

## Description

V2 rack is intended for mechanical installation of some modules of VZ series. These are converters designed with rear connector, which transmits the outputs signals and power supply, whereas the input signals are transmitted over the input connector at front side of the module. The power supply of these converters is provided by 12V stabilizer, being the part of V2 rack. This voltage is taken from input, not stabilized 24 V voltage.

V2 rack has S2 terminal strip with two inputs for power supply voltage, separated by diodes. The power supply racks can thus be backed up by second power supply. The output signals from converters are led to two CANON connectors, via eight channels at each connector. The LED diodes at D2 rack signal the presence of 12V and 24V voltage. The 12 V power failure is also signaled by contact at S1 terminal strip.

## Technical parameters

Parameter	Conditions	Min.	Type	Max.	Units
Weight	According to type and number of modules		1300		g
Dimension			See figure 1		
Number of I/O modules				8	
Power supply voltage		18	24	28	V
Current drain			0.7		A
Power supply output current	12V			1,8	A
Load-carrying capacity of signaling contacts	30V DC 48V AC			0,5	A
Terminal strip conductors cross section				1	mm <sup>2</sup>
Safety:	According to CSN 33 2000-4-41 and CSN EN 61010-1				
Coordination of isolation	Category of overvoltage II, degree of pollution 2 According to CSN EN 61010-1				
EMC	According to CSN EN 61000-6-2				
Working temperature range		-5		70	°C
Atmospheric pressure		66		106	kPa
Humidity	Maximum content of water 28 g/kg of dry air	5		95	%
Protection	IP20				

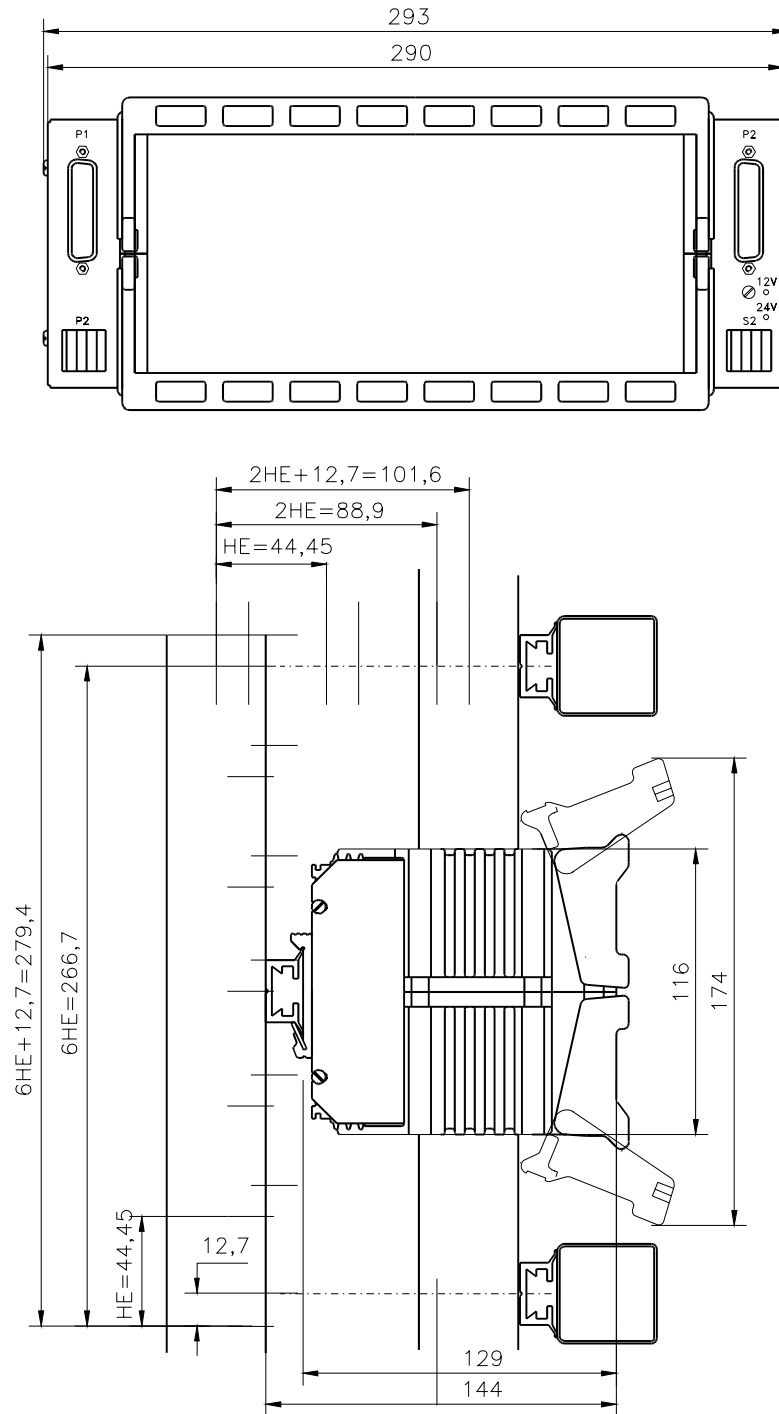
Classification of environmental parameters <sup>1</sup>	IE36, according to CSN EN 60721-3-3				
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## APPLICATION PRINCIPLES

### Installation and mechanical dimensions

V2 rack is to be installed to DIN 35 mm installation rail. Figure 1 shows mechanical dimensions and installation space in rack, necessary to trouble-free access to V2 rack.

Figure 1



<sup>1</sup> After installation into the rack with IP64 protection

### Terminal strips and connectors

V2 rack body has positioned two terminal strips WAGO (S1 and S2) and two CANON connectors (P1 and P2). S2 terminal strip serves to connection of 24 V voltage. V2 rack has two inputs for power supply voltage, separated by diodes. The power supply racks can thus be backed up by second power supply. The dropout of 12V internal power supply is signaled by contact at terminals of S1 terminal strip. The designation of terminals of terminal strip with signals is given in table 1.

Terminal strip	Number of terminal	Type	Signal
S1	1	Output	Connected with 2 in case of 12 V dropout
	2		Central output of relay
	3		Connected with 2 in case of 12 V presence
	4		Not used
S2	1	Input	+24V, power supply 1
	2		-24V, power supply 1
	3		+24V, power supply 2
	4		-24V, power supply 2

Table 1

The output signals from converters plugged into the rack are led to P1 and P2 connectors. The P1 connector has first eight channels (the first four modules from left) and P2 connector has remaining eight channels (four modules from right). The distribution of measuring channels in rack is given in table 2.

Module position	1	2	3	4	5	6	7	8
Channel	1	3	5	7	1	3	5	7
	2	4	6	8	2	4	6	8
Connector	P1				P2			

Table 2

To connect the V2 rack with measuring DV 457 A or DV457 B board, use two K81 cables.

### EMC

ZAT-V converters are intended for operation in industrial environment, where there is increased level of disturbances. The design of modules and V2 racks respect this fact. In order to suppress the disturbances, it is necessary to observe the following principles upon installation:

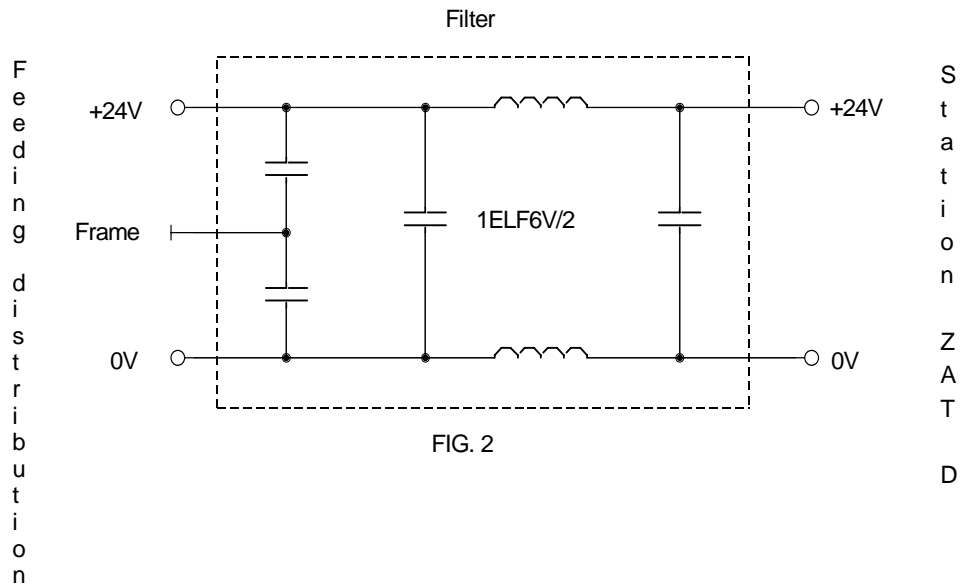
#### Station location

V2 racks are to be positioned in metallic cabinets or in groups in large cabinets. All structural parts of cabinets, holding the racks, must be conductively connected in all joints; the best method is a welding. The sole connection by conductor is not good enough, done as protection against electric current.

The mounting mechanism of rack also serves to divert the disturbances and the connecting rail must be properly conductively connected at both ends with cabinet frame.

#### Power supply

V2 rack is supplied by 24V DC, which is taken either from central power supply and it is led to individual stations via the cable, or from local small power supply 220V AC / 24V DC, located by the station. In case the central power supply is used, it is recommended to use the filter within the power supply line as per figure 2, built in the cabinet, where the station or group of stations is located. The recommended filter is ELFIS 1ELF6V/2. The filter grounding is at side of lead-ins and it is connected via the **shortest way** to cabinet frame.



**Input leads and shielding**

At location, where the cables entry to the cabinet, or to a cabinet, where the rack or group of V2 racks is located, it is necessary to connect the shielding of incoming cables with cabinet frame. The connection is made by fastening of cable with bare shielding by means of plastic strips to 3E94-0110 grounding strip, see figure 3. The grounding strip must be connected as minimum at both ends with cabinet frame, in shortest possible way.

Figure 3

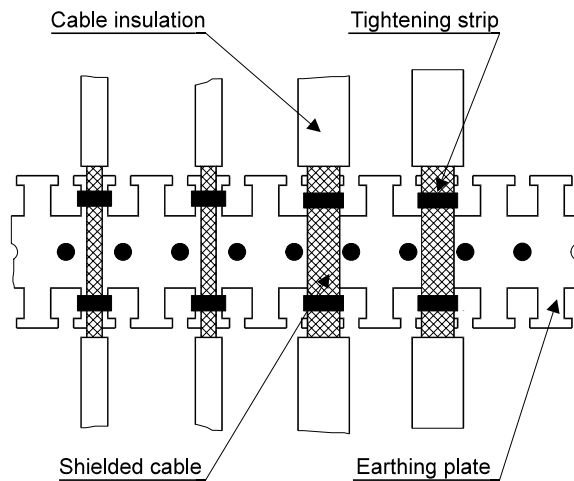


Fig. 3

The shielding of cable may, but does not have to continue inside the cabinet. The continuous grounded shielding is not connected to any point within the rack. The ground led to lowest terminal of each module is usually not connected; this lead is used only in special cases.