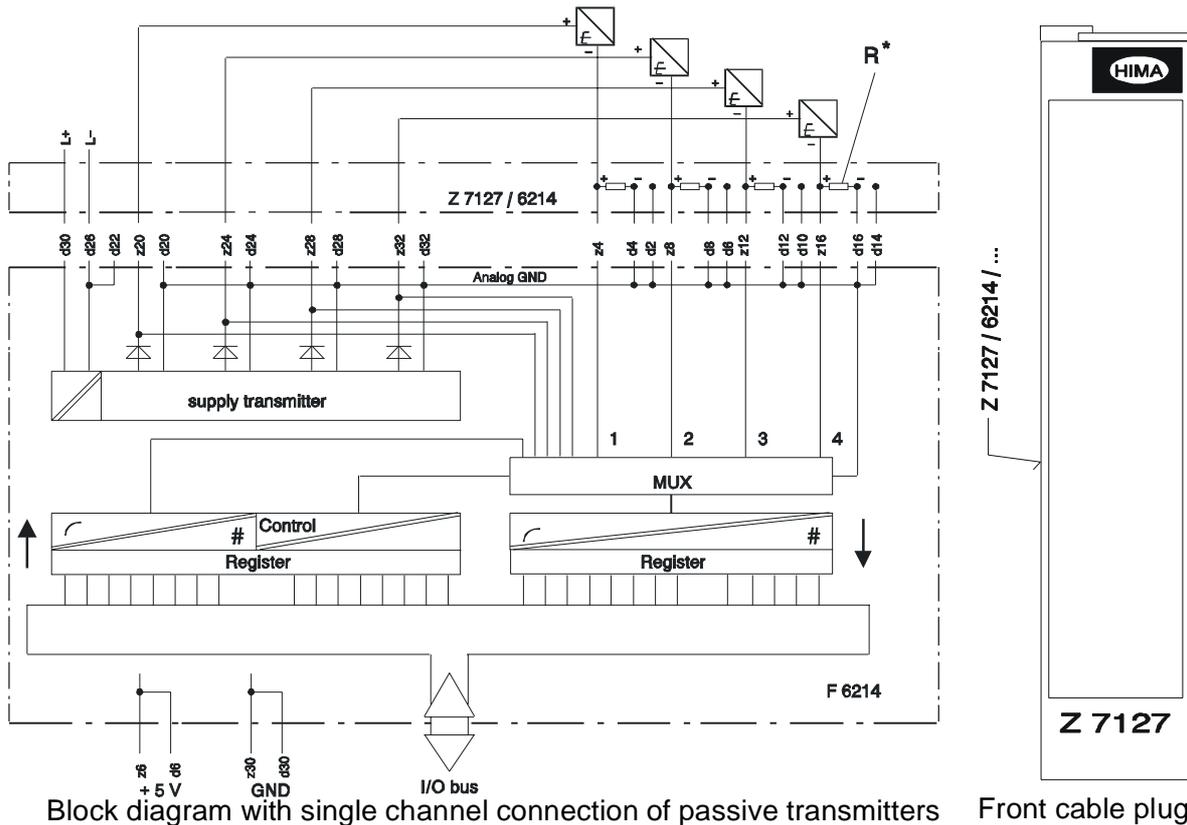




**F 6214: 4 fold analog input module,
safety related**

for transmitters in two-wire technique 4...20 mA,
voltage inputs 0...1/5/10 V,
current inputs 0...20 mA, with safety isolation
resolution 12 bits
requirement class AK 1 ... 6

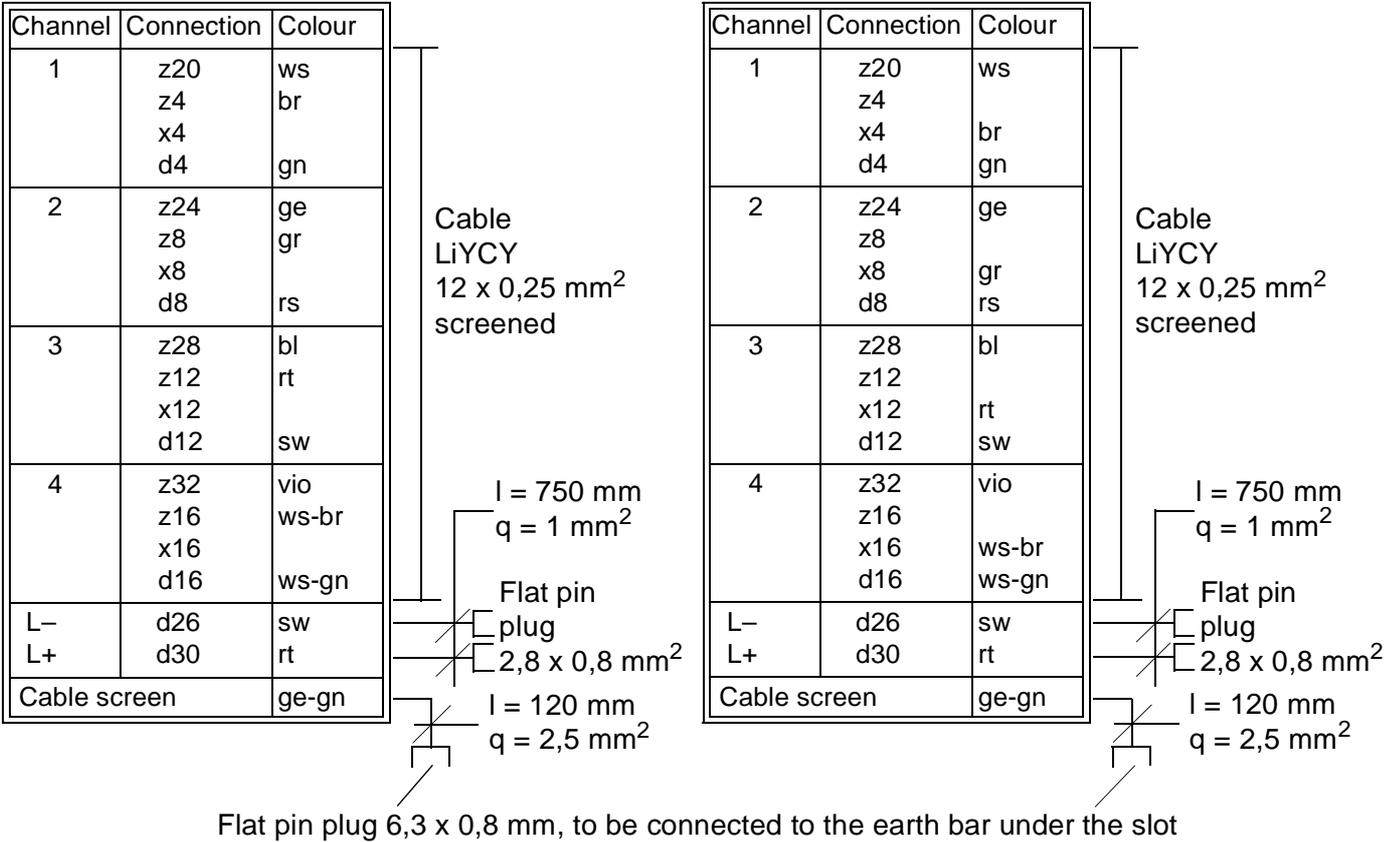


Block diagram with single channel connection of passive transmitters Front cable plug

Notes for planning:

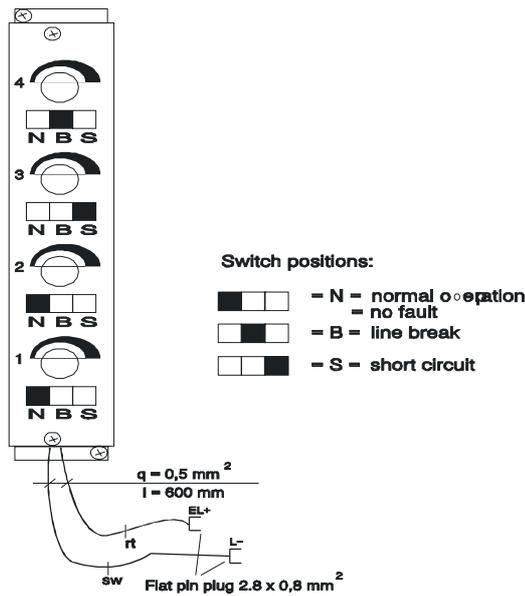
All not used channels have to be terminated.
Appertaining softw. building block: HA-RTE-. (for current version refer to the description of the operating system).

Input voltage	0...1.06 V (appr. 6 % overflow)
Digital values	0 mV = 0 1 V = 3840
Waite after test	100 ms
R*: Shunt with current input	50 Ohm; 0.05 %; 0.125 W; T<10 ppm/K; part-no: 00 0710500
Input resistance	1 MOhm
Time const. inp. filter	appr. 10 ms
Transmitter supply	25 V ... 20 V, 0 ... 22 mA
Short circuit current	25 mA
Load impedance	max. 900 Ohm
Scan time	max. 100 ms for 4 channels
Basic error	0.2 % at 25 °C
Operating error	0.3 % at 0...+60 °C
Electric strength	250 V against GND
Space requirement	4 TE
Operating data	5 V DC: 150 mA 24 V DC: 250 mA



Lead marking cable plug to connect active and passive transmitters Z 7127 / 6214 / C.. / ITI (U1V)

Lead marking cable plug to connect voltage via potentiometer and smart transmitters Z 7127 / 6214 / C.. / U5V (U10V)

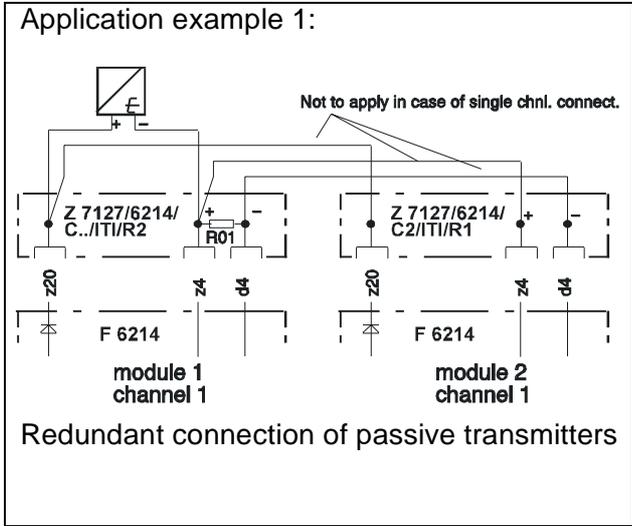


Design of test plug Z 7205

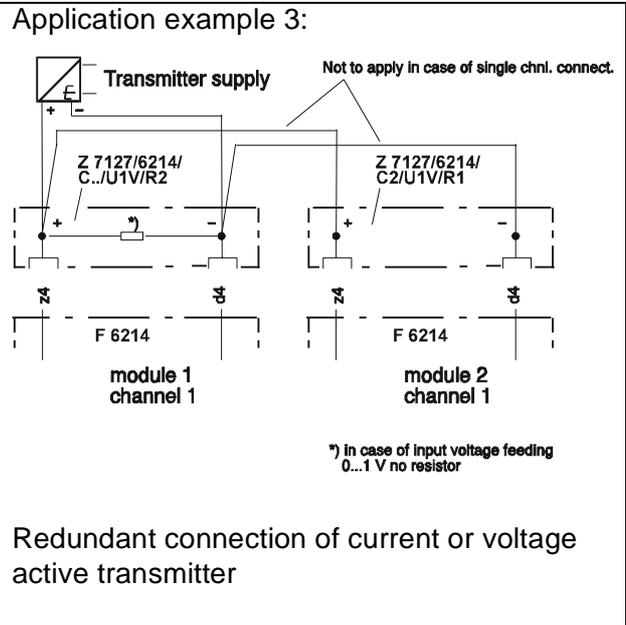
The module is automatically tested during operation. The main test routines are:

- Linearity of the AD-converter
- Cross-talk between the 4 input channels
- Function of the input filters
- Transmitter supply voltage

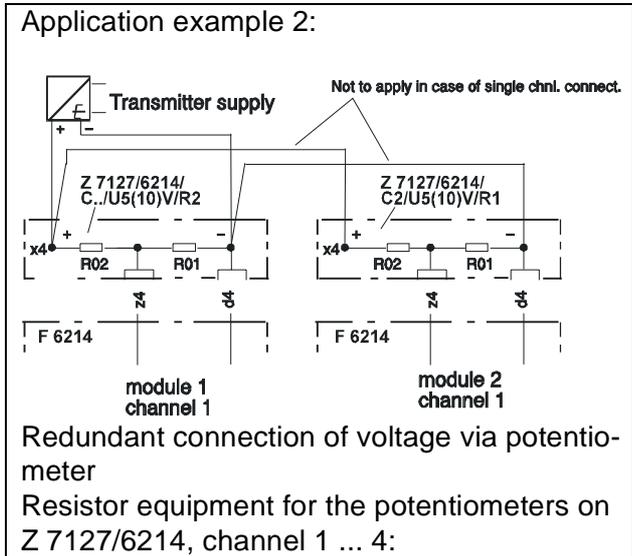
Application example 1:



Application example 3:



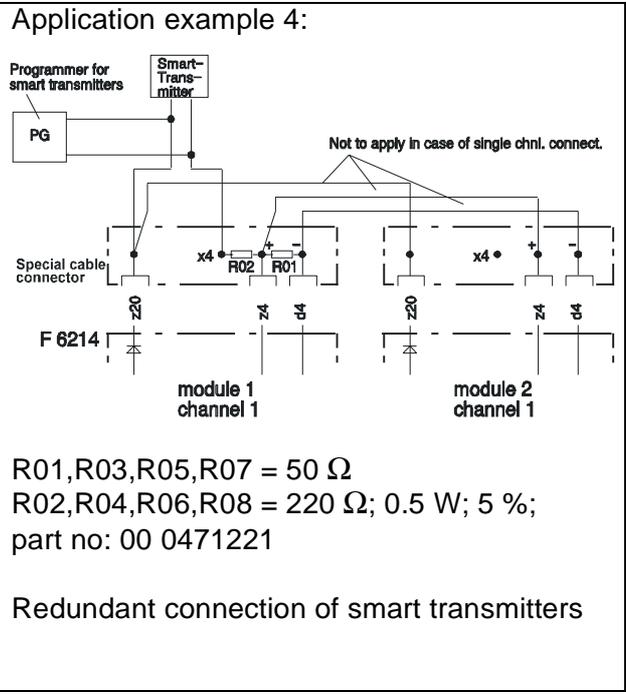
Application example 2:



Measuring range U_M	R01, 03, 05, 07	R02, 04, 06, 08
$U_M = 0 \dots 5 \text{ V}$		
Value:	42.2 k Ω , 1%	162 k Ω , 1%
part no.:	00 0751423	00 0751164
$U_M = 0 \dots 10 \text{ V}$		
Value:	38.3 k Ω , 1%	332 k Ω , 1%
part no.:	00 0751383	00 0751334

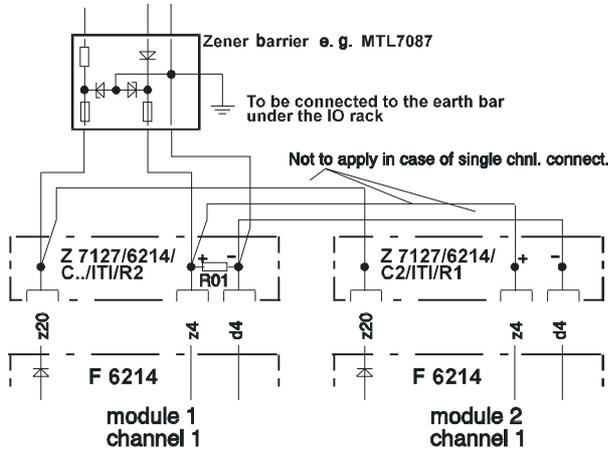
Note: Due to the tolerance of the potentiometer resistors the accuracy defined in the data sheet is at first guaranteed after a new balancing of all channels within the user's program or resistors with tolerances < 1% have to be used.

Application example 4:



R01,R03,R05,R07 = 50 Ω
R02,R04,R06,R08 = 220 Ω ; 0.5 W; 5 %;
part no: 00 0471221

Application example 5:



Note if used together with zener barrier:
To avoid cross talking in case of a short circuit between the supply line of a transmitter and the cable screen earthing of the analog GND of the module F 6214 is recommended.

Redundant connection for Zener barrier
Resistor R01 = 50 Ω

Occupation of not used inputs

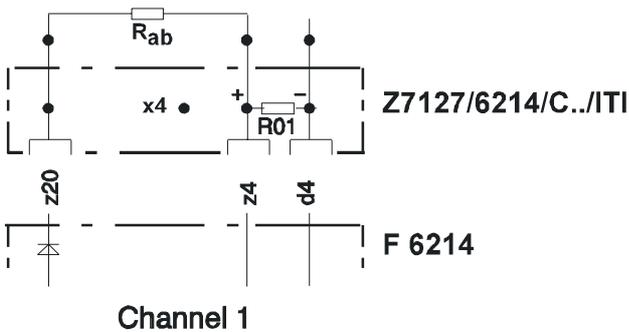
To guarantee the correct operation of the internal test routines not used analog inputs have to be terminated with resistors.

Not used inputs, single channel connection

All examples are for channel 1.

Installation of the resistors outside the cable connectors: On terminals.

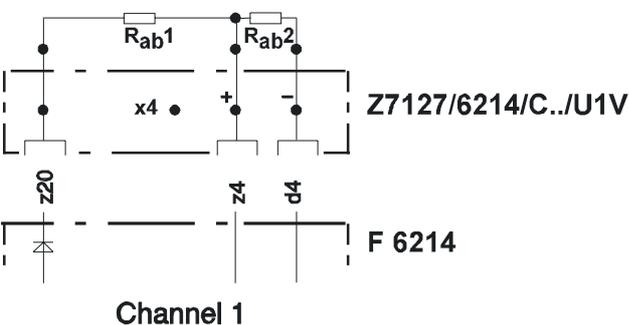
Active/passive Transmitter 0/4 ... 20 mA



Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R01, 03, 05, 07	R_{ab}
Value:	50 Ω, 0.05%	3.3 kΩ, 5%
Part no.:	00 0710500	00 0471332

Voltage input 0 .. 1 V



Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R_{ab1}	R_{ab2}
Value:	50 Ω, 0.05%	3.3 kΩ, 5%
Part no.:	00 0710500	00 0471332

Voltage input 0 .. 5 V

Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R01, 03, 05, 07	R02, 04, 06, 08	R_{ab}
Value:	42.2 k Ω , 1%	162 k Ω , 1%	1 M Ω , 5%
Part no.:	00 0751423	00 0751164	00 0471105

Channel 1

Voltage input 0 .. 10 V

Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R01, 03, 05, 07	R02, 04, 06, 08	R_{ab}
Value:	38.3 k Ω , 1%	332 k Ω , 1%	1 M Ω , 5%
Part no.:	00 0751383	00 0751334	00 0471105

Channel 1

Connection of smart transmitters

Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R01, 03, 05, 07	R02, 04, 06, 08	R_{ab}
Value:	50 Ω , 0.05%	220 Ω , 5%	3.3 k Ω , 5%
Part no.:	00 0710500	00 0471221	00 0471332

module 1 channel 1 module 2 channel 1

Not used inputs, redundant connection

All examples are for channel 1.

Install the resistors outside the cable connectors on terminals.

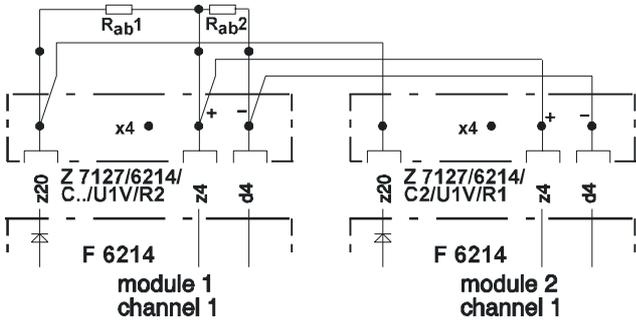
Active/passive Transmitter 0/4 ... 20 mA

Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R01, 03, 05, 07	R_{ab}
Value:	50 Ω , 0.05%	3.3 k Ω , 5%
Part no.:	00 0710500	00 0471332

module 1 channel 1 module 2 channel 1

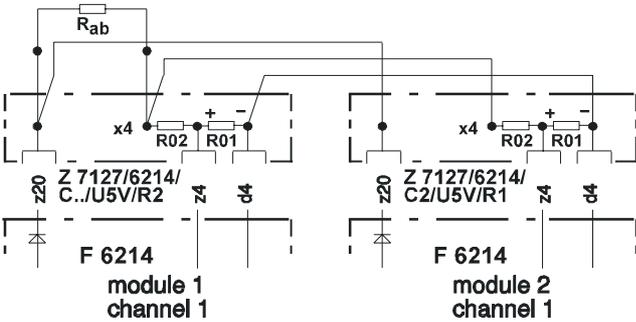
Voltage input 0 .. 1 V



Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R01, 03, 05, 07	R_{ab}
Value:	50 Ω , 0.05%	3.3 k Ω , 5%
Part no.:	00 0710500	00 0471332

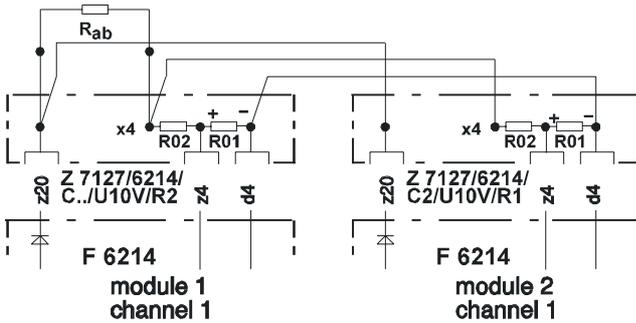
Voltage input 0 .. 5 V



Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R01, 03, 05, 07	R02, 04, 06, 08	R_{ab}
Value:	42.4 k Ω , 1%	162 k Ω , 1%	1 M Ω , 5%
Part no.:	00 0751423	00 0751164	00 0471105

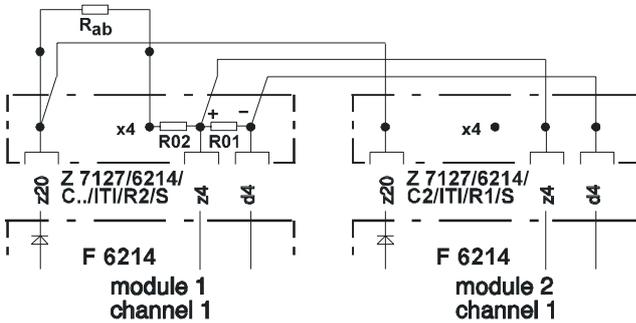
Voltage input 0 .. 10 V



Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R01, 03, 05, 07	R02, 04, 06, 08	R_{ab}
Value:	38.3 k Ω , 1%	332 k Ω , 1%	1 M Ω , 5%
Part no.:	00 0751383	00 0751334	00 0471105

Connection of smart transmitters



Resistors for channels 1 ... 4 (R_{ab} = terminating resistor with not used channels):

Resistor	R01, 03, 05, 07	R02, 04, 06, 08	R_{ab}
Value:	50 Ω , 0.05%	220 Ω , 5%	3.3 k Ω , 5%
Part no.:	00 0710500	00 0471221	00 0471332