

FEATURES AND APPLICATIONS

- 2:1 Input Range
- High Efficiency up to 87%
- U-Channel or DIN Rail Chassis
- Low Ripple & Noise
- Screw Terminals for Input & Output
- Over Load & Short Circuit Protection
- RoHS ✓



GENERAL DESCRIPTION

The UVTW40 and DVTW40 series is a family of 40 Watt single and dual output DC-DC converters. These converters were designed as DC/DC Plug-in solution and are available in U-Channel chassis (UVTW40), or DIN rail chassis (DVTW40; Reliable snap-on for DIN rail TS-35/7.5 or TS-35/15). These devices offering high performance features such as 1500 Vdc input/output isolation voltage, continuous short circuit protection with automatic restart and tight line and load regulation. Further features are internal input fuse protection, internal reverse polarity protection, internal input in-rush current limit circuit, over voltage protection and Output DC-OK LED indicator.

Models operate from a 2:1 input bus voltage of 24 and 48 Vdc offering output voltage levels of 3.3, 5, 12, 15, 24, 28, ± 12 and ± 15 Vdc. Cooling is by free-air convection.

4:1 Input – Single and Dual Outputs

Type Number	Input Voltage [Vdc]	Output Voltage [Vdc]	Output Current		Input Current No load [mA] 24/48	Output Ripple & Noise [mVpp]	Efficiency [%] 24/48	max. Cap. Load [μ F]
			Min. Load [mA]	Full Load [mA]				
xVTW40-yy3R3S	24 48	3.3	0	10000	83/63	50	86/86	25750
xVTW40-yy05S		5.0	0	8000	103/68	50	87/88	13600
xVTW40-yy12S		12.0	50	3333	56/34	75	86/86	2360
xVTW40-yy15S		15.0	50	2666	56/34	75	86/87	1510
xVTW40-yy24S		24.0	65	1667	76/41	100	85/85	600
xVTW40-yy28S		28.0	65	1333	82/41	100	85/85	375
xVTW40-yy12D		± 12.0	± 60	± 1667	65/34	100	85/85	± 1200
xVTW40-yy15D		± 15.0	± 50	± 1333	76/34	100	85/85	± 750

x ... Chassis:

U ... U-Channel Chassis
D ... DIN Rail Chassis

Options UVTW40-Series (U-Channel Chassis):

Suffix -DR UVTW40 with DIN rail clip for DIN35
Suffix N Remote On/Off - Negative Logic

yy ... nominal input voltage:

xVTW40-Series: 24 (9.5 – 36 Vdc)
48 (18 – 75 Vdc)

Options DVTW40-Series (DIN Rail Chassis):

Suffix N Remote On/Off - Negative Logic

e.g. UVTW40-1205S (U-Channel Chassis, Input 12 Vdc, Output 5 Vdc)
UVTW40-483R3S-DR (U-Channel Chassis, Input 48 Vdc, Output 3.3 Vdc, DIN rail clip option)
DVTW40-2412D (DIN rail Chassis, 24 Vdc input, ± 12 Vdc output)

ELECTRICAL SPECIFICATIONS

Specifications typical at +25°C, nominal Input voltage, rated output current unless otherwise specified.

Input Specifications

Input Voltage Range	24V: 9.5 to 36 Vdc
	48V: 18 to 75 Vdc
Input Fuse (slow blow)	24V: 8 A
	48V: 4 A
Input Surge Voltage	24V: 50 Vdc, 100 ms, max.
	48V: 100 Vdc, 100 ms, max.
In-Rush Current	15 A
Input Reflected Ripple Current	15 mApp
Start Up time (nom. input, const. res. load)	100 ms (Power up)
	20 ms (Remote On/Off)
Start-Up/Shutdown Voltage	Startup Shutdown
	24V: 9.5 Vdc 8.0 Vdc
	48V: 18.0 Vdc 16.0 Vdc

Output Specifications

Output Power	40 Watts, max.	
Output Voltage Accuracy	3.3V: ±1.5%	
	Others: ±1.0%	
Output Adjustability	28 Vout: -3% ~ +17%	
	Single Others: ±10%	
The output voltage could be adjusted by a potentiometer (single output only).		
Min. Load for specified regulation	see table	
Ripple and Noise (20 MHz BW)	see table	
Line Voltage Regulation	±0.5% (LL to HL at full load)	
Load Voltage Regulation	3.3V: ±2.0% (Min. load to full load)	
	Others: ±1.0%	
Cross Regulation	Dual: ±5.0%	
Temperature Coefficient	±0.02%/°C, max.	
Over Load Protection	150% (of FL at nominal input)	
Short Circuit Protection	Continuous (Hiccup)	
Over Voltage Protection	3.3 Vout: 3.9 Vdc 15 Vout: 18 Vdc	
	5 Vout: 6.2 Vdc 24 Vout: 30 Vdc	
	12 Vout: 15 Vdc 28 Vout: 36 Vdc	
Transient response recovery time	250 µsec (25% load step change)	
Output Indicator	Green LED	

EMC Characteristics

EMI	EN55022	Class B
ESD	EN61000-4-2	Perf. Criteria A (Air ±8 kV; Contact ±6 kV)
Radiated Im.	EN61000-4-3	Perf. Criteria A (10 V/m)
F. Transients.	EN61000-4-4	Perf. Criteria A (±2 kV)
Surge	EN61000-4-5	Perf. Criteria A (±1 kV)
Conducted I.	EN61000-4-6	Perf. Criteria A (10 Vrms)

Remote ON/OFF Control

Control Voltage referenced to negative (-) input	
Positive Logic (Standard)	ON-Control: 3 to 12 V or open
	OFF-Control: 0 to 1.2 V or short
Negative Logic (Suffix N)	ON-Control: 0 to 1.2 V or short
	OFF-Control: 3 to 12 V or open
Input current of remote control pin	-0.5 mA to +0.5 mA, max.
Remote off state input current	24V: 10 mA
	48V: 5 mA

Physical Characteristics

Dimensions	U-channel: 101.6 x 57.2 x 19.05 mm
	4.00 x 2.25 x 0.75 inches
	DIN rail: 125.0 x 57.6 x 24.5 mm
	4.92 x 2.27 x 0.97 inches
Chassis Material	Aluminium
Weight	U-channel: 122 g
	DIN rail mounting: 182 g

General Specifications

Efficiency	see table
Switching Frequency	300 kHz, ±10%
Isolation Voltage	1500 Vdc, min. (1 minute)
Isolation Resistance	10 ⁹ Ohms, min.
Isolation Capacitance	4500 pF, max.
Approvals	IEC/EN/UL60950-1 (designed to meet)

Environmental Specification

Operating Temperature	
Case mounting:	-40°C to +55°C without Derating
	+55°C to 85°C with Derating
DIN rail mounting:	-40°C to +63°C without Derating
	+63°C to 87°C with Derating
Storage Temperature	-40°C to +105°C
Over Temp. Protection	+110°C (DC/DC Converter Case)
Cooling	Free-air Convection
MTBF	MIL-HDBK-217F: 1.511 x 10 ⁵ Hrs *
	Bellcore TR-NWT-000332: 8.840 x 10 ⁵ Hrs **
	* Notice2 @25°C, FL, Ground, Benign, controlled environment
	** Case1, 50% Stress, 40°C
Thermal Shock	MIL-STD-810F
Vibration	MIL-STD-810F
Relative Humidity	5% to 95% RH

CAUTION: This power module is not internally fused. An input line fuse must always be used!

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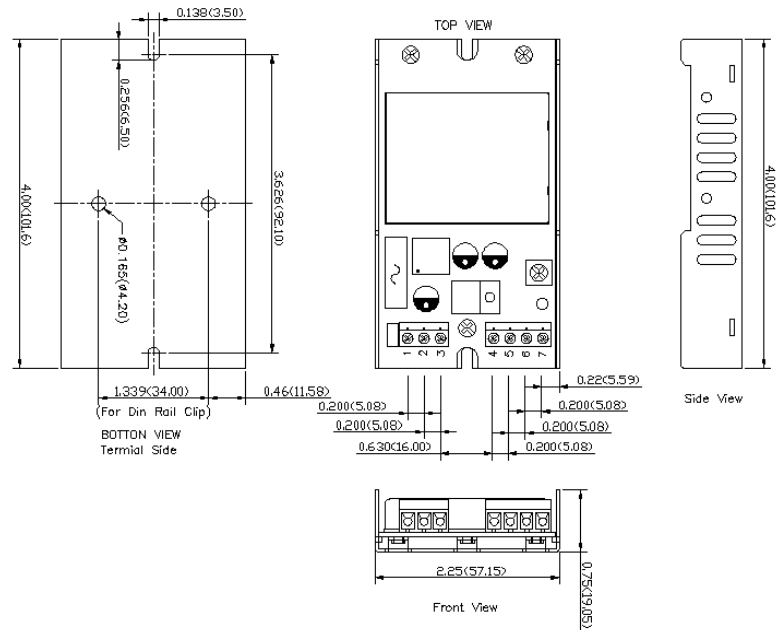
UVTW40 DVTW40 SERIES

40 Watt DC/DC Converter
Single and Dual Output
1500 Vdc Isolation

vitec
dc conversion

Drawings & PIN Connections

UVTW40 Series (U-Channel Version)

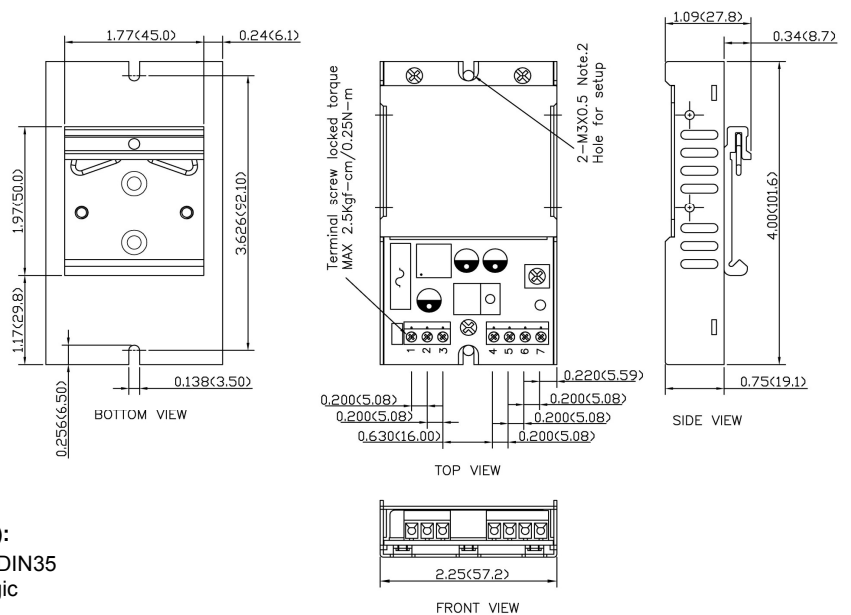
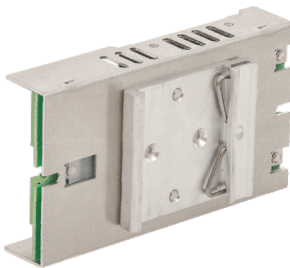


PIN Connections

Pin	Single	Dual
1	+V Input	+V Input
2	-V Input	-V Input
3	CTRL	CTRL
4	NC	NC
5	-V Output	-V Output
6	+V Output	Common
7	NC	+V Output

NC ... not connected

UVTW40 Series (U-Channel Version) with DIN Rail Mounting Clip Option



Options UVTW40-Series (U-Channel Chassis):

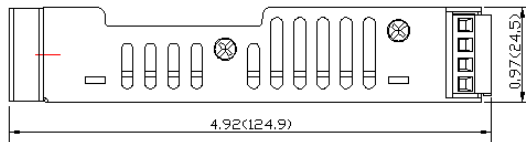
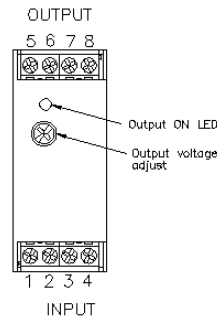
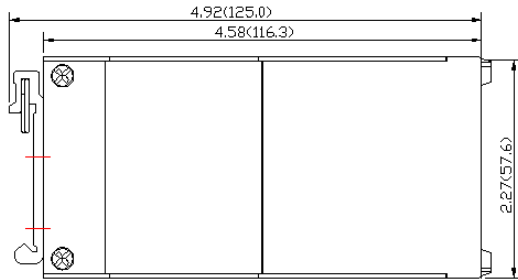
Suffix -DR UVTW40 with DIN rail clip for DIN35
Suffix N Remote On/Off - Negative Logic

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DVTW40 Series – DIN Rail Chassis (Case protection meets IP20 / IEC60529)

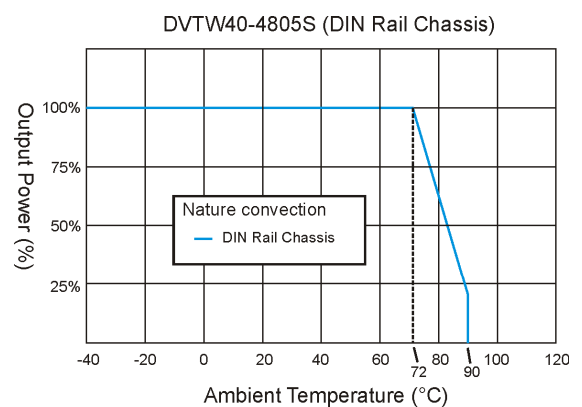
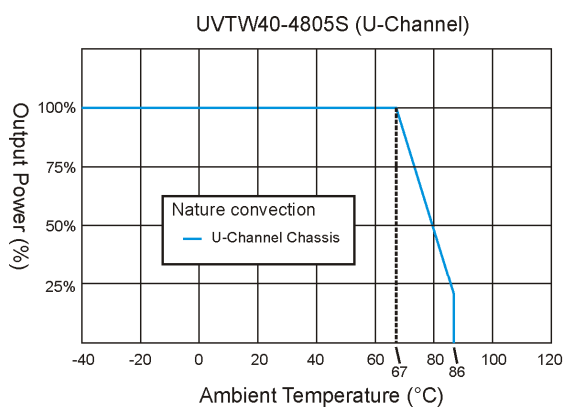


Options DVWT40-Series (DIN Rail Chassis):
Suffix N Remote On/Off - Negative Logic

PIN Connections		
Pin	Single	Dual
1	CTRL	CTRL
2	-V Input	-V Input
3	-V Input	-V Input
4	+V Input	+V Input
5	NC	NC
6	-V Output	-V Output
7	+V Output	Common
8	NC	+V Output

NC ... not connected

Derating



Notes: All dimensions in millimeters (inches). Tolerance $\pm 0.25\text{mm}$ (0.01).

Specifications can be changed without prior notice. Products are not intended for and must not be used in life support systems, human implantation, nuclear facilities or systems or any other application where product failure or malfunction of the component could lead to loss of life or catastrophic property damage.