.x06... PT100/0 (2 +3 wire)
Sign plus	active	inactive	x	x		x	x	x
Blanking	no	yes	x	x	x	x		
Indication time	0,25 sec.	1 sec.	x	x	x	x		

## Technical data

for all units of the DV3, DT3 series, if not indicated otherwise

<b>Dimension</b>	Housing Assembly cut out Fastening Housing material Protective system	B96 x H48 x T134 mm, including screw terminal (T=148 mm, including plug in terminal) 92.0 <sup>+0.8</sup> x 45.0 <sup>+0.6</sup> mm special quick plastic clamp proper to fix in wall thickness up to 50 mm PC/ABS-blend, colour black, UL94V-0 at the front IP40 connection IP00
	Weight Connection	approx. 0.35 kg at the rear side via terminals up to 2.5 mm <sup>2</sup>
<b>Input</b>		
DV3.001... Direct voltage, Direct current	Measuring range  Input resistance	0-10 V, 50 V, 200 V, 600 V, 0/4-20 mA, 0-200 mA – all ranges selectable via connection terminal Offset adjustment supported by offset potentiometer (-500 up to +500)  Ri with 10 V = ~55 kΩ    600 V = ~4.7 MΩ 50 V = ~290 kΩ    20 mA = ~100 Ω 200 V = ~1.8 MΩ    200 mA = ~10 Ω
DV3.002... Direct voltage (Shunt)	Measuring range  Input resistance	0-60mV, 150mV, 300mV, 1V - all ranges selectable via connection terminal Offset adjustment supported by offset potentiometer (-100 up to +100)  Ri with 60mV = ~15kΩ    300mV = ~75kΩ 150mV = ~39kΩ    1V = ~320kΩ
DV3.004... Alternating voltage, Alternating current	Measuring range  Input resistance	0-2 V, 20 V, 100 V, 400 V, 1 A, 5 A - all ranges selectable via connection terminal Offset adjustment supported by offset potentiometer (-100 up to +100)  Ri with 2 V = ~20 kΩ    400 V = ~4 MΩ 20 V = ~200 kΩ    1 A = ~276 mΩ 100 V = ~1 MΩ    5 A = ~56 mΩ
DV3.006... Resistance	Measuring range	≤10 kΩ, ≤100 kΩ, ≤1 MΩ all ranges selectable via connection terminal Offset adjustment supported by offset potentiometer (-100 up to +100)
DT3.x02... PT100	Sensor Measuring range Sensor current	2-wire, 3-wire -50.0 up to 199.9°C approx. 1 mA
DT3.x06... PT100	Sensor Measuring range Sensor current	2-wire, 3-wire -100 up to + 600°C approx. 1 mA
DT3.602... PT1000	Sensor Measuring range Sensor current	2-wire -50 up to + 199,9°C approx. 0.1 mA
DT3.606... PT1000	Sensor Measuring range Sensor current	2-wire -100 up to + 600°C approx. 0.1 mA
DT3.40x... Thermocouple	<b>L</b> FeCuNi (DIN) <b>J</b> FeCuNi (americ.) <b>K</b> NiCrNi	-50 up to + 500°C -50 up to + 500°C -100 up to + 800°C
<b>Output</b>		
DV3.001...  <i>For all versions</i>	Sensor supply  Analog output  Offset Final value	<b>(galv. insulated for 230/115 VAC and 24 VDC/DC from the measuring input)</b> 24 VDC/50 mA – 10 VDC/20 mA (other sensor supplies/performances on demand)  0-10 VDC/2 mA (0.1% of measuring value, +/-0,05% of full scale) 0-20 mA, 4-20 mA - load 500 Ω (0.1% of measuring value, +/-0.05% of full scale) Not changeable, offset analog output corresponds to 0 digit, see options Adjustable to 10 V or 20 mA, within the indication range 350 to 1999

(The measuring inputs are not galv. insulated from the analog output !)

# Technical data

## Output

DT3.x02....	Final value 200°C	10 V or 20 mA adjustable for range from 35.0°C up to 199.9°C
DT3.x06....	Final value 600°C	10 V or 20 mA adjustable for range from 200°C up to 600°C
DT3.40x....	Final value 500°C Final value 800°C	10 V or 20 mA adjustable for range from 200°C up to 500°C 10 V or 20 mA adjustable for range from 200°C up to 800°C

## Accuracy

<i>For all versions</i>	Measuring principle	Dual-Slope-Integration
DV3.001....	Temp. drift	~ 100 ppm/K
DV3.002....		~ 150 ppm/K
DV3.004....		I ~ 200 ppm/K / U ~ 100 ppm/K
DV3.006....		~ 100 ppm/K
DT3.40x....		~ 100 ppm/K
DT3.x02....		~ 100 ppm/K
DT3.x06....		~ 100 ppm/K
<i>For all versions</i>	Measuring fault	+/-0.1% of measuring value, +/-1 digit
DV3.0x4....	Frequency range	Nominal precision 40 Hz up to 1000 Hz
	Measuring fault	Voltage range: +/-0.5% of measuring value, +/-1digit 1 A range: +/-0.5% of measuring value, +/-1digit 5 A range: +/-0.5% of measuring value, +/-1digit
	<i>Measuring principle (input)</i>	Via rectifier – (effective value with sine waveform only)

DV3.1x4....	Frequency range	Nominal precision 40 Hz up to 1000 Hz
	Measuring fault	Voltage range: +/-0.5% of measuring value, +/-1digit, crestfactor 3 1 A range: +/-0.5% of measuring value, +/-1digit, crestfactor 3 5 A range: +/-0.5% of measuring value, +/-1digit, crestfactor 3
	<i>Measuring principle (input)</i>	True effective value <b>RMS</b>

## Accuracy

DT3.x02....	Measuring fault	max. +/-0.5°C, +/- 1 digit
DT3.x06....	Measuring fault	max. +/-1°C, +/-1 digit
DT3.60x....	Measuring fault	$R_L \leq 10 \Omega = +/-1 K$ $R_L > 10 \Omega \leq 20 \Omega = +/-2 K$
DT3.40x....	Measuring fault type <b>J, L</b> Measuring fault type <b>K</b>	max. 5°C Range from -100°C up to -50°C max. 15°C Range > -50°C up to 600°C max 5°C Range > 600°C up to 800°C max 15°C

<i>For all versions</i>	Resolution	+/-1999 digit
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DT3.x02....		0,1°C
DT3.x06....		1°C
DT3.40x....		1°C

<b>Power unit</b>	Supply voltage	230/115 VAC +/- 10% (50-60 Hz), 24 VDC (18-30 V), 24 VDC (+/-10%) galv. insulated
	Consumption	max. 5 VA

<b>Indication</b>	Display	LED with 7 segments , 14 mm high (optionally 20 mm), red 3½-digit = indication 1999
	Overflow	by showing „1“ on the fourth digit

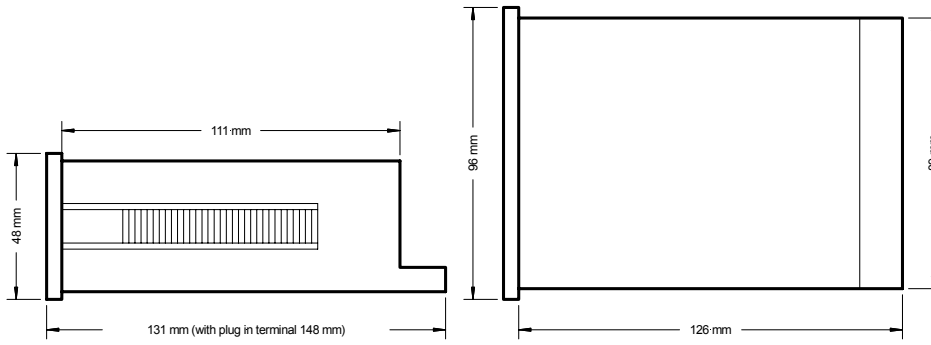
DV3.001....		
DV3.002....		
DV3.006....	Decimal point	adjustable by bridging on front side
	Measuring time	selectable 0.25 or 1 sec.
	Blanking	blanking out of last digit (selectable by bridge on front side)
	Plus sign	selectable by bridging on front side

DV3.004....	Decimal point	adjustable by bridging on front side
	Measuring time	selectable 0.25 or 1 sec.
	Blanking	blanking out of last digit (selectable by bridge on front side)

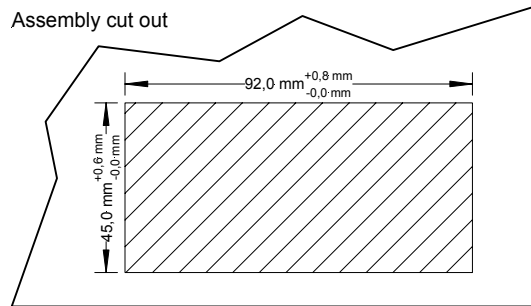
DT3.xx2....		
DT3.xx6....	Measuring time	1 sec.

<b>Ambient conditions</b>	Working temperature	0 up to + 60 °C
	Storing temperature	-20 up to + 80°C

**Housing:**



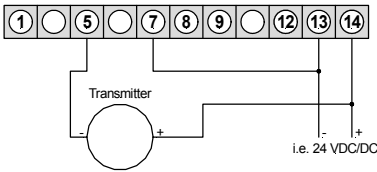
**Assembly cut out**



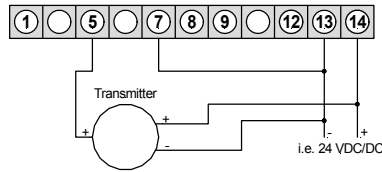
# Connection diagrams

**DV instruments without sensor supply**

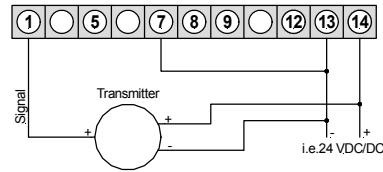
2-wire: 4-20 mA



3-wire: 0-20 mA  
4-20 mA

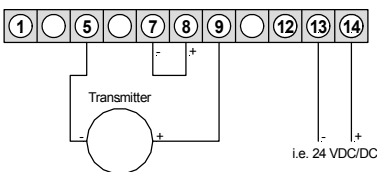


3-wire: 0-10 V / 0-5 V  
0-1 V / 1-6 V

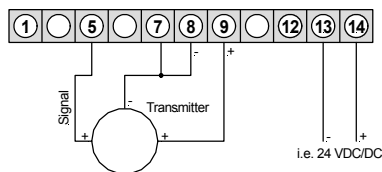


**DV instruments with sensor supply**

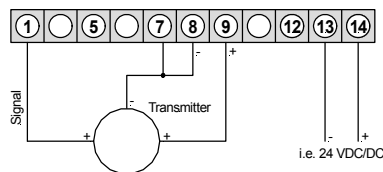
2-wire: 4-20 mA



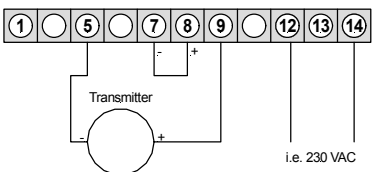
3-wire: 0-20 mA  
4-20 mA



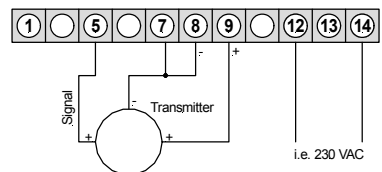
3-wire: 0-10 V / 0-5 V  
0-1 V / 1-6 V



2-wire: 4-20 mA



3-wire: 0-20 mA  
4-20 mA



3-wire: 0-10 V / 0-5 V  
0-1 V / 1-6 V

