10W DC-DC Converter P10F-Series

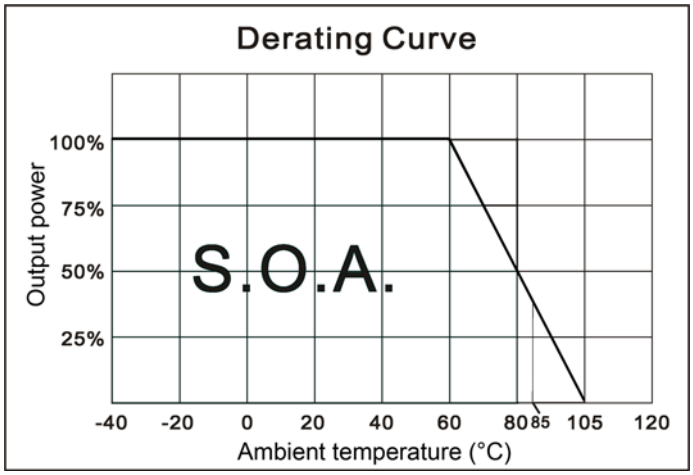
PHI-CON

- Wide 4:1 Input Range
- 1600 V_{DC} Isolation
- MTBF >1 MHours
- Continuous Short Circuit Protection
- Over Load Protection
- Over Voltage Protection
- Efficiency up to 88%
- 15 mA no load Input Current
- Wide Operation Temperature Range -40...85°C
- On / Off Remote Control Input
- Soft Start



Model selection guide

Typ	Input voltage range [V_{DC}]	Input current		Output voltage [V_{DC}]	Output current [mA]	Efficiency typ. [%]	Capacitor load max. [µF]
		no load [mA]	full load [mA]				
Single output							
P10F243R3S	9...36	15	440	3.3	2700	85	1200
P10F2405S	9...36	15	480	5.0	2000	87	1200
P10F2412S	9...36	15	475	12.0	833	88	270
P10F2415S	9...36	15	475	15.0	667	88	180
P10F483R3S	18...75	15	225	3.3	2700	84	1200
P10F4805S	18...75	15	240	5.0	2000	87	1200
P10F4812S	18...75	15	240	12.0	833	87	270
P10F4815S	18...75	15	240	15.0	667	87	180
Dual output							
P10F2405D	9...36	15	495	±5.0	±1000	85	2 x 820
P10F2412D	9...36	15	480	±12.0	±420	87	2 x 120
P10F2415D	9...36	15	480	±15.0	±330	87	2 x 100
P10F4805D	18...75	15	250	±5.0	±1000	85	2 x 820
P10F4812D	18...75	15	240	±12.0	±420	88	2 x 120
P10F4815D	18...75	15	240	±15.0	±330	88	2 x 100



HY-LINE® POWER COMPONENTS

Deutschland:
Inselkammerstraße 10
D-82008 Unterhaching
Tel.: 089 614 503-10
E-Mail: power@hy-line.de

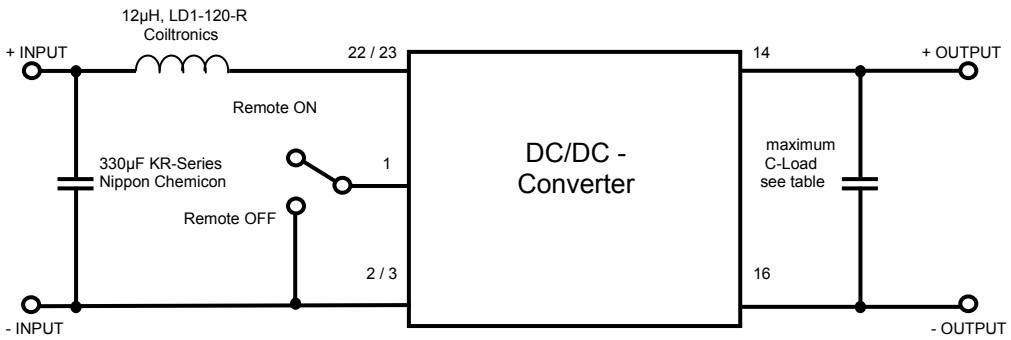
Schweiz:
Gründenstrasse 82
CH-8247 Flurlingen
Tel.: 052 647 42 00
E-Mail: power@hy-line.ch

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Specifications

Input	
Filter	Pi Network
Start up time with R-load	20 ms typ.
Remote CTRL on/off, Pin1	On: 3...12 V or open input Off: 0...1.2 V Standby current 5mA typ
Isolation:	
Rated voltage (for 60 s)	1600 V_{DC} (flash tested 3s)
Resistance	10^9 Ω
Capacitance	1500 pF, typ.
Output	
Voltage accuracy	± 1.2%, max.
Voltage balance (dual outputs)	± 1%
Temperature coefficient	± 0.02% / °C
Ripple and noise (at 20 MHz BW)	85 mVp-p, max.
Short circuit protection	Indefinite (hiccup), Automatic restart
Over load protection	170 % of I_{out} max.
Over voltage protection	
2.5 V, 3.3 V out type	3.9 V Z-diode clamping
(±) 5.0 V out type	6.2 V Z-diode clamping
(±) 12 V out type	(±)15 V Z-diode clamping
(±) 15 V out type	(±)18 V Z-diode clamping
Line voltage regulation	± 0.2 %, max.
Load regulation 0...100% load	single ± 0.5%, max. dual ± 1%, max.
Cross regulation @ dual output	± 5 %
Transient recovery time	250 µs typ.
Transient response drift @ 75%...50%...25% load	3 %

General	
Switching frequency	270 kHz
Safety Standard	IEC 60950-1:2001
Reliability calculated MTBF (MIL-HDBK-217F)	>1 Mhours @ 25°C
EMC Characteristics	
Radiated Emissions	EN55022 class A
Conducted Emissions	EN55022 class A
ESD	EN61000-4-2 Crit. B
RS	EN61000-4-3 Crit. A
EFT	EN61000-4-4 Crit. B
Surge	EN61000-4-5 Crit. B
CS	EN61000-4-6 Crit. A
PFMF	EN61000-4-8 Crit. A
Environmental	
Operating temperatur (ambient)	-40 °C to +85 °C See derating curve
Case temperature	105 °C max.
Storage temperature	-40 °C to +125 °C
Humidity	Up to 95 %, non-condensing
Cooling	Free-air convection
Physical	
Dimensions	31.75 x 20.32 x 10.16 mm
Weight	18 g
Case material	Nickel-coated copper metal
Potting material	Epoxy (UL94V-0 rated)
Absolute maximum ratings	
Pin soldering temperature 1.5mm distance from body	260°C for 10sec
Input peak voltage for 0.1s	-0.7 V_{DC} ...50 V_{DC} @ 24 V type -0.7 V_{DC} ...100 V_{DC} @ 48 V type



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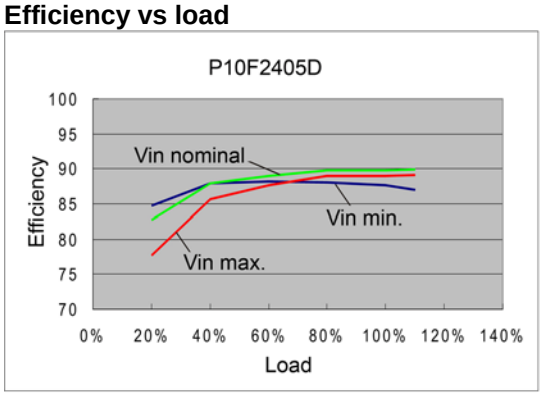
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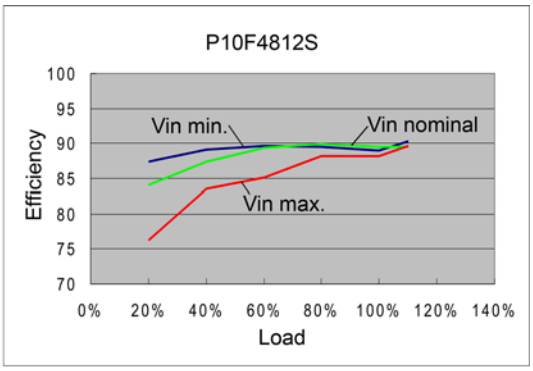
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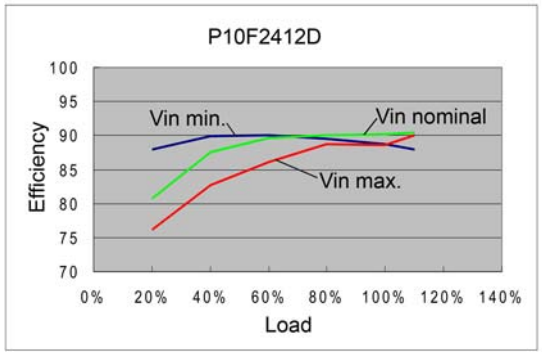
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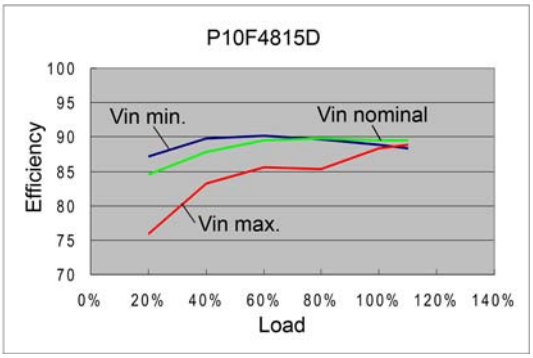
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Efficiency vs load

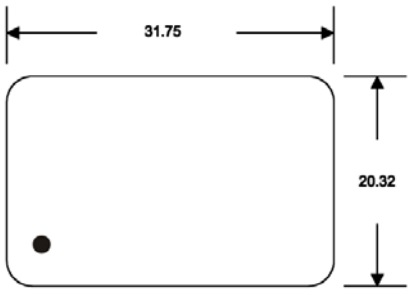


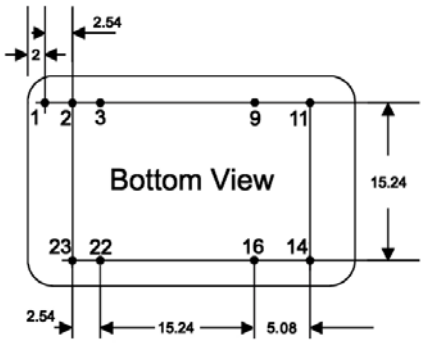


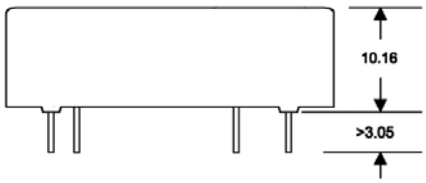




Dimensions







Notes: All dimensions are typical in millimeters
1. Pin diameter: 0.5 ±0.05
2. Pin pitch tolerance: ±0.35
3. Case Tolerance: ±0.5

Pin connections

Pin	Single	Dual
1	Remote contr.	Remote contr.
2	-V Input	-V Input
3	-V Input	-V Input
9	Omitted	Common
11	N.C.	-V Output
14	+V Output	+V Output
16	-V Output	Common
22	+V Input	+V Input
23	+V Input	+V Input

Life Support Policy: HY-LINE does not authorize the use of any of its products for use in life support devices or systems without the express written approval of an officer of the Company. Life support systems are devices which support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user. Rev: 2.10 f

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