

## ZWQ Series

80W to 170W

Quad Output Power Supplies

- Universal Input (85 - 265VAC)
- Power Factor Corrected
- Floating Adjustable Fourth Output
- Low Profile <1U High

### Key Market Segments & Applications

Factory Automation  
Test & Measurement  
Light Industrial Equipment

### ZWQ Features and Benefits

#### Features

- Low Profile
- Adjustable Main and Fourth Output
- Power Factor Corrected
- Floating Fourth Output

#### Benefits

- Fits in 1U Enclosures
- System Optimization
- Supports Global Use
- Can be used as Positive or Negative Output

### Specifications

| Items                         | Models |    | ZWQ80<br>-5222                                                                     | ZWQ80<br>-5223 | ZWQ80<br>-5224 | ZWQ80<br>-5225 | ZWQ130<br>-5222                | ZWQ130<br>-5223 | ZWQ130<br>-5224 | ZWQ130<br>-5225 |
|-------------------------------|--------|----|------------------------------------------------------------------------------------|----------------|----------------|----------------|--------------------------------|-----------------|-----------------|-----------------|
| Input Voltage                 |        | -  | 85-265VAC (47-63Hz), 120-370VDC                                                    |                |                |                |                                |                 |                 |                 |
| Input Current                 | (1)    | A  | 1.6 / 0.8                                                                          |                |                |                | 2.6 / 1.3                      |                 |                 |                 |
| Inrush Current                | (1)    | A  | 14/28                                                                              |                |                |                |                                |                 |                 |                 |
| Power Factor                  |        | -  | Meets EN61000-3-2                                                                  |                |                |                |                                |                 |                 |                 |
| Temperature Coefficient       |        | -  | <0.02%/°C                                                                          |                |                |                |                                |                 |                 |                 |
| Max Output Power (convection) |        | W  | 80                                                                                 |                |                |                | 130                            |                 |                 |                 |
| Max Output Power (forced air) |        | W  | 104                                                                                | 88.7           | 104            | 104            | 170                            | 149.6           | 170             | 170             |
| Overpower Protection          | (2)    | W  | >109                                                                               | >93            | >109           | >109           | >173                           | >152            | >173            | >173            |
| Minimum Load                  |        | A  | V1: 0.9A Conv, 1.4A Forced Air                                                     |                |                |                | V1: 1.5A Conv, 2.1A Forced Air |                 |                 |                 |
| Output Voltage Accuracy       |        | %  | ±5% for outputs V2 and V3                                                          |                |                |                |                                |                 |                 |                 |
| Efficiency (Typ)              |        | %  | 72                                                                                 |                |                |                |                                |                 |                 |                 |
| Hold Up Time                  | (1)    | ms | 20                                                                                 |                |                |                |                                |                 |                 |                 |
| Leakage Current               |        | -  | 0.75mA max, 0.2mA (Typ) at 100VAC / 0.44mA(Typ) at 230VAC                          |                |                |                |                                |                 |                 |                 |
| Remote On / Off               |        | -  | See installation manual (Not available with /A cover option)                       |                |                |                |                                |                 |                 |                 |
| Oper Temp (convection cooled) |        | -  | -10°C to 60°C, derate linearly to 50% load from 40°C to 60°C. (3)                  |                |                |                |                                |                 |                 |                 |
| Oper Temp (forced air cooled) |        | -  | -10°C to 70°C, derate linearly to 50% load from 50°C to 70°C. (>30cfm airflow) (3) |                |                |                |                                |                 |                 |                 |
| Storage Temperature           |        | -  | -30°C to +85°C                                                                     |                |                |                |                                |                 |                 |                 |
| Humidity (non condensing)     |        | -  | Operating: 30 - 90% RH; Non-operating 10-95% RH                                    |                |                |                |                                |                 |                 |                 |
| Withstand Voltage             |        |    | I/P~Gnd 2kVAC (20mA), I/P~O/P 3kVAC (20mA), O/P~Gnd 500VAC (100mA) for 1 min.      |                |                |                |                                |                 |                 |                 |
| Isolation Resistance          |        | -  | >100MΩ at 25°C & 70%RH, Output to Ground 500VDC                                    |                |                |                |                                |                 |                 |                 |
| Vibration (non operating)     |        | -  | 10 - 55Hz (1 minute sweep), 19.6m/s² constant X, Y, Z 1 hour                       |                |                |                |                                |                 |                 |                 |
| Shock                         |        | -  | < 196.1 m/s²                                                                       |                |                |                |                                |                 |                 |                 |
| Safety Agency Approvals       |        | -  | IEC/UL/CSA/EN62368-1, 60950-1, CE Mark                                             |                |                |                |                                |                 |                 |                 |
| Conducted & Radiated EMI      |        | -  | EN55011, EN55022-B, FCC Class B, VCCI-B                                            |                |                |                |                                |                 |                 |                 |
| Immunity                      |        | -  | EN61000-4-2,-3,-4,-5,-6,-8,-11                                                     |                |                |                |                                |                 |                 |                 |
| Weight (Typ)                  |        | g  | 550                                                                                |                |                |                | 730                            |                 |                 |                 |
| Size (W x H x D)              |        | mm | 93.5 x 35 x 210                                                                    |                |                |                | 106 x 35 x 225                 |                 |                 |                 |
| Warranty                      |        | yr | 1                                                                                  |                |                |                |                                |                 |                 |                 |

#### Notes:

(1) 100/200VAC

(2) Avoid prolonged operation in overload

(3) /A version - additional derating - See installation manual

## Model Selector

| MODEL       | Output | Voltage (V) | Voltage Adjust Range (V) | Convect. (A) | Peak or Forced Air (A)(4) | Max Load Reg (mV) | Max Line Reg (mV) | Ripple Noise (mV) | OVP (V)(5) |
|-------------|--------|-------------|--------------------------|--------------|---------------------------|-------------------|-------------------|-------------------|------------|
| ZWQ80-5222  | V1     | 5           | 5.0-5.25                 | 8.0          | 10.0                      | 100               | 20                | 120               | 5.7-7.0    |
|             | V2     | +12/15*     | +12/+15                  | 2.0          | 2.5                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V3     | -12/15*     | -12/-15                  | 2.0          | 2.5                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V4     | 12          | 11.4-12.6                | 3.0          | 4.0                       | 300               | 48                | 150               | 13.8-16.2  |
| ZWQ80-5223  | V1     | 5           | 5.0-5.25                 | 8.0          | 10.0                      | 100               | 20                | 120               | 5.7-7.0    |
|             | V2     | +12/15*     | +12/+15                  | 2.0          | 2.5                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V3     | -12/15*     | -12/-15                  | 2.0          | 2.5                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V4     | 3.3         | 2.0-3.63                 | 7.0          | 9.0                       | 100               | 20                | 120               | 3.79-4.95  |
| ZWQ80-5224  | V1     | 5           | 5.0-5.25                 | 8.0          | 10.0                      | 100               | 20                | 120               | 5.7-7.0    |
|             | V2     | +12/15*     | +12/+15                  | 2.0          | 2.5                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V3     | -12/15*     | -12/-15                  | 2.0          | 2.5                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V4     | 24          | 22.8-25.2                | 1.5          | 2.0                       | 400               | 96                | 200               | 27.6-32.4  |
| ZWQ80-5225  | V1     | 5           | 5.0-5.25                 | 8.0          | 10.0                      | 100               | 20                | 120               | 5.7-7.0    |
|             | V2     | +12/15*     | +12/+15                  | 2.0          | 2.5                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V3     | -12/15*     | -12/-15                  | 2.0          | 2.5                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V4     | 5           | 2.0-5.25                 | 7.0          | 9.0                       | 100               | 20                | 120               | 5.7-7.0    |
| ZWQ130-5222 | V1     | 5           | 5.0-5.25                 | 15.0         | 19.0                      | 100               | 20                | 120               | 5.7-7.0    |
|             | V2     | +12/15*     | +12/+15                  | 4.0          | 5.0                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V3     | -12/15*     | -12/-15                  | 4.0          | 5.0                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V4     | 12          | 11.4-12.6                | 4.0          | 5.0                       | 300               | 48                | 150               | 11.4-12.6  |
| ZWQ130-5223 | V1     | 5           | 5.0-5.25                 | 15.0         | 19.0                      | 100               | 20                | 120               | 5.7-7.0    |
|             | V2     | +12/15*     | +12/+15                  | 4.0          | 5.0                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V3     | -12/15*     | -12/-15                  | 4.0          | 5.0                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V4     | 3.3         | 2.0-3.63                 | 10.0         | 12.0                      | 100               | 20                | 120               | 3.79-4.95  |
| ZWQ130-5224 | V1     | 5           | 5.0-5.25                 | 15.0         | 19.0                      | 100               | 20                | 120               | 5.7-7.0    |
|             | V2     | +12/15*     | +12/+15                  | 4.0          | 5.0                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V3     | -12/15*     | -12/-15                  | 4.0          | 5.0                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V4     | 24          | 22.8-25.2                | 2.0          | 2.5                       | 400               | 96                | 200               | 27.6-32.4  |
| ZWQ130-5225 | V1     | 5           | 5.0-5.25                 | 15.0         | 19.0                      | 100               | 20                | 120               | 5.7-7.0    |
|             | V2     | +12/15*     | +12/+15                  | 4.0          | 5.0                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V3     | -12/15*     | -12/-15                  | 4.0          | 5.0                       | 300               | 48                | 150               | 16.5-22.5  |
|             | V4     | 5           | 2.0-5.25                 | 10.0         | 12.0                      | 100               | 20                | 120               | 5.7-7.0    |

\* User selectable via connector on PCB. Outputs are floating from V1 & V4

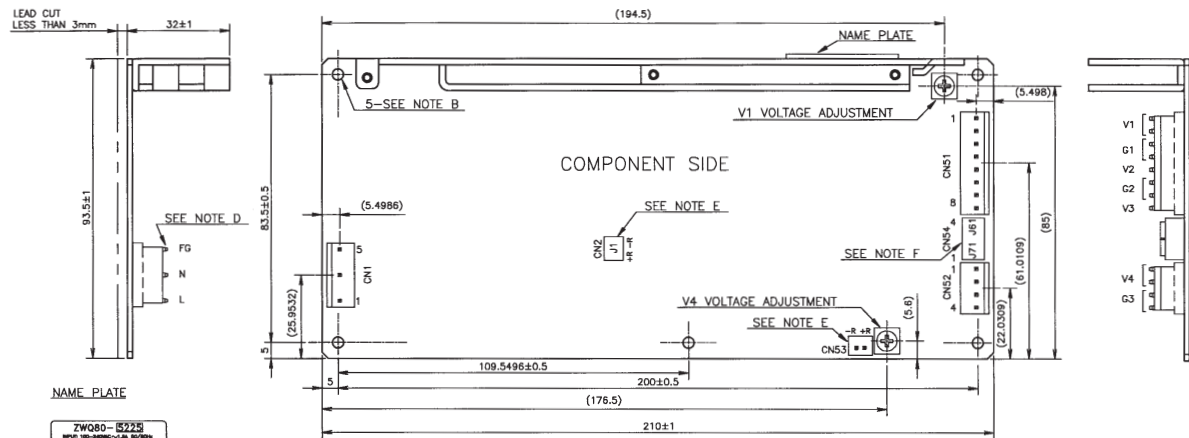
## Notes:

- (4) Peak current draw must not exceed 10s duration, duty cycle 35%.  
 (5) OVP on any output will shut down all outputs. Recycle AC input to reset.

## Options

| Suffix | Description           |
|--------|-----------------------|
| blank  | No cover or L Bracket |
| /L     | L Bracket             |
| /A     | Cover and L Bracket   |

## Outline Drawing ZWQ80 Series



= NOTES =

- A: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT AND COUNTRY OF MANUFACTURE ARE SHOWN HERE IN ACCORDANCE WITH THE SPECIFICATIONS.
- B: 5- $\phi$ 3.5 HOLES FOR CUSTOMER'S CHASSIS MOUNTING HOLES. ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION SPEC.
- C: KEEP THE DISTANCE MORE THAN 4mm BETWEEN PCB EDGE AND CUSTOMER'S CHASSIS.
- D: FG IS FOR SAFETY GROUND CONNECTION.
- E: REMOTE ON/OFF CONTROL CONNECTOR (CN2,53) : B2B-XH-AM (J.S.T.)  
MATCHING TERMINAL : XHP-2 (J.S.T.)  
MATCHING TERMINAL : XHP-20 (J.S.T.) OR SXH-001T-P0.6 (J.S.T.)  
CN1 : NORMALLY SHORTED BY JM-W-296(J.S.T.)
- F: CONNECTOR TO CHANGE V2,V3 OUTPUT VOLTAGE (CN54) : B4B-XH-AM (J.S.T.)  
J61 SHORT : V2 OUTPUT VOLTAGE IS +12V.(\*)  
J61 OPEN : V2 OUTPUT VOLTAGE IS +15V.  
J71 SHORT : V3 OUTPUT VOLTAGE IS -12V.(\*)  
J71 OPEN : V3 OUTPUT VOLTAGE IS -15V.
- \*J61 AND J71 ARE NORMALLY SHORTED BY JM-W-296(J.S.T.)

CONNECTORS USED:

| PART DESCRIPTION              | PART NAME | MANUFACT. | QTY |
|-------------------------------|-----------|-----------|-----|
| PIN HEADER (INPUT SIDE CN1)   | B3P-5-VH  | J.S.T.    | 1   |
| PIN HEADER (OUTPUT SIDE CN51) | B8P-VH    | J.S.T.    | 1   |
| PIN HEADER (OUTPUT SIDE CN52) | B4P-VH    | J.S.T.    | 1   |

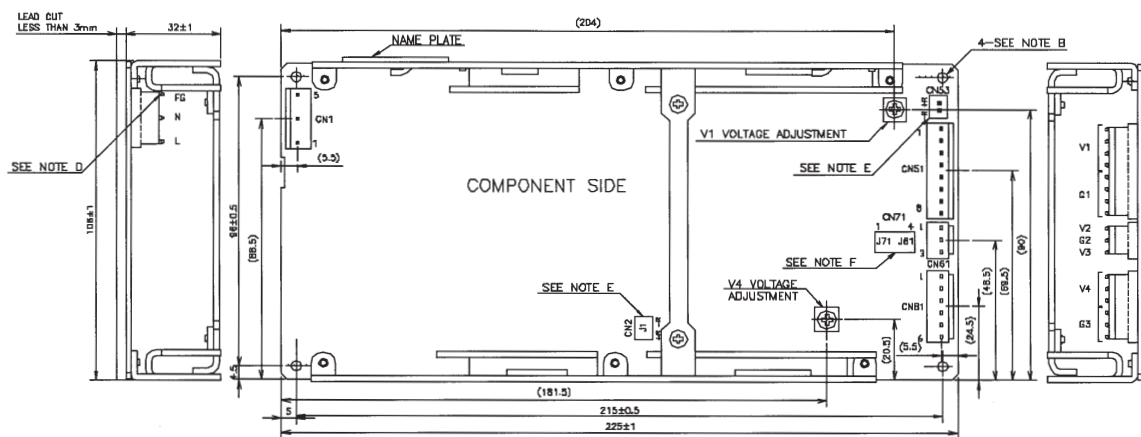
\*OUTPUT CURRENT OF EACH CONNECTOR PIN MUST BE LESS THAN 5A

MATCHING HOUSINGS & PINS (NOT INCLUDED WITH THE PRODUCT):

| PART DESCRIPTION          | PART NAME    | MANUFACT. | QTY |
|---------------------------|--------------|-----------|-----|
| SOCKET HOUSING (CN1)      | VHR-5N       | J.S.T.    | 1   |
| SOCKET HOUSING (CN51)     | VHR-8N       | J.S.T.    | 1   |
| SOCKET HOUSING (CN52)     | VHR-4N       | J.S.T.    | 1   |
| TERMINAL PINS (CN1,51,52) | SVH-21T-P1.1 | J.S.T.    | 15  |

HAND CRIMPING TOOL ; YC-160R      MANUFACT. : J.S.T.

## Outline Drawing ZWQ130 Series



= NOTES =

- A: MODEL NAME, INPUT VOLTAGE RANGE, NOMINAL  
OUTPUT VOLTAGE, MAXIMUM OUTPUT CURRENT AND  
COUNTRY OF MANUFACTURE ARE SHOWN HERE IN  
ACCORDANCE WITH THE SPECIFICATIONS.
- B: 4-#3.5 HOLES FOR CUSTOMER'S CHASSIS MOUNTING HOLES.  
ALL MUST BE SCREWED IN ORDER TO CONFORM THE VIBRATION SPEC.
- C: KEEP THE DISTANCE MORE THAN 4mm BETWEEN POWER SUPPLY EDGE  
AND CUSTOMER'S CHASSIS.
- D: FG IS FOR SAFETY GROUND CONNECTION.
- E: REMOTE ON/OFF CONTROL CONNECTOR (CN2,53) : B2B-XH-AM (J.S.T.)  
MATCHING HOUSING : XHP-2 (J.S.T.)  
MATCHING TERMINAL : BXH-001T-P0.6 (J.S.T.) OR SXH-001T-P0.6 (J.S.T.)  
\*CN2 IS NORMALLY SHORTED BY JM-2W-96(J.S.T.).
- F: CONNECTOR TO CHANGE V2/V3 OUTPUT VOLTAGE (CN71) : B4B-XH-AM (J.S.T.)  
J61 SHORT : V2 OUTPUT VOLTAGE IS +12V(\*)  
J61 OPEN : V2 OUTPUT VOLTAGE IS +15V  
J71 OPEN : V3 OUTPUT VOLTAGE IS -12V(\*)  
J71 OPEN : V3 OUTPUT VOLTAGE IS -15V.  
\*J61 AND J71 ARE NORMALLY SHORTED BY JM-2W-96(J.S.T.).

CONNECTORS USED:

| PART DESCRIPTION             | PART NAME | MANUFACT. | QTY |
|------------------------------|-----------|-----------|-----|
| PIN HEADER (INPUT SIDE CN1)  | B3P-5-VH  | J.S.T.    | 1   |
| PIN HEADER (OUTPUT SIDE CN5) | B8P-VH    | J.S.T.    | 1   |
| PIN HEADER (OUTPUT SIDE CN8) | B3P-VH    | J.S.T.    | 1   |
| PIN HEADER (OUTPUT SIDE CN8) | B8P-VH    | J.S.T.    | 1   |

\*OUTPUT CURRENT OF EACH CONNECTOR PIN MUST BE LESS THAN 5A

| MATCHING HOUSINGS & PINS (NOT INCLUDED WITH THE PRODUCT): |              |           |     |
|-----------------------------------------------------------|--------------|-----------|-----|
| PART DESCRIPTION                                          | PART NAME    | MANUFACT. | QTY |
| SOCKET HOUSING (CN1)                                      | VHR-SN       | J.S.T.    | 1   |
| SOCKET HOUSING (CN51)                                     | VHR-BN       | J.S.T.    | 1   |
| SOCKET HOUSING (CN61)                                     | VHR-JN       | J.S.T.    | 1   |
| SOCKET HOUSING (CN81)                                     | VHR-8N       | J.S.T.    | 1   |
| TERMINAL PINS (CN1,51,61,81)                              | SWH-21T-P1,1 | J.S.T.    | 20  |

|                               |              |                 |
|-------------------------------|--------------|-----------------|
| LEARNING AIDS (LAI) (1,2,3,4) | SVF-211-F1.1 | 4               |
| *HAND CRIMPING TOOL: YO-160R  |              | MANUFACT: J.S.T |



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