

Input Converters

vmu-pt, zmu-pt

General Description

Input converters (transducers) **vmu-pt** and **zmu-pt** serve to convert electrical signals of Pt100 sensors into scaled signals (0-10V, 0/4-20mA). The input range is freely selectable by means of hook switches and trimmers. Each converter can thus be adapted to local requirements in situ. The wanted current output (0/4-20mA) is selectable by means of slider switches. Converter **vmu-pt** is furnished with a separate voltage output (0-10V). Converters **vmu-pt** and **zmu-pt** are accommodated in a housing for standard snap-on rail mounting. Converter **zmu-pt** is the slim-line version (22,5mm width).

Features

- 3 or 4 wire connection for Pt100 input
- zero and gain freely adjustable
- plug-in terminal connections
- extra slim version (22,5mm width) **zmu-pt**
- CE label
- least gain range 25Kelvin



Input Converter **vmu-pt**



Input Converter **zmu-pt**

Technische Daten

Style	DIN-standard case	of ABS f. rail mounting acc. EN 50022
	vmu-pt	45x75x105mm (WxHxD)
	zmu-pt	22,5x75x105mm
Enclosure code		IP 20, terminals guarded
Ambient	operating temp.	-10...+55°C
	shelf temp.	-20...+70°C
	humidity	0...95%
Input	Pt100	3 or 4 wire connection selectable (S1)
		wire compensation up to 100Ω
Range	freely selectable	see table page 2
Output	vmu-pt	0/4...20mA burden ≤500Ω 0...10V load >1kΩ
	zmu-pt	0/4...20mA (option 0...10V)
Accuracy		typ. ±0,2%, max. 0,3% of full scale
	linearity	0,1% typ.
	temp. drift	0,01%/K
Supply voltage	vmu-pt	24, 42, 110, 230V AC, 47...63Hz, 5VA, 15...36V DC, max. 80mA
	zmu-pt	15...36V DC, max. 80mA

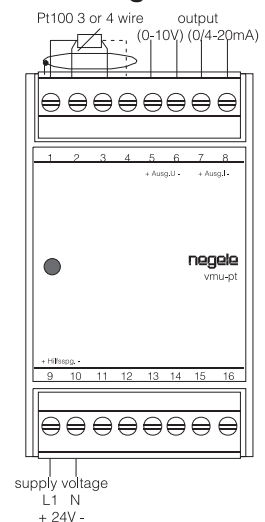
Order Examples You must specify the following when ordering:

type	supply voltage	range (if adjustment is wanted)
vmu-pt	230V AC	0...100°C
vmu-pt	110V AC	0...250°C
zmu-pt	24V DC	-50...+150°C

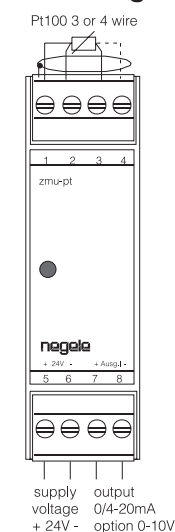
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All data subject to change and errors excluded

Connection Diagram vmu-pt



Connection Diagram zmu-pt



Trimmers and Selector Switches

P1 zero (N), adj. range -20...+50°C (no latch N1/N2)

P2 gain (V), adj. range ±30% (on latch V2)

S1 input selector, switch positions of **zmu-pt**:

- position of switch to lid = 3 wire connection
- position of switch into the interior = 4 wire connection

S2 output selector 0...20mA or 4...20mA

N1 zero offset for +ve inputs (e.g. +100°C=0mA)

N2 zero offset for -ve inputs (e.g. -50°C=0mA)

V1 gain increase by factor 2,5 (with respect to V2)

V2 normal gain

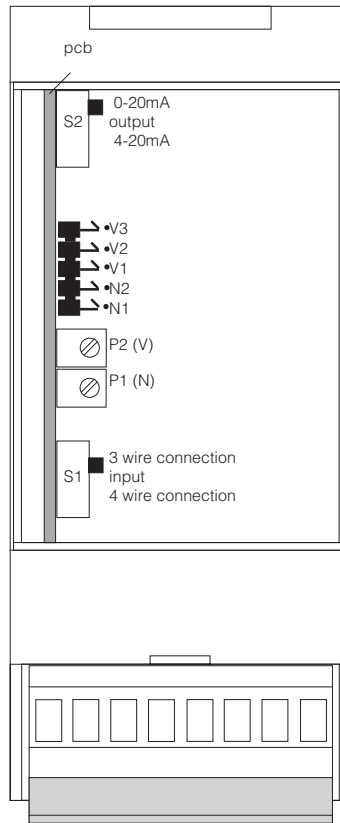
V3 gain decrease by factor 2,5 (with respect to V2)

Calibration

1. Using switch S1 select the desired input type (3 wire/ 4 wire) and using S2 select current output (0-20/4-20mA).
2. Set converter to desired input range as per table.
3. Connect Pt100 simulator (e.g. **hsm-p**) to input (pins 1-4, see pin diagram overleaf)
4. Loop ammeter (range 20mA DC) in current output line or shunt voltmeter (range 10VDC) to voltage output of **vmu**.
5. Apply supply voltage (**vmu-pt** pins 9/10, **zmu-pt** pins 5/6).
6. Apply zero signal to input (range LO e.g. 0°C).
7. Using trimmer P1 (N) set output 0mA (4mA on output 4-20mA) or 0V respectively.
8. Apply max. input signal (range HI e.g. 100°C).
9. Using trimmer P2 (V) set output signal to 20mA or 10V respectively.
10. Check intermediate values.

Block Diagram vmu-pt and zmu-pt

view vmu-pt



view zmu-pt

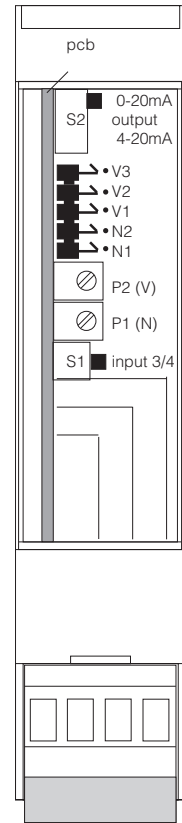


Table range setting

Input ranges	hook switches				
	N1	N2	V1	V2	V3
0-25°C...0-50°C (V 25...50K)	-	-	x	-	-
0-50°C...0-120°C (V 50...120K)	-	-	-	x	-
0-120°C...0-300°C (V 120...300K)	-	-	-	-	x
0-300°C...0-600°C (V 300...600K)	-	-	-	-	-
zero < -30°C	x				
zero > +30°C		x			

--latch open x=latch closed

