Model number

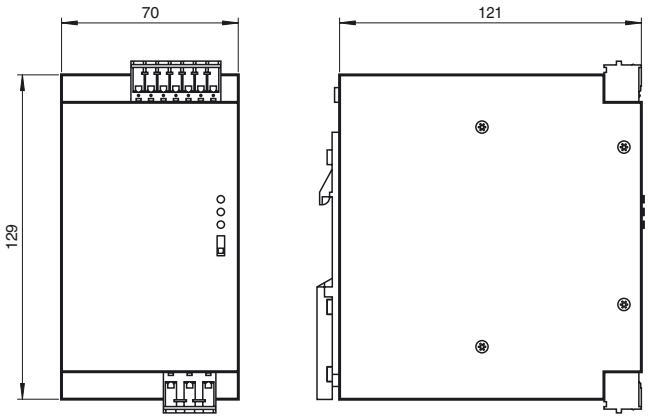
VAN-115/230AC-K22-EFD

AS-Interface power supply

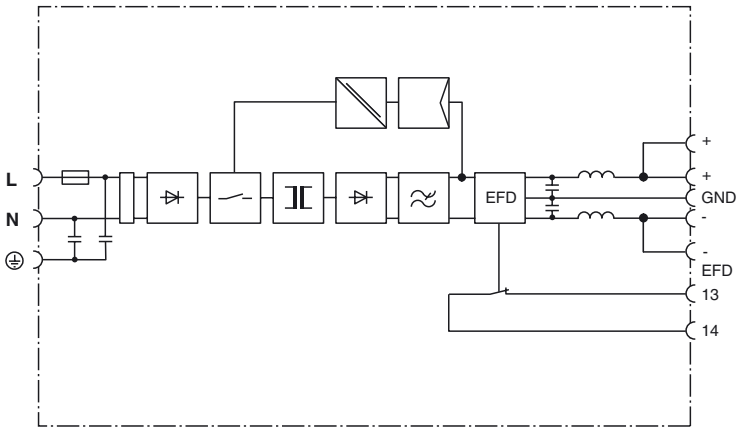
Features

- 4.8 A output load
- LED operating display
- 100 V AC up to 240 V AC
- AS-Interface filter integrated
- Power factor correction
- Earth fault detection

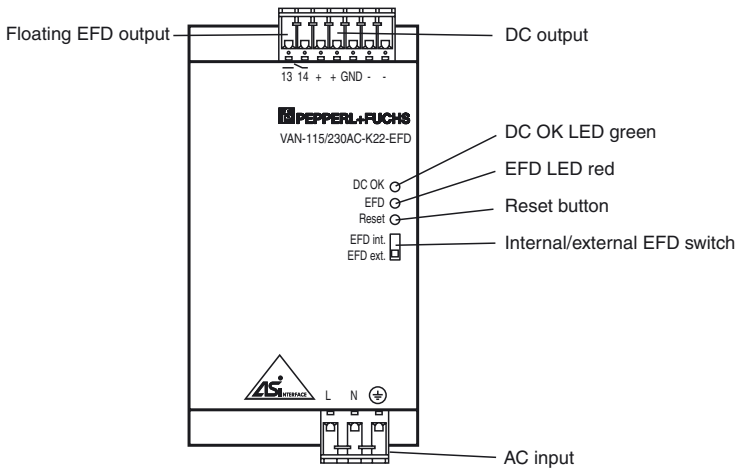
Dimensions



Electrical connection



Indicating / Operating means



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Technical data

General specifications		
UL File Number		E223176
Functional safety related parameters		
$MTTF_d$		360 a
Mission Time (T_M)		10 a
Diagnostic Coverage (DC)		0 %
Indicators/operating means		
Reset push-button switch		earth fault simulation/reset of earth fault display
Ground fault monitor selection switch		int:shutsoff power supply on ground fault ext: doesn't shut off on ground fault
LED DC OK		Functional display; LED green flashing: in operation, but error off: no power supply
LED EFD		earth fault display; LED red
Electrical specifications		
Fusing		5 AT
Rated operational voltage	U_e	nominal: 100 … 240 V_{AC} permissible: 85 … 264 V_{AC} / 90 … 350 V_{DC}
Rated operational current	I_e	1.8 A at 120 V AC 1 A at 230 V AC
Supply frequency		45 ... 65 Hz
Efficiency		≥ 86 %
Output		
Current limit		approx. 6 A
Current		4.8 A
Voltage		29.5 ... 31.6 V DC
Switch-on delay	t_{on}	< 500 ms
Residual ripple		≤ 100 mVss, 0 ... 10 kHz
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Shock and impact resistance		30 *g*, in all spatial axes in accordance with IEC 68-2-27
Vibration resistance		< 15 Hz, Amplitude ± 2.5 mm 15 ... 25 Hz , 2.3 g, t_V = 90 min.
Pollution Degree		2
Mechanical specifications		
Protection degree		IP20
Protection class		I, Protective conductor connection necessary
Connection		Connection terminals, max. conductor cross-section 0.5 ... 2.5 mm^2 stripped length 10 mm
Material		
Housing		AluNox (AlMg1), closed
Mass		approx. 900 g
Mounting		DIN rail
Compliance with standards and directives		
Directive conformity		
Low Voltage Directive 73/23/EEC		EN 61000-6-2, EN 50081-2
EMC Directive 89/336/EEC		EN 61000-6-2, EN 50081-2
Standard conformity		
Pollution Degree		EN 50178

Notes

In an AS-Interface network only one device can be operated earth fault detection. If there are many devices in an AS-Interface network, this can lead to the earth fault monitoring response threshold becoming less sensitive.

Function

The primary switched-mode power supply unit has been conceived for field bus applications, in which the power and data are commonly transferred over a two-wire cable (AS-Interface concept). It supplies a fully-populated AS-Interface system with an output current of 4.8 A. Due to the sinusoidal current drawn from the power supply harmonics are avoided.
By this means the power supply unit provides the energy, the data decoupling from the supply source and the balancing of the two output cables (AS-Interface + and AS-Interface -) vis-a-vis the machine earth (Screen connection). The exact and transformation coupling enables the use of unscreened load cables.
In addition to the harmonic filtering, the power factor correction provides for a power supply failure buffering of more than 40 ms over the full input voltage range.
The power supply unit is protected by an internal fuse, an additional circuit breaker device is not required.

Earth Fault Detection (EFD):
The switch output of the EFD monitor is used to evaluate a detected earth fault in the AS-Interface system. The system can be shut down in a targeted manner with the potential-free transistor output via the control program. The output is closed in the normal case and is held open on the detection of an earth fault. In addition, an earth fault is signalled via the "EFD" LED. This output is not closed again until the power supply is restarted or the reset button is actuated (> 2 seconds). If required the EFD monitor can be configured such that the power supply automatically switches off on detection of the earth fault in the AS-Interface system. This setting can be activated with the selector switch on the underside of the device
Earth fault monitor test:
A brief actuation (< 1 second) of the reset button causes an earth fault to be simulated in the device. Earth fault detection, evaluation, signalling and the switch output can be tested by this means at appropriate intervals. The earth fault simulated in this manner can be reset by once more actuating the reset button (> 2 seconds).

Accessories

AS-Interface Power Calculator
AS-Interface Power supply and network checking utility

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