System description

In the field of process automation, the functionality of input or output modules of programmable logic control or distributed control systems is often inadequate for applications. For the ensuing signal matching between the field and control levels, the interface family Contrans I has a comprehensive program involving electrically isolated signal processing components for the supply of power to transmitters, for load increasing, for measuring temperatures, setting alarms, also including further modules for processing binary signals such as switch amplifiers, relays and optocouplers.

Analog modules are suitable for transmitting the HART field communication protocol. A central PC makes it possible to parameterize and centrally configure the underlying field unit level with the aid of special FSK bus amplifiers. All modules are optionally provided with intrinsically safe signal circuits.

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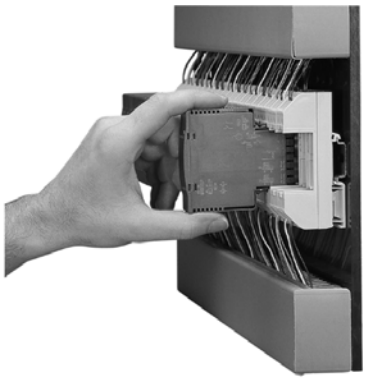


Separation of wiring and function

The Contrans I family stands out with its modular design, which permits electronic units to be plugged in a standard sockets or backplanes. Only the DIN rail sockets are required for wiring. This makes it easy to conduct functional matching even during the commissioning phase.

If maintenance becomes necessary, the defective module can be removed and replaced by just plugging the substitute into the standard socket. The replacement is done. There is no necessity to disconnect and reconnect wires. One source of error is thus removed. No expert is required.

In order to reduce the expenditure for planning and wiring, prewired backplanes for 8 or 16 plug-in function modules are provided. Power is fed from a central source. A multi-core system cable with two pluggable ends enables all modules to be connected directly to the input and output modules of the control unit.

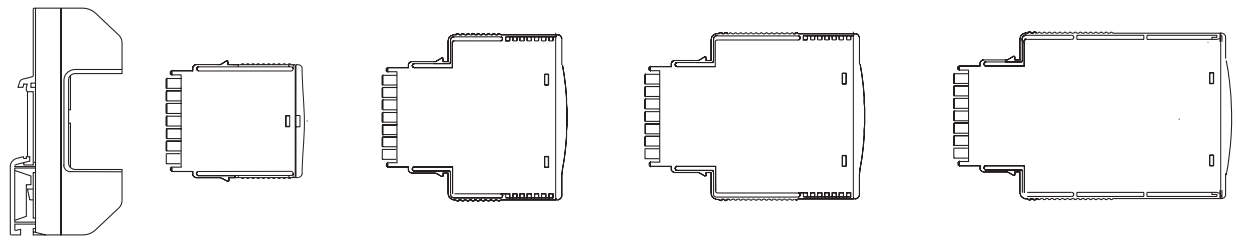
The result: reduced expenditure for planning, documentation and wiring; also reduced time for installation, combined with extrem maintenance- and user-friendliness. All of these makes Contrans I a very cost-effective solution.

Contrans I – socket mounting

Type of modules for binary signals:
- Switch Amplifier
- Solenoid Driver

Type of modules for analog signals:
- Input Isolator
  - Loop Powered Supply
  - Isolating Power Supply
  - Input Isolator
  - Input Isolator, programmable
  - Universal Isolator
- Transmitter
  - Temperature Transmitter
  - Intelligent Transmitter
- Output Isolator
  - Loop Powered Isolator
  - Isolating Driver
- Trip Amplifier

The size of the modules depends to the functionality. The size 3 is not used today.

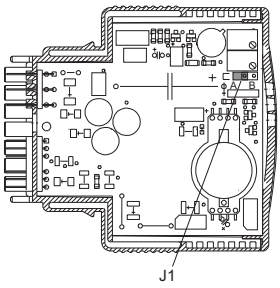


Isolating Power Supply

1 channel

V17151-21_

- **Power supply for loop powered transmitters**
- **Isolating driver for 4...20 mA**
- **Wire break monitoring output overrange/underrange (Jumper J1)**



Module size 2

Module fits for:

Socket		Backplane	
V17111-100	●	V17111-2 _ _	●
V17111-110	●	V17111-3 _ _	●
V17111-120	●	V17111-6 _ _	●
V17111-130	●		

Output

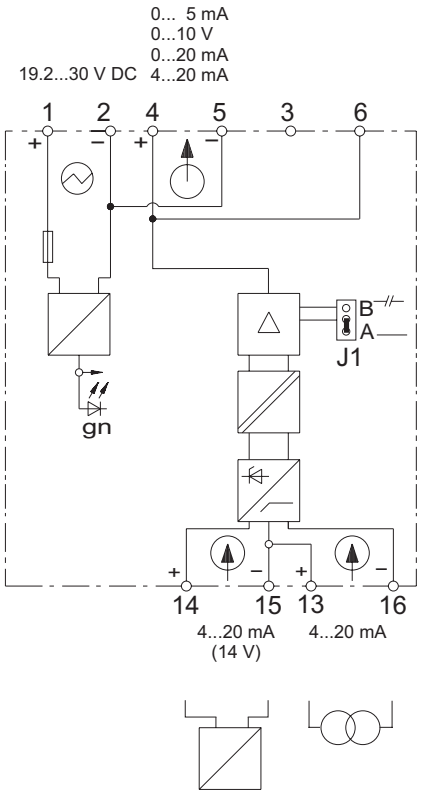
Transformation ratio		1:1		
Residual ripple (peak-to-peak)		< 0.25 %		
Output signal short-circuit proof				
Type	Signal	Wire break	Short-circuit	Load
V17151-210	4...20 mA	< 0.1 > 22 mA	23...30 mA	0...600 Ω
V17151-211	0...20 mA	0 > 22 mA	23...30 mA	0...600 Ω
V17151-212	0...10 V	0 > 11 V	–	> 10 kΩ
V17151-213	0... 5 mA	0 > 5.13 mA	–	0...2.4 kΩ

Input

Input current	4...20 mA
Short circuit current	23...30 mA
Residual ripple (peak-to-peak)	< 100 mV
Isolating power supply (terminal 14/15)	
Supply voltage at 22.7 mA	≥ 14 V
Isolating driver (terminal 13/16)	
Voltage drop	< 1 V

General data

LED indicators, power “On“ (green)	
Isolation	
Input – output/power supply	2.3 kV
Max. ambient temperature	-20...+60 °C
Weight	90 g
Power supply	
Rated voltage	19.2...30 V DC
Power consumption	1.05 W
Performance under reference conditions	
Linearity deviation	< 0.1 %
Error limit	< 0.25 %
Temperature effect	< 0.1 %/10 K
Impedance effect	< 0.05 %
Response time	< 50 ms



Functions of the plug-in jumpers J.:

J1 Wire break monitoring
A = without
B = with

The positions illustrated on the circuit diagram represent standard adjustments (delivery status)