



## 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

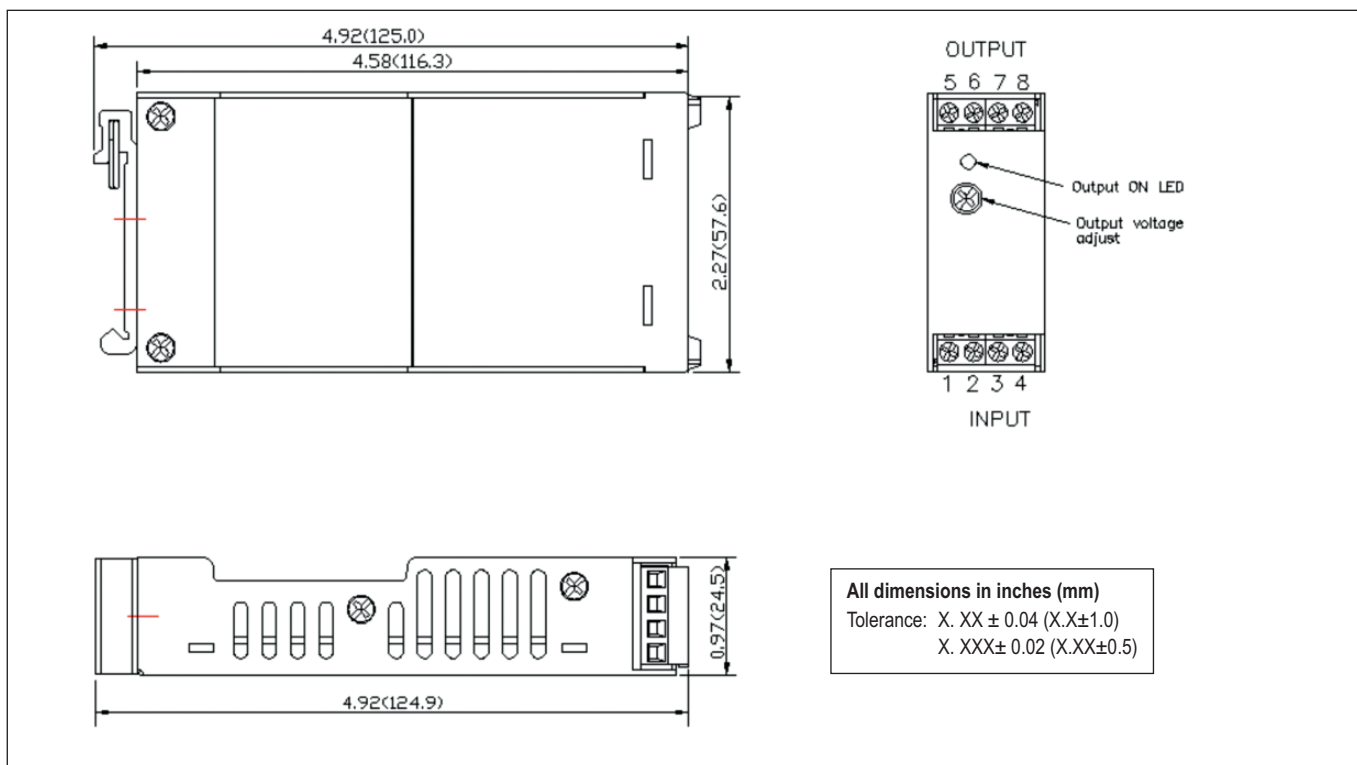
# Notes

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).
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.

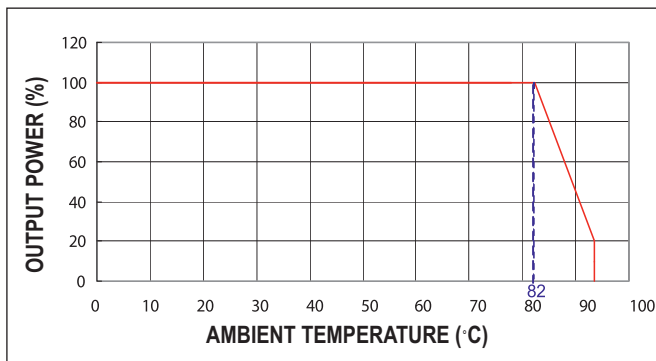
## Model Selector

| Model         | Input Range  | Output Voltage | Output Current Min Load | Output Current Full Load | Output (3) Ripple & Noise | Input Current No Load (4) | Input Current Full Load 5 | Eff % (3) | Capacitor 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                 |

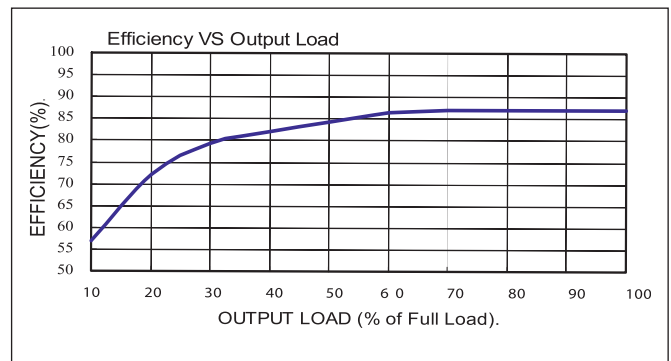
## Outline Drawing DPX20W Series



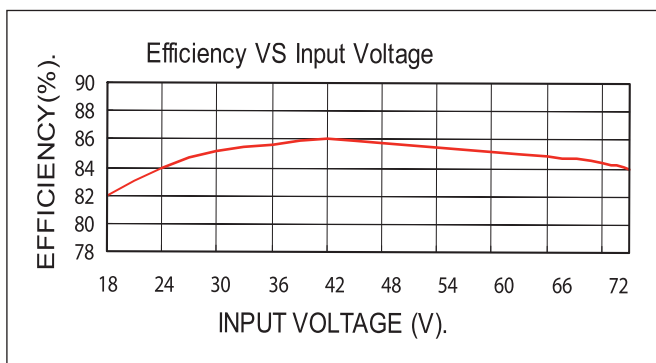
## Derating Curve DPX20-48WS05



## 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 (Com) | - Output |
| 7   | + Output NC    | Common   |
| 8   |                | + Output |

NC: No connection

Screw terminals - wire range from 14 to 18 AWG

### Options

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



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