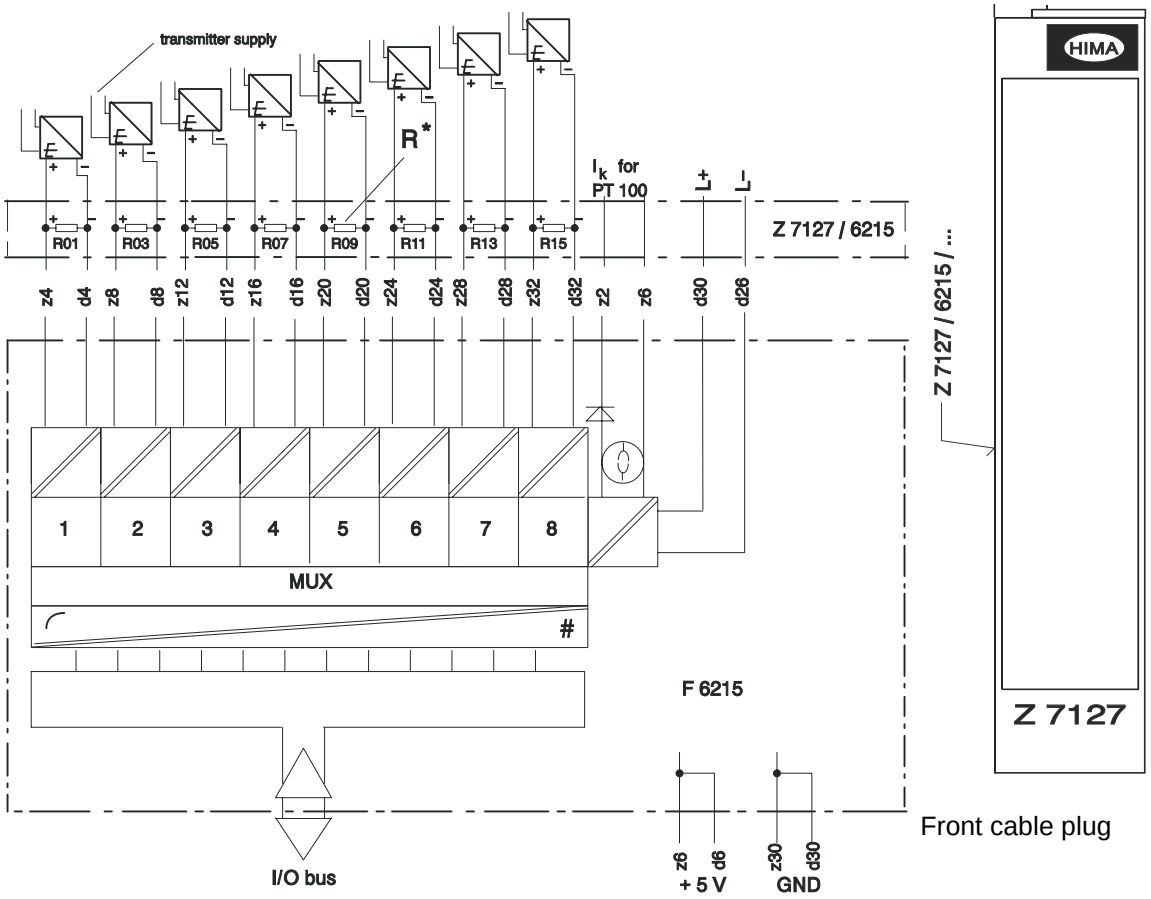
F 6215

F 6215: 8-channel analog input module

- for voltage inputs 0...1/5/10 V, Pt 100 inputs
- current inputs 0/4...20 mA,
- with safe isolation to the plant and electric isolation between the inputs
- Resolution: 12 bits



Block diagram

Figure 1: Block diagram and front cable plug

Input voltage	0...1.06 V (appr. 6 % overflow)
Digital values	0 mV = 0, 1 V = 3840, 21.3 mA = 4095
R*: Shunt with current input	50 Ohm; 0.05 %; 0.125 W; T<10 ppm/K; part-no: 00 0710500
Input resistance	min. 1 MOhm
Time const. input filter	approx. 2.2 ms
Conversion time	max. 4 ms for 8 channels
Basis error	0.1 % at 25 °C
Operating error	0.3 % at 0...+60 °C
Electric strength	200 V against Analog GND
I_k for PT 100	2.5 mA
Space requirement	4 SU
Operating data	5 VDC / 100 mA, 24 VDC / 140 mA

Channel	Connection	Colour
IK for PT100	z2 z6	WHRD WHBK
1	z4 x4 d4	BN WH
2	z8 x8 d8	YE GN
3	z12 x12 d12	PK GY
4	z16 x16 d16	RD BU
5	z20 x20 d20	VT BK
6	z24 x24 d24	WHGN WHBN
7	z28 x28 d28	WHGY WHYE
8	z32 x32 d32	WHBU WHPK
L– L+	d26 d30	BK RD
Cable screen		YEGN

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IK for PT100	z2 z6	RDWH BKWH
1	z4 x4 d4	 BN WH
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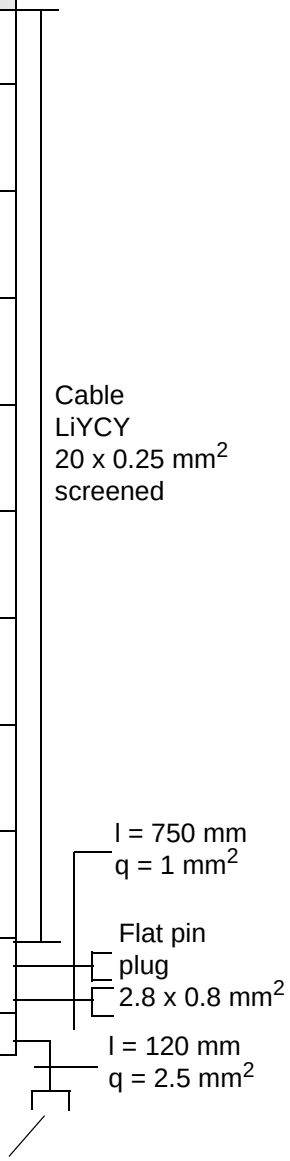

Flat pin plug 6.3 x 0.8 mm, to be connected to the earth bar under the slot

Lead marking cable plug to connect current/ voltage Z 7127 / 6215 / C.. / I (U1V)

Lead marking cable plug to connect voltage via potentiometer
Z 7127 / 6215 / C.. / U5V (U10V)

Figure 2: Lead marking cable plug

Note to voltage inputs

Note	It is recommended to short-circuit unused voltage inputs in the cable plug or on the appertaining terminal row.

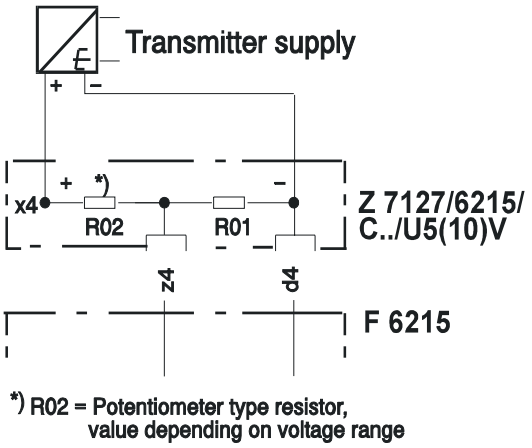

Figure 3: Connection with potentiometer (for voltage areas ≠ 0...1 V)

Note to the connection with potentiometer

Note	Due to the tolerance of the potentiometer resistors the accuracy defined in the data sheet is at first guaranteed after a new balancing of all channels within the user program, or resistors with tolerances < 1 % have to be used.

Resistor equipment for the potentiometers on Z7127 / 6215, channel 1...8:

Measuring range U_M	**R01, 03, 05, 07, 09, 11, 13, 15**	**R02, 04, 06, 08 10, 12, 14, 16**
U_M = 0...5 V Value Part no.	 33.2 kΩ, 1% 00 0751333	 133 kΩ, 1% 00 0751134
U_M = 0...10 V Value Part no.	 20 kΩ, 1% 00 0751203	 178 kΩ, 1% 00 0751174

Table 1: Resistor equipment

Current inputs
Measuring range 0/4 - 20 mA

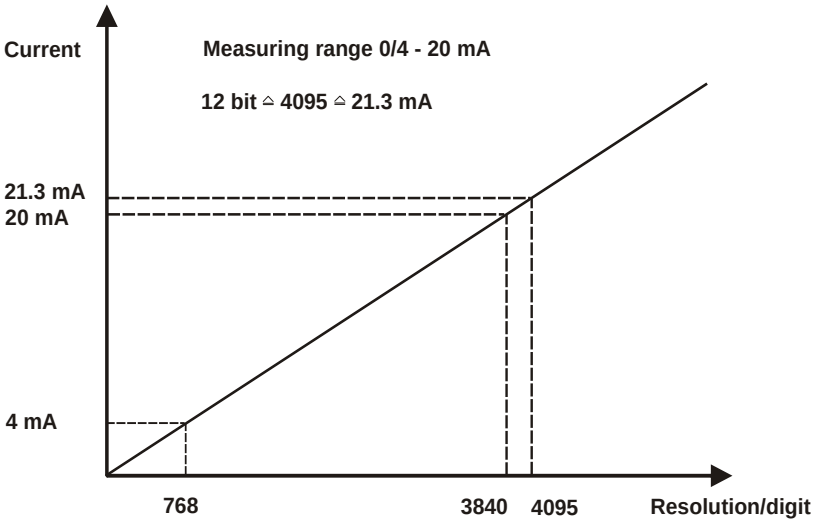

Figure 4: Current inputs

Two-wire technique with one Pt100 and line balancing (option):

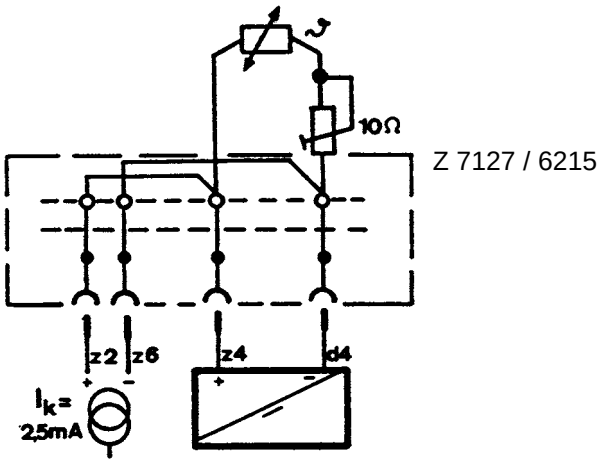

Figure 5: Two-wire technique with one Pt100 and line balancing (option)

Line compensation via correction calculation in the user program

Using of more than one Pt100 in two-wire technique:

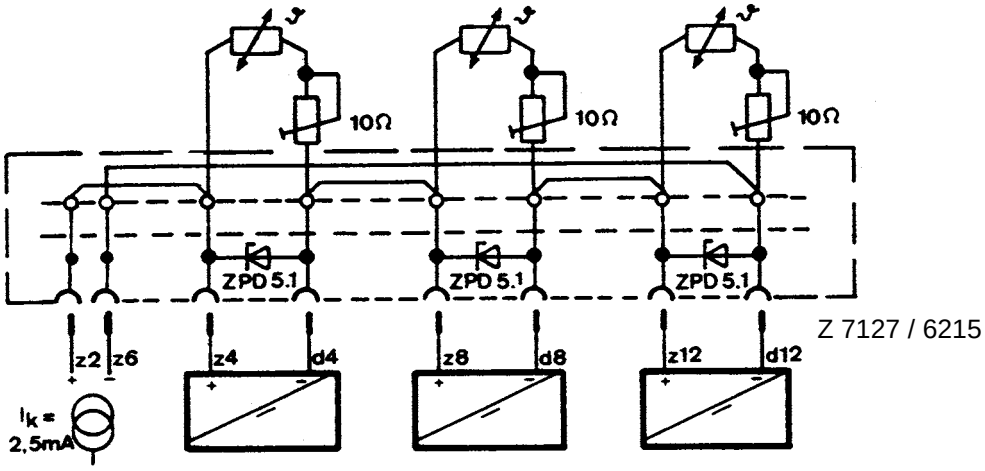

Figure 6: Using of more than one Pt100 in two-wire technique

Line compensation via correction calculation in the user program

Connection of one Pt100 in three-wire technique:

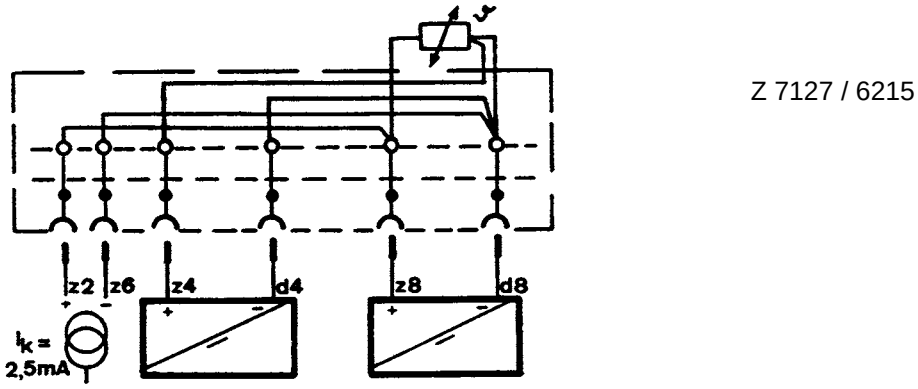

Figure 7: Connection of one Pt100 in three-wire technique:

Connection of more than one Pt 100 in three-wire technique:

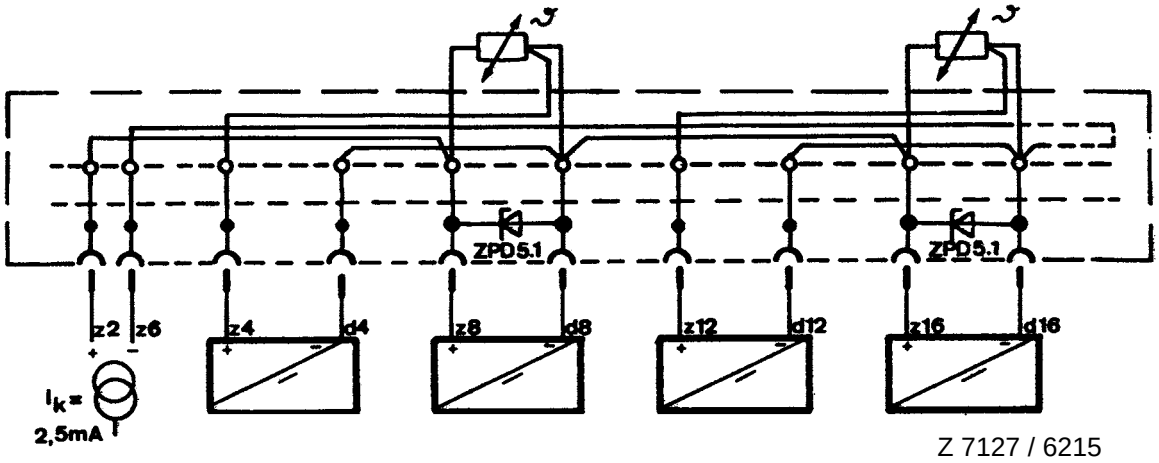

Figure 8: Connection of more than one Pt 100 in three-wire technique

Using of more than one Pt 100 in four-wire technique:

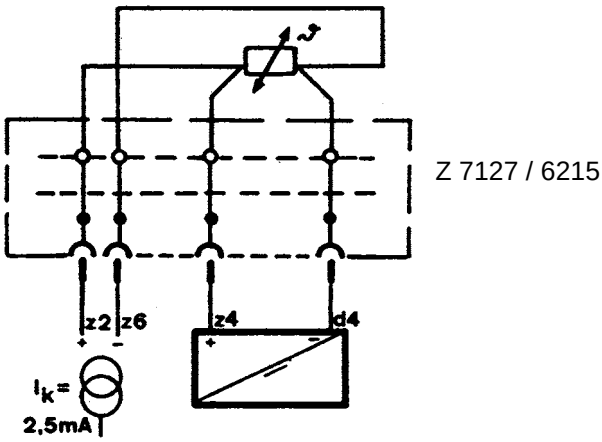

Figure 9: Using of more than one Pt 100 in four-wire technique

Using of more than one Pt 100 in four-wire technique:

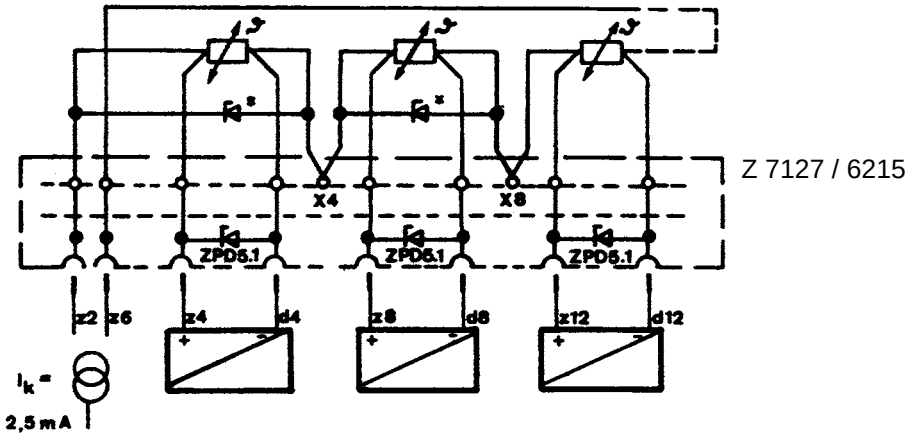

Figure 10: Using of more than one Pt 100 in four-wire technique

*) Installation of diode ZPD 5.1 on terminals in case of replacing a Pt 100 element.

Note	The resistance of the current loop must be less than 6 kOhm! Reason: To ensure the security of the functions of all other Pt 100 measurements in case of **one** thermometer break.