



# 40 WATT

## Single And Dual Output

DIN Rail, Wide Input  
DC/DC Converters



### FEATURES

- DIN Rail DC/DC Converters
- 4:1 Input Range
- 40 Watts Output Power
- Single and Dual Output
- EN55022 Class B
- Internal input fuse protection
- Internal input reverse polarity protection
- Internal input in-rush current limit circuit
- Overload and short circuit protection
- Over voltage protection
- RoHS EU Directive 2002/95/EC
- Reliable snap-on for DIN Rail TS-35/7.5 OR TS-35/15
- I/O-isolation 1600 Vdc
- Case protection meets IP 20 (IEC60529)
- Output DC-OK indicator

DMWB40 Series

### SPECIFICATIONS

#### INPUT

Voltage Range.....	24Vdc nominal input...9.5-36Vdc
.....	48Vdc nominal input...18-75Vdc
Input Surge Voltage.....	24Vdc input...50Vdc 100ms. max
.....	48Vdc input...100Vdc 100ms. max
Input fuse (slow blow).....	24Vdc input...8A
.....	48Vdc input...4A
In-rush current.....	15A
Input reflected ripple current.....	15mA p-p
Start up time.....	Nominal input and .....Power Up.....100mS
.....	Constant Resistive Load.....Remote On/Off...20mS
Startup Voltage.....	24Vdc input...9.5Vdc
.....	48Vdc input...18Vdc
Shutdown Voltage.....	24Vdc input...8Vdc
.....	48Vdc input...16Vdc
Remote ON/OFF (Option) (Note 10)	
(Positive logic).....	Standard.....DC-DC ON.....Open or 3V <Vr <12V
.....	DC-DC OFF...Short or 0V <Vr < 1.2V
(Negative Logic).....	Option.....DC-DC ON.....Short or 0V <Vr < 1.2V
.....	DC-DC OFF.....Open or 3V <Vr <12V
Input current of Remote control pin.....	Nominal Input.....-0.5mA. - +0.5mA.
Remote off state input current.....	24Vdc input.....10 mA
.....	48Vdc input.....5 mA.

#### OUTPUT

Output power.....	40 Watts Max.
Voltage accuracy.....	3.3 V Out.....±1.5%
.....	Others.....±1%
Minimum Load (Note 6).....	See table
Voltage adjustability (Note 7)	
.....	Single 28V Out.....-3% to +17%
.....	Single Others.....±10%
Line Regulation.....	LL to HL at Full Load.....Single.....±0.5%
Load Regulation (Note 8).....	No load to Full Load.....3.3V Out.....±2.0%
.....	Others.....±1%
Load Cross Regulation (Note 9).....	Dual.....±5%
Ripple and Noise.....	20mHZ Bandwidth.....See Table
Temperature Coefficient.....	±0.02%/°C Max.
Transient Response recovery time.....	25% load step change.....250uS
.....	3.3Vdc Output.....3.9Vdc
.....	5Vdc Output.....6.2Vdc
Over voltage protection.....	12Vdc Output.....15Vdc
Zener diode clamp.....	15Vdc Output.....18Vdc
.....	24Vdc Output.....30Vdc
.....	28Vdc Output.....36Vdc

Output Indicator.....	Green LED
Over load protection.....	0% of FL at nominal input.....150%
Short circuit protection.....	Hiccup, automatic recovery

See next page for additional details.

## GENERAL

Efficiency.....	See Table
Isolation Voltage.....	Input to Output.....1600Vdc, min. 1 minute
.....	Input (Output) to Chassis.....1600Vdc, min. 1 minute
Isolation resistance.....	10 <sup>9</sup> ohms, min.
Isolation capacitance.....	4000pF, max.
Switching frequency.....	400KHz ± 10%
Design meets safety standard.....	IEC60950-1, UL60950-1, EN60950-1
Chassis material.....	Aluminum
Dimensions.....	4.92 x 2.27 x 0.97
.....	(125.0 x 57.6 x 24.5 mm)
Weight.....	170 g (5.19 oz.)
MTBF (Note 1).....	BELLCORE TR-NWT-000332.....1.289 x 10 <sup>6</sup> hrs.
.....	MIL-HDBK-217F.....9.197 x 10 <sup>5</sup> hrs.

## ADDITIONAL SPECIFICATIONS

## ENVIRONMENTAL

Operating ambient temperature.....	-40°C to +66° C (without derating)
.....	+66°C to +87° C (with derating)
Storage temperature range.....	-40 to +105° C
Thermal Shock.....	MIL STD 810F
Vibration.....	MIL STD 810F
Relative Humidity.....	5% to 95% RH

## EMC

EMI.....	EN55022.....	Class B
ESD.....	EN61000 -4-2.....	Air.....+/-8KV
.....	Perf. Criteria A.....	Contact.....+/-6KV

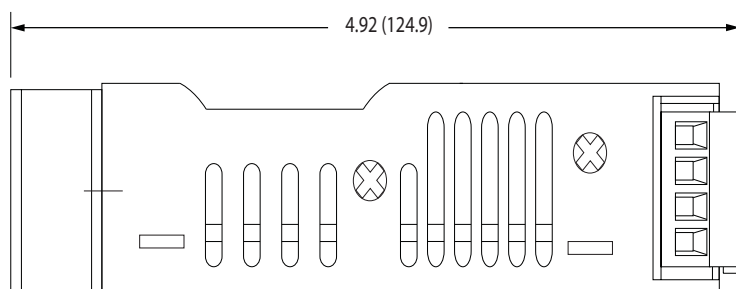
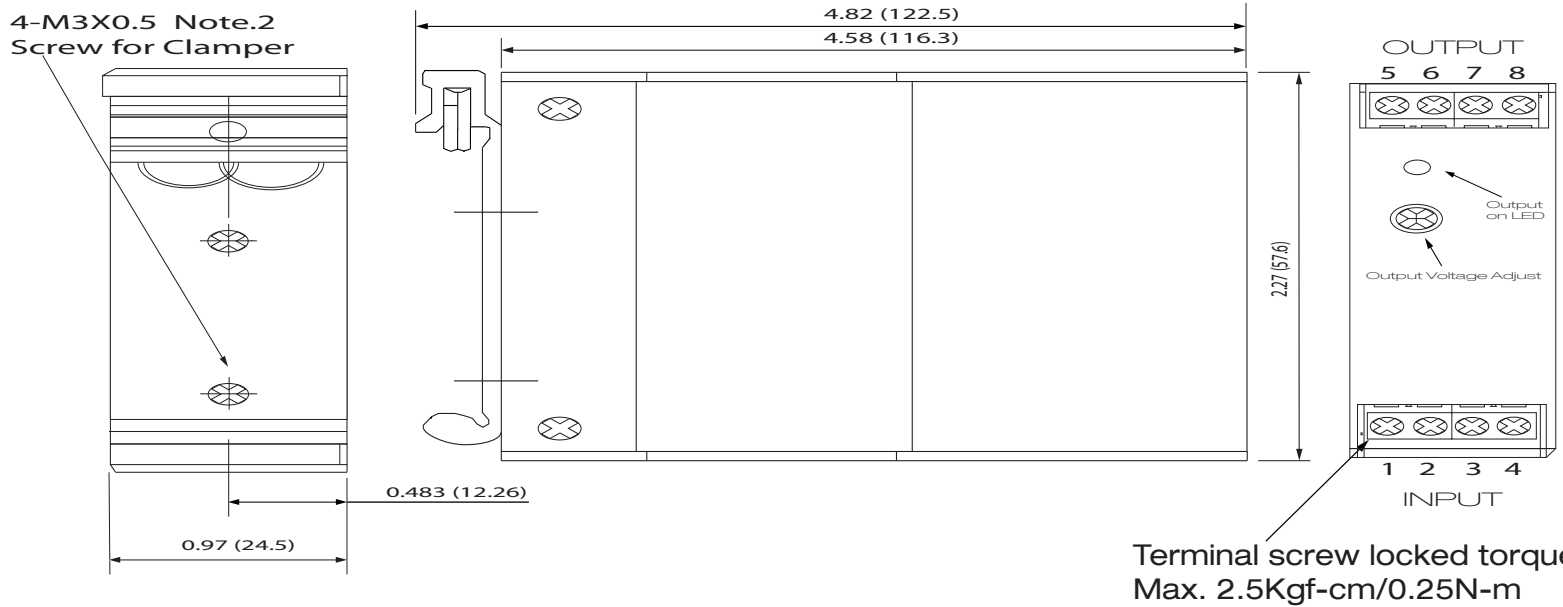
Radiated Immunity.....	EN61000-4-3.....	10 V/m.....	Perf. Criteria A
Fast transient.....	EN61000-4-4.....	+/-2KV.....	Perf. Criteria A
Surge.....	EN61000-4-5.....	+/-0.5KV.....	Perf. Criteria A
Conducted immunity.....	EN61000-4-6.....	10Vr.m.s.....	Perf. Criteria A

## SELECTION GUIDE

Input Voltage Range	Output Voltage	Output Current		Output <sup>(4)</sup> Ripple & Noise	Input Current		Efficiency <sup>(4)</sup> (%)	Model Number	Case	Capacitor Load max. <sup>(5)</sup>
		Min. load	Full load		No load <sup>(3)</sup>	Full load <sup>(2)</sup>				
9.5 - 36 Vdc	3.3 Vdc	0mA	1000mA	50mVp-p	83mA	1741mA	83	DMWB40-24S33	DR	25750µF
9.5 - 36 Vdc	5 Vdc	0mA	8000mA	50mVp-p	103mA	2083mA	84	DMWB40-24S5	DR	13600µF
9.5 - 36 Vdc	5.1 Vdc	0mA	333mA	75mVp-p	56mA	2083mA	84	DMWB40-24S12	DR	2360µF
9.5 - 36 Vdc	12 Vdc	0mA	2666mA	75mVp-p	56mA	2083mA	84	DMWB40-24S15	DR	1510µF
9.5 - 36 Vdc	15 Vdc	0mA	1667mA	100mVp-p	76mA	2083mA	84	DMWB40-24S24	DR	600µF
18 - 75 Vdc	3.3 Vdc	0mA	1333mA	100mVp-p	82mA	1944mA	84	DMWB40-24S28	DR	375µF
18 - 75 Vdc	5 Vdc	0mA	1000mA	100mVp-p	63mA	859mA	84	DMWB40-48S33	DR	25750µF
18 - 75 Vdc	5.1 Vdc	0mA	8000mA	50mVp-p	68mA	1029mA	84	DMWB40-48S5	DR	13600µF
18 - 75 Vdc	12 Vdc	0mA	3333mA	75mVp-p	34mA	1029mA	84	DMWB40-48S12	DR	2360µF
18 - 75 Vdc	15 Vdc	0mA	2666mA	75mVp-p	34mA	1029mA	86	DMWB40-48S15	DR	1510µF
9.5 - 36 Vdc	28 Vdc	0mA	1667mA	75mVp-p	41mA	1042mA	85	DMWB40-48S24	DR	600µF
9.5 - 36 Vdc	± 12 Vdc	0mA	± 1333mA	100mVp-p	41mA	972mA	85	DMWB40-48S28	DR	375µF
9.5 - 36 Vdc	± 15 Vdc	0mA	± 1667mA	100mVp-p	65mA	2083mA	84	DMWB40-24-12	DR	± 1200µF
18 - 75 Vdc	± 5 Vdc	0mA	± 1333mA	100mVp-p	76mA	2083mA	84	DMWB40-24-15	DR	± 750µF
18 - 75 Vdc	± 12 Vdc	0mA	± 1667mA	100mVp-p	34mA	1042mA	84	DMWB40-48-12	DR	± 1200µF
18 - 75 Vdc	± 15 Vdc	0mA	± 1333mA	100mVp-p	34mA	1042mA	84	DMWB40-48-15	DR	± 750µF

## Note:

- BELLCORE TR-NWT-000332. Case 1: 50% Stress, Temperature at 40°C.  
MIL-HDBK-217F Notice2 @Ta=25 °C, Full load(Ground, Benign, controlled environment).
- Maximum value at nominal input and full load.
- Typical value at nominal input and no load.
- Typical value at nominal input and full load.
- Test by minimum input and constant resistive load.
- The output requires minimum loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however, they may not meet all listed specification.
- Single output installs a potentiometer to adjust the output voltage.
- Load regulation for dual output: Min load to 100% load balanced on all outputs.
- Cross regulation for dual output: asymmetrical load 25% / 100% FL
- The ON/OFF voltage is referenced to -INPUT  
To order negative logic ON/OFF control add the suffix -N.



1. All dimensions in inches (mm)  
Tolerance: X.XX ±0.02 (X.X±0.5)  
X.XXX±0.01 (X.XX±0.25)
2. The screw locked torque: Max 0.49N.M (5.0Kgf.cm)

PRODUCT OPTIONS TABLE	
OPTION	SUFFIX
Positive logic Remote ON/OFF	-P
Negative logic Remote ON/OFF	-N

PIN CONNECTION		
PIN	SINGLE	DUAL
1	CTRL	CTRL
2	-INPUT	-INPUT
3	-INPUT	-INPUT
4	+INPUT	+INPUT
5	NC	NC
6	-OUTPUT	-OUTPUT
7	+OUTPUT	COMMON
8	NC	+OUTPUT