



## DPX20W Series

Single and Dual Output 20W Din Rail Mount  
DC-DC Converters

- Single and dual output
- Meet EN55022 Class B
- Input fuse protection
- Input reverse polarity protection
- Input in-rush current protection
- Overload and short circuit protection
- Over voltage protection
- Reliable snap-on for DIN rail TS-35/7.5 or TS-35/15
- I/O-isolation 1600 VDC
- Output DC-OK indicator

### Key Market Segments & Applications

Communication Systems, Industry Control Systems  
Factory Automation, Semiconductor Equipment

### DPX20W Features and Benefits

#### Features

- CE Approval
- Wide Range Input

#### Benefits

- Easier System Approvals
- Less Parts to Inventory

#### Specifications

| ITEMS                                                   | DPX20W                                                                           |                            |
|---------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------|
|                                                         | 24V nominal input 9.5-36VDC                                                      | 48V nominal input 18-75VDC |
| Rated Input voltage range                               | 400kHz, typ                                                                      |                            |
| Switching Frequency                                     | See Table                                                                        |                            |
| Maximum Input Current                                   | 24V input, 6A Fuse                                                               | 48V input, 4A fuse         |
| Input Fuse                                              | See Table                                                                        |                            |
| Max Output Power (W)                                    | Single/Dual $\pm 1.0\%$ / Single (3.3V) $\pm 1.5\%$                              |                            |
| Voltage Accuracy                                        | Single output $\pm 10\%$                                                         |                            |
| Voltage Adjustment (Note 7)                             | Single $\pm 0.2\%$ / Dual $\pm 0.5\%$                                            |                            |
| Line Regulation (LL to HL at full load Single)          | 20MHz bandwidth See table                                                        |                            |
| Ripple and Noise                                        | Power up 100mS, typ (remote On/Off 20mS, typ)                                    |                            |
| Start up time (Nominal Vin and constant resistive load) | POSITIVE Logic: ON: Open or 3-12V, OFF Short or <1.2V                            |                            |
| Remote on/off (option) (Note 2)                         | NEGATIVE Logic: ON: Short or <1.2V, OFF Open or 3-12V                            |                            |
| Efficiency                                              | See Table                                                                        |                            |
| Over Current Protection, Factory Set                    | Maximum, 150% of full load                                                       |                            |
| Short Circuit Protection (Note 3)                       | Hiccup, auto recovery                                                            |                            |
| Overvoltage Protection                                  | 3.3V output                                                                      | 3.9V                       |
|                                                         | 5V output                                                                        | 6.2V                       |
|                                                         | 12V output                                                                       | 15V                        |
|                                                         | 15 output                                                                        | 18V                        |
| Operating Temperature                                   | -40°C ~ 78°C (without derating) 78°C ~ 91°C (with derating - see curve)          |                            |
| Storage Temperature                                     | -40°C ~ 105°C                                                                    |                            |
| Thermal Shock                                           | MIL-STD-810F                                                                     |                            |
| Relative Humidity (non condensing)                      | 5% to 95% RH                                                                     |                            |
| Transient Response (25% step load change)               | 250µS                                                                            |                            |
| Isolation Voltage (Min)                                 | 1600Vdc                                                                          |                            |
| Isolation Resistance                                    | 10 <sup>9</sup> Ω                                                                |                            |
| Isolation Capacitance (Max)                             | 4000 pF                                                                          |                            |
| MTBF BELLCORE TR-NWT-000332 (Note 1)                    | 139,300 hrs                                                                      |                            |
| Vibration                                               | MIL-STD-810F                                                                     |                            |
| Conducted and Radiated Emissions                        | EN55022, Class B                                                                 |                            |
| Immunity                                                | EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6 Perf. Criteria A |                            |
| Safety                                                  | CE                                                                               |                            |
| Size (H x W x D)                                        | 57.6 x 24.5 x 125.0 mm                                                           |                            |
| Weight                                                  | 147.5g                                                                           |                            |
| Connector                                               | Screw Terminal                                                                   |                            |
| Cooling                                                 | Convection                                                                       |                            |
| Front Panel LED                                         | Output DC good                                                                   |                            |
| Warranty yrs                                            | 3                                                                                |                            |

Notes: See page 2

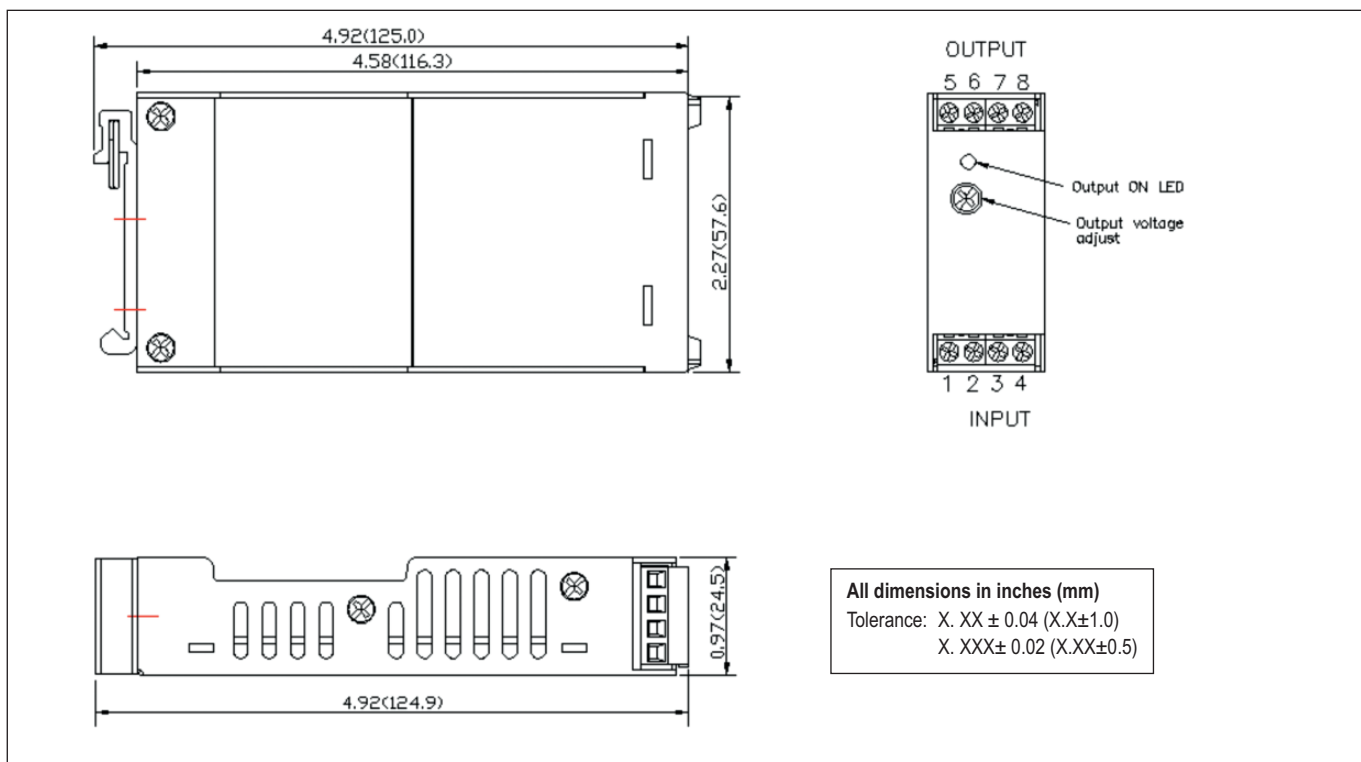
## Notes

1. BELLCORE TR-NWT-000332. Case I: 50% Stress, Temperature at 40°C. MIL-HDBK-217F Notice2 @Ta=25°C, Full load(Ground, Benign, controlled environment).
2. The ON/OFF control pin voltage is referenced to -Vin. To order Negative logic ON/OFF control add the suffix -N (Ex:DPX20-48WS05-N), for Positive logic add suffix -P (Ex:DPX20-48NS05-P)
3. Typical value at nominal input voltage and full load.
4. Typical value at nominal input voltage and no load.
5. Maximum value at nominal input voltage and full load.
6. Test by minimum Vin and constant resistive load.
7. Single outputs have a potentiometer to adjust the output voltage.

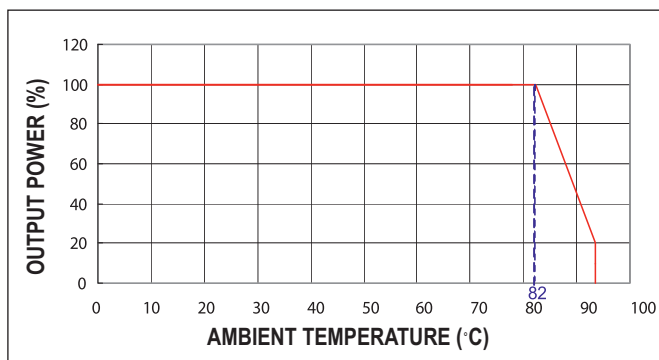
## Model Selector

| Model         | Input Range  | Output Voltage | Output Current<br>Min Load | Output Current<br>Full Load | Output (3)<br>Ripple & Noise | Input Current<br>No Load (4) | Input Current<br>Full Load 5 | Eff %<br>(3) | Capacitor<br>Load Max (6) |
|---------------|--------------|----------------|----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|--------------|---------------------------|
| DPX20-24WS3P3 | 9.5 - 36 VDC | 3.3 VDC        | 0mA                        | 5500mA                      | 60mVp-p                      | 52mA                         | 957mA                        | 83           | 18000μF                   |
| DPX20-24WS05  | 9.5 - 36 VDC | 5 VDC          | 0mA                        | 4000mA                      | 75mVp-p                      | 67mA                         | 1016mA                       | 86           | 9600μF                    |
| DPX20-24WS12  | 9.5 - 36 VDC | 12 VDC         | 0mA                        | 1670mA                      | 75mVp-p                      | 26mA                         | 1043mA                       | 84           | 1650μF                    |
| DPX20-24WS15  | 9.5 - 36 VDC | 15 VDC         | 0mA                        | 1330mA                      | 75mVp-p                      | 27mA                         | 1039mA                       | 84           | 1050μF                    |
| DPX20-24WD05  | 9.5 - 36 VDC | ± 5 VDC        | 0mA                        | ±2000mA                     | 100mVp-p                     | 59mA                         | 1016mA                       | 86           | ±2000μF                   |
| DPX20-24WD12  | 9.5 - 36 VDC | ±12 VDC        | 0mA                        | ±833mA                      | 100mVp-p                     | 34mA                         | 1028mA                       | 85           | ±825μF                    |
| DPX20-24WD15  | 9.5 - 36 VDC | ±15 VDC        | 0mA                        | ±667mA                      | 100mVp-p                     | 35mA                         | 1029mA                       | 85           | ±525μF                    |
| DPX20-48WS3P3 | 18 - 75 VDC  | 3.3 VDC        | 0mA                        | 5500mA                      | 60mVp-p                      | 37mA                         | 473mA                        | 83           | 18000μF                   |
| DPX20-48WS05  | 18 - 75 VDC  | 5 VDC          | 0mA                        | 4000mA                      | 75mVp-p                      | 37mA                         | 508mA                        | 86           | 9600μF                    |
| DPX20-48WS12  | 18 - 75 VDC  | 12 VDC         | 0mA                        | 1670mA                      | 75mVp-p                      | 18mA                         | 515mA                        | 85           | 1650μF                    |
| DPX20-48WS15  | 18 - 75 VDC  | 15 VDC         | 0mA                        | 1330mA                      | 75mVp-p                      | 18mA                         | 513mA                        | 85           | 1050μF                    |
| DPX20-48WD05  | 18 - 75 VDC  | ± 5 VDC        | 0mA                        | ±2000mA                     | 100mVp-p                     | 37mA                         | 502mA                        | 87           | ±4800μF                   |
| DPX20-48WD12  | 18 - 75 VDC  | ± 12 VDC       | 0mA                        | ±833mA                      | 100mVp-p                     | 20mA                         | 508mA                        | 86           | ±825μF                    |
| DPX20-48WD15  | 18 - 75 VDC  | ± 15 VDC       | 0mA                        | ±667mA                      | 100mVp-p                     | 20mA                         | 508mA                        | 86           | ±525μF                    |

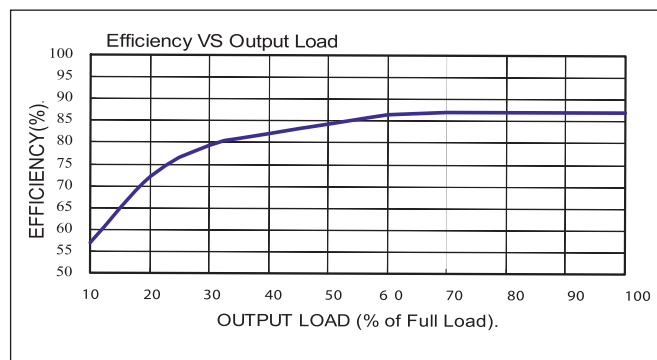
## Outline Drawing DPX20W Series



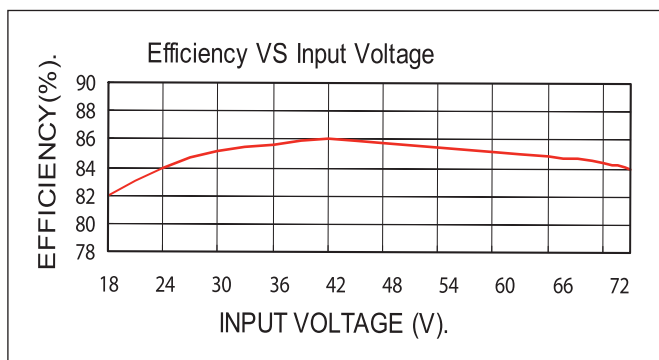
## Derating Curve DPX20-48WS05



## Efficiency / Load Curve DPX20-48WS05



## Efficiency / Input Voltage Curve DPX20-48WS05



### Pinout

| 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 |

NC: No connection

Screw terminals - wire range from 14 to 18 AWG

### Options

| Option                       | Suffix |
|------------------------------|--------|
| Negative Logic Remote ON/OFF | - N    |
| Positive Logic Remote ON/OFF | - P    |



**TDK-Lambda France SAS**

3 Avenue du Canada  
Parc Technopolis  
Bâtiment Sigma  
91940 les Ulis  
France  
Tel: +33 1 60 12 71 65  
Fax: +33 1 60 12 71 66  
france@fr.tdk-lambda.com  
www.fr.tdk-lambda.com



**Italy Sales Office**

Via Giacomo Matteotti 62  
20092 Cinisello Balsamo (MI)  
Italy  
Tel: +39 02 61 29 38 63  
Fax: +39 02 61 29 09 00  
info.italia@it.tdk-lambda.com  
www.it.tdk-lambda.com



**Netherlands**

info@nl.tdk-lambda.com  
www.nl.tdk-lambda.com



**TDK-Lambda Germany GmbH**

Karl-Bold-Strasse 40  
77855 Achern  
Germany  
Tel: +49 7841 666 0  
Fax: +49 7841 5000  
info.germany@de.tdk-lambda.com  
www.de.tdk-lambda.com



**Austria Sales Office**

Aredstrasse 22  
2544 Leobersdorf  
Austria  
Tel: +43 2256 655 84  
Fax: +43 2256 645 12  
info@at.tdk-lambda.com  
www.de.tdk-lambda.com



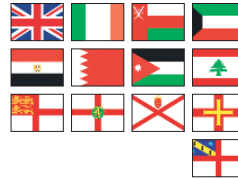
**Switzerland Sales Office**

Eichtalstrasse 55  
8634 Hombrechtikon  
Switzerland  
Tel: +41 44 850 53 53  
Fax: +41 44 850 53 50  
info@ch.tdk-lambda.com  
www.de.tdk-lambda.com



**Nordic Sales Office**

Haderslevvej 36B  
DK-6000 Kolding  
Denmark  
Tel: +45 8853 8086  
info@dk.tdk-lambda.com



**TDK-Lambda UK Ltd.**

Kingsley Avenue  
Ilfracombe  
Devon EX34 8ES  
United Kingdom  
Tel: +44 (0) 12 71 85 66 66  
Fax: +44 (0) 12 71 86 48 94  
powersolutions@uk.tdk-lambda.com  
www.uk.tdk-lambda.com



**TDK-Lambda Ltd.**

1 Alexander Yanai  
Segula  
Petah-Tikva  
Israel  
Tel: +9 723 902 4333  
Fax: +9 723 902 4777  
info@tdk-lambda.co.il  
www.tdk-lambda.co.il



**C.I.S.**

**Commercial Support:**

Tel: +7 (495) 665 2627

**Technical Support:**

Tel: +7 (812) 658 0463  
info@tdk-lambda.ru  
www.tdk-lambda.ru

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