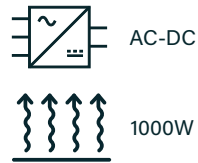
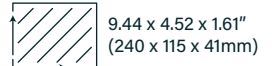


YEF1000 SERIES



DIMENSIONS:



**SEMI-POTTED
FANLESS**

**CURRENT & VOLTAGE
PROGRAMMABLE**

-30 to 70°C OPERATION

**REDUNDANCY
(OPTIONAL)**

OUTPUT ADJUST POT

**UP TO 96%
EFFICIENCY**

Part numbers

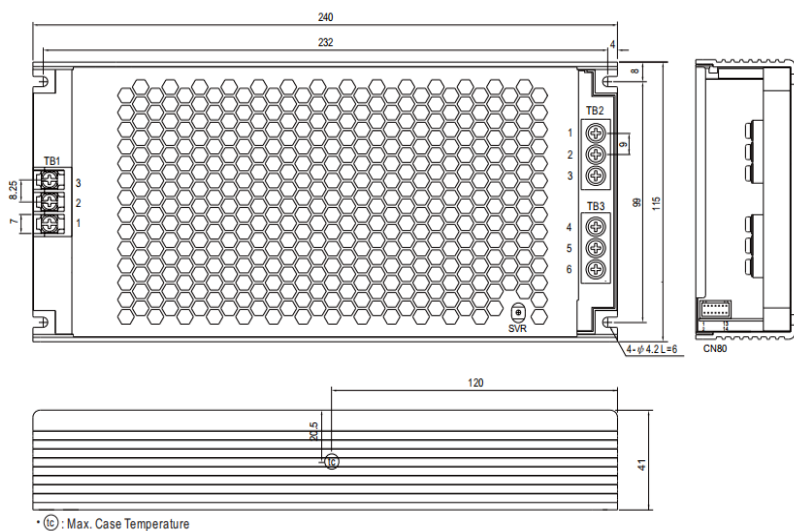
YEF	1000	-	12	R
Series	Power (W)		Output voltage (V)	Option
			12 = 12VDC 24 = 24VDC 36 = 36VDC 48 = 48VDC	R = Redundancy

Key specifications

Input range	Safety certification	Features	Efficiency	Environmental performance
90-264VAC	EN62368-1, EN60335 EN61558-1 EN61558-2-16 UL62368-1 (pending)	Voltage Adjust DC OK (option) Redundancy (option)	94-96%	Operational: -30 to 70°C

YEF1000 SERIES

Mechanical

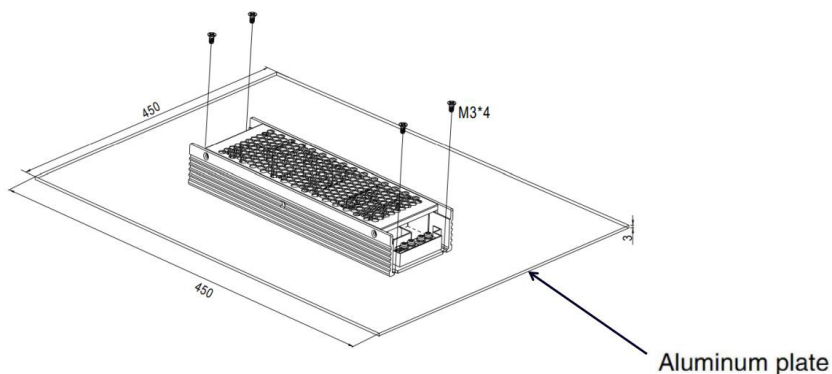


Input Connector	Pin/Function
1	AC L
2	AC N
3	GND

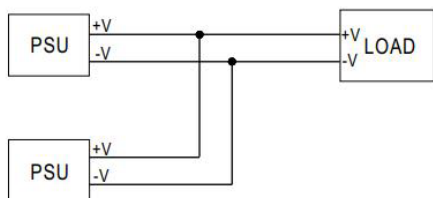
Output Connector	Pin/Function
1, 2	-VO
3, 4	+VO

CN1 Connector	DC OK
1	DC COM1
2	DC COM2

Application Notes



Redundant function (optional)

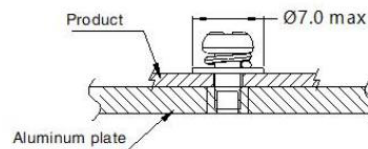


Notes

- All dimensions shown in mm
- General tolerance ± 1.00
- Max torque Output 8Kgf-cm
Input 5Kgf-cm
- CN1 mates with JST PHR-2

Weight

1750g



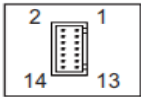
Position	Screw Spec.	Torque(max)
① - ④	M3	0.4N • m

Notes

Redundancy option permits the direct connection of two units. The maximum power of the system should be no greater than the power output of one unit

Application Notes

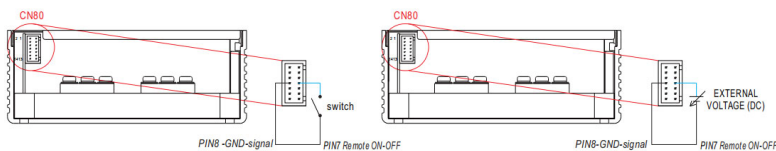
Control Pin No. Assignment (CN80) : HRS DF11-14DP-2DS or equivalent



Mating housing	HRS DF11-14DS or equivalent
Terminal	HRS DF11-14SC or equivalent

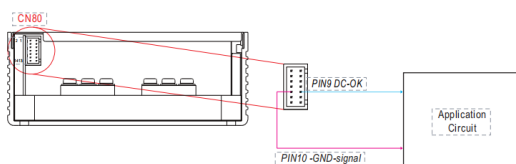
Input Connector	Pin/ Function	Description
1, 3	PV	Connection for output voltage programming
2	PV-DIS	Short connection between PV (pin1) and PV-DIS (pin2) if output voltage programming function is not activated
4,8,10,12	GND (Signal)	GND
5	+12V-AUX	Auxiliary voltage output, 10.8-13.2V, referenced to GND-AUX (pin6) The maximum load current is 0.5A. The output is not controlled by "remote ON/OFF"
6	GND-AUX	Auxiliary voltage output GND The signal return is isolated from the output terminals (+V & -V)
7	Remote ON-OFF	The unit can turn the output ON/OFF by electrical signal or dry contact between remote ON/OFF Short (0-0.5V): Power ON; Open (2-5V): Power OFF; The maximum input voltage is 5.5V
9	DC-OK	Low (-0.1-0.5V): When the Vout < 80% ±5% High (4.5-5.5V): When Vout > 80% ±5% The maximum sink current is 10mA and only for output
11	PC	Connection for constant current level programming
13	Vccs	Positive output voltage signal
14	PC-DIS	Short connecting between Vccs (pin13) and PC-DIS (pin 14) if output current programming function is not activated

DC-OK



DC-OK signal	Power Supply Status
Hi >4.5-5.5V	ON
Low <0.1-0.5V	OFF

Remote on-off



Remote ON-OFF	Power Supply Status
Low <0-0.5V or short circuit	ON
Hi >2-5V or open circuit	OFF

YEF1000 SERIES

Models & Ratings

Model Number ⁽¹⁾	Output power	Output voltage	Output voltage adjustable range	Output current	Efficiency ⁽²⁾	Ripple and noise ⁽³⁾
YEF1000-12	960W	12V	12-14.4V	80A	94%	150mVp-p
YEF1000-24	1008W	24V	24-28.8V	42A	95%	240mVp-p
YEF1000-36	1008W	36V	36-43.2V	28A	95.5%	240mVp-p
YEF1000-48	1008W	48V	48-57.6V	21A	96%	300mVp-p

1. For redundancy and DC OK option add R. For example YEF1000-12R
2. Typical at 100% load 230V

3. 20MHz BW 0.1uF and 47uF capacitors in parallel

Input

Parameter	Min	Typical	Max	Unit	Notes/Conditions
Input voltage	90		264	VAC	See page 5 for derating curve, 250-370VDC
Input frequency	47		63	Hz	
Input current (rms)		10.1		A	115VAC
		5.3			230VAC
Inrush current	20		40	A	±10%. 40A at 230VAC and 20A at 115VAC at 25°C
Power factor		0.99			At full load 115VAC
		0.95			At full load 230VAC
Leakage current			<0.75	mA	

Output

Parameter	Min	Typical	Max	Unit	Notes/Conditions
Output voltage	12		48	VDC	See Models & Ratings table
Set point accuracy		±1		%	
Line regulation		±0.5		%	
Load regulation		±0.5		%	
Ripple & noise	150		300	mVp-p	20 MHz bandwidth, 47uF, 0.1uF cap See model table above
Hold up time	12			mS	115VAC full load room temp

YEF1000 SERIES

Controls/Functions

Parameter	Notes/Conditions
DC OK	Contact rating 15Vdc 10mA. Open = Fail
Redundancy	Redundancy option permits the direct connection of two units. The maximum power of the system should be no greater than the power output of one unit

Protections

Parameter	Min	Typical	Max	Unit	Notes/Conditions
Short circuit					Trip and restart
Overload	105		150	%	
Overvoltage	12V model - 16V 24V model - 33V 36V model - 49V 48V model - 66V			VDC	Max figures. Latch reset
Over temperature protection					Self recovery after temperature drops

Safety

Parameter	Min	Typical	Max	Unit	Notes/Conditions
Safety standards					EN 62368-1, EN 61558-1, EN 60335-1, EN 61558-2-16, UL 62368-1 (pending)
Isolation: Input to output	3750			VAC	
Isolation: Input to ground	2000			VAC	
Isolation: Output to ground	1250			VAC	
Insulation resistance	100			MΩ	500VDC, 25°C and <95RH

EMC: Emissions

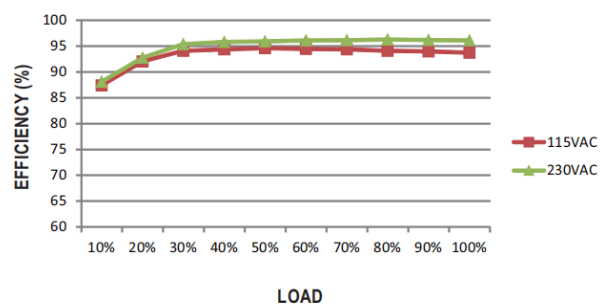
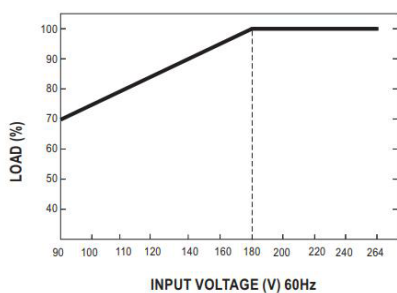
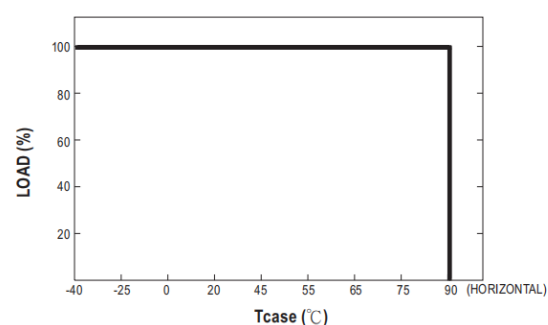
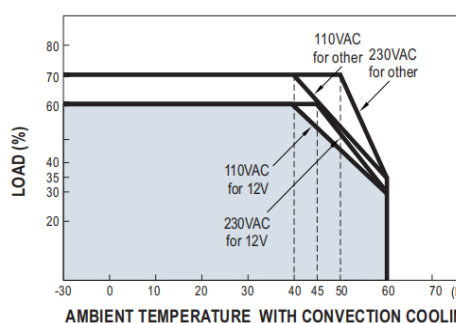
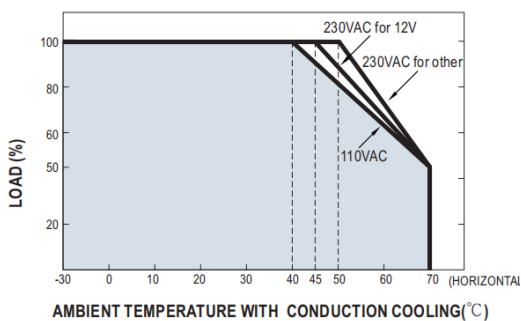
	Standard	Test level	Criteria	Notes/Conditions
Conducted	EN55032	B		
Radiated	EN55032	B		
Harmonic current	EN61000-3-2			Class A
Voltage flicker	EN61000-3-3			Compliant

EMC: Immunity - TBC

	Standard	Test level	Criteria	Notes/Conditions
ESD	EN61000-4-2	3	A	±6kV contact, ±8kV air
Radiated	EN61000-4-3	3	A	10V/m
EFT	EN61000-4-4	3	A	±4kV
Surges	EN61000-4-5		A	Line to line ±2kV, common ±4kV
Conducted	EN61000-4-6	3	A	10Vrms
Voltage dips & interruptions	EN61000-4-11	0% 70%	B	

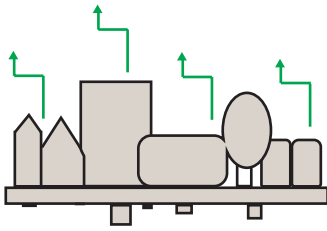
Environmental

Parameter	Min	Typical	Max	Unit	Notes/Conditions
Operating temperature	-30		70	°C	See derating curve.
Storage temperature	-40		85	°C	10-95% RH non-condensing
Cooling					Base plate and convection cooled
Humidity	20		90	% RH	
Operating altitude			5000	M	3.5°C/1000m derating above 2000m
MTBF	658			kHrs	MIL-HBDK-217F
Temperature coefficient			±0.03	%/°C	0-50°C



Installation Advice

EMC

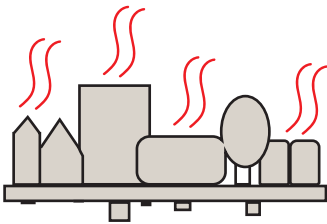


Conducted and radiated emissions compliance is a common application consideration. It is important to remember that even when using a properly filtered PSU, an application may still not achieve compliance if it is not designed to minimise emissions. That being said, there are a number of things that can be done to optimise EMC performance either as best practice, or if you are struggling for compliance:

- 1)** Connect all marked EMI ground points to earth. Often these are combined with the safety earth point (in class I installations), but on some power supplies there may be additional earth tags or mounting points.
- 2)** Minimise the length of input/output wiring where possible and try to maintain max distance of the conductors from the PSU, to prevent noise pick up. Avoid bundling input and output cables together. A common component to avoid placing wiring near is the PFC inductor in power factor corrected power supplies.
- 3)** Apply additional filtering before the PSU input (ensure consideration of which frequencies there are issues with before selecting a filter).
- 4)** When using an open frame PSU, mount the supply on a metal plate and connect EMI mounting points.
- 5)** In multi circuit systems, decouple the circuits locally.
- 6)** Ferrites added between the PSU and system input connector and/or the DC output cables can help in reducing radiated noise issues in systems. If seen, issues are commonly in the 30-150MHz area.

For more detailed assistance, if you still have any concerns with compliance, please get in contact with our Engineering department who are on hand to assist with any queries.

Thermal



Thermal management is an important consideration when thinking about equipment service life. Electrolytic capacitors within the PSU wear with time and are typically the first end-of-life failure. Keeping the operation temperature of key components within the PSU, such as the electrolytic capacitors, as low as possible is paramount. As a general rule, for every 10°C drop in the operating temperature of the electrolytic capacitors you double their lifetime, and thus the lifetime of the power supply. When looking at thermal performance it is helpful to test under a worst-case set of conditions, to ensure component temperatures are in an acceptable range for the required service life. Then consider the impact of operational time, load and temperature profile to estimate a more realistic lifetime for your PSU.

Also, many Fidus power supplies offer a Peak Power rating to provide for customers with pulsing loads. When using a peak power capability customers must consider:

- 1)** Peak duration rating: the maximum length of time the peak can be drawn for
- 2)** Duty cycle: the frequency with which the peak can be drawn. (e.g. 10% duty cycle, 1 second on:9 seconds off)
- 3)** Average power value: datasheets will state the maximum average power acceptable with peak power PSUs. If any of these elements are exceeded the supply may overheat, with performance and lifetime suffering as a result.