

### Features

- ◆ Compact AC/DC power supply modules
- ◆ Fully encapsulated plastic package
- ◆ Universal input 85–264 VAC, 50/60 Hz
- ◆ High efficiency
- ◆ Low ripple and noise
- ◆ Overload protection
- ◆ EMI meets EN 55022, class B and FCC, level B
- ◆ 3 package styles available:
  - for PCB Mount with solder pins
  - for chassis mount with FASTON-tabs
  - for chassis mount with screw terminals
- ◆ 3-year product warranty



The TMS series switching power supplies offers high power density in a low profile package. This makes these modules the best choice for all space critical applications. A further feature is the easy installation provided by flexible connection systems (solderpins, terminalblock, FASTON tabs).

EMC specifications and compliance with international safety standards qualify the product for worldwide use. SMD construction and industrial quality grade components guarantee a high reliability of these power modules.

### Models

| Order Code                                                                 |                                                                                  |                                                                                  | Output Power | Output 1                                                                                                 | Output 2                          |
|----------------------------------------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------|-----------------------------------|
| PCB-mounting<br>with solder pins                                           | Chassis mounting<br>with FASTON tabs                                             | Chassis mounting<br>with screw terminals                                         |              |                                                                                                          |                                   |
| TMS 06105<br>TMS 06112<br>TMS 06115<br>TMS 06124<br>TMS 06212<br>TMS 06215 |                                                                                  |                                                                                  | 6 Watt       | 5 VDC/1200 mA<br>12 VDC/500 mA<br>15 VDC/400 mA<br>24 VDC/250 mA<br>+12 VDC/250 mA<br>+15 VDC/200 mA     | –12 VDC/250 mA<br>–15 VDC/200 mA  |
| TMS 10105<br>TMS 10112<br>TMS 10115<br>TMS 10124<br>TMS 10212<br>TMS 10215 | TMS 10105F<br>TMS 10112F<br>TMS 10115F<br>TMS 10124F<br>TMS 10212F<br>TMS 10215F |                                                                                  | 10 Watt      | 5 VDC/2000 mA<br>12 VDC/900 mA<br>15 VDC/700 mA<br>24 VDC/450 mA<br>+12 VDC/450 mA<br>+15 VDC/350 mA     | –12 VDC/450 mA<br>–15 VDC/350 mA  |
| TMS 15105<br>TMS 15112<br>TMS 15115<br>TMS 15124<br>TMS 15212<br>TMS 15215 | TMS 15105F<br>TMS 15112F<br>TMS 15115F<br>TMS 15124F<br>TMS 15212F<br>TMS 15215F | TMS 15105C<br>TMS 15112C<br>TMS 15115C<br>TMS 15124C<br>TMS 15212C<br>TMS 15215C | 15 Watt      | 5 VDC/3000 mA<br>12 VDC/1300 mA<br>15 VDC/1000 mA<br>24 VDC/650 mA<br>+12 VDC/ 650 mA<br>+15 VDC/ 500 mA | –12 VDC/650 mA<br>–15 VDC/500 mA  |
| TMS 25105<br>TMS 25112<br>TMS 25115<br>TMS 25124<br>TMS 25212<br>TMS 25215 | TMS 25105F<br>TMS 25112F<br>TMS 25115F<br>TMS 25124F<br>TMS 25212F<br>TMS 25215F | TMS 25105C<br>TMS 25112C<br>TMS 25115C<br>TMS 25124C<br>TMS 25212C<br>TMS 25215C | 25 Watt*     | 5 VDC/4600 mA<br>12 VDC/2000 mA<br>15 VDC/1600 mA<br>24 VDC/1000 mA<br>+12 VDC/1000 mA<br>+15 VDC/800 mA | –12 VDC/1000 mA<br>–15 VDC/800 mA |

\* 10 % power reduction at 115 VAC operation

### Input Specifications

|                          |                                     |
|--------------------------|-------------------------------------|
| Input voltage range      | 85 – 264 VAC (110–375 VDC)          |
| Input frequency          | 47 – 63 Hz                          |
| External fuse (required) | 1 A slow blow type (recommendation) |

### Output Specifications

|                                         |                                                                                                               |
|-----------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Voltage set accuracy                    | ±2 %                                                                                                          |
| Regulation                              | <ul style="list-style-type: none"> <li>– Input variation</li> <li>– Load variation (10–90%)</li> </ul>        |
|                                         | 0.4 % max.<br>single output models: 1 % max.<br>dual output models: 2 % typ./5 % max. (symmetric load)        |
| Ripple and noise (20Mhz bandwidth)      | 100 mV pp typ.                                                                                                |
| Overload protection by current limit at | >130 % Inom. foldback, automatic recovery<br>(long term short circuit operation may cause damage to the unit) |

### General Specifications

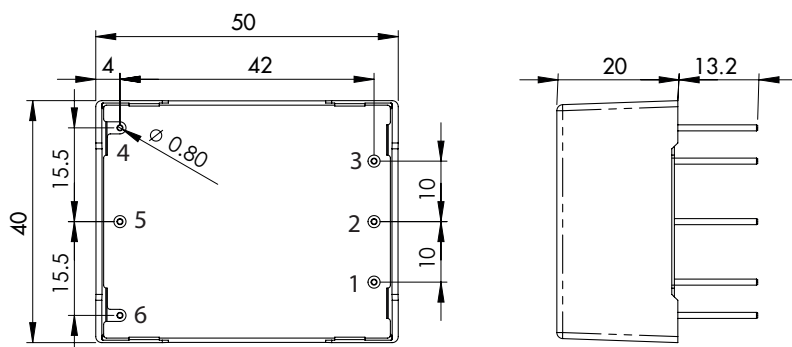
|                                                                       |                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature ranges                                                    | <ul style="list-style-type: none"> <li>– Operating</li> <li>– Case temperature</li> <li>– Storage (non operating)</li> </ul>                                                                  | –25°C to +60°C ambient temp. max.<br>+90°C max.<br>–25°C to +105°C                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Derating                                                              | 5 Vout models:<br>all other models:                                                                                                                                                           | 2.5 %/°K above +40°C<br>5 %/°K above +50°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Temperature coefficient                                               |                                                                                                                                                                                               | 0.02 %/°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Efficiency                                                            |                                                                                                                                                                                               | 78 % typ.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Humidity (non condensing)                                             |                                                                                                                                                                                               | 85 % rel max.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Switching frequency                                                   |                                                                                                                                                                                               | 100 kHz typ.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Hold-up time                                                          | <ul style="list-style-type: none"> <li>– Vin = 115 VAC</li> <li>– Vin = 230 VAC</li> </ul>                                                                                                    | 20 ms typ.<br>100 ms typ.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| I/O isolation voltage                                                 |                                                                                                                                                                                               | 3'000 VAC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Leakage current                                                       |                                                                                                                                                                                               | 0.3 mA RMS typ./230 VAC/50 Hz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| EMI/RFI conducted                                                     |                                                                                                                                                                                               | EN 55022, level B, FCC Part 15 level B                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| EMC compliance                                                        | <ul style="list-style-type: none"> <li>– Electrostatic discharge ESD</li> <li>– RF field susceptibility</li> <li>– Electrical fast transients/bursts on mainsline</li> <li>– Surge</li> </ul> | IEC/EN 61000-4-2 level 3 6 kV/8 kV<br>IEC/EN 61000-4-3 10 V/m<br>IEC/EN 61000-4-4 level 3 2 kV<br>IEC/EN 61000-4-5 level 3 1 kV/2 kV                                                                                                                                                                                                                                                                                                                                                                                 |
| Safety standards                                                      |                                                                                                                                                                                               | UL 60950-1, IEC/EN 60950-1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| Safety approvals                                                      | <ul style="list-style-type: none"> <li>– UL/cUL 60950-1</li> <li>– CB report (IEC 60950-1, 2nd edition)</li> </ul>                                                                            | <a href="http://www.ul.com">www.ul.com</a> -> certifications -> File e141988<br><a href="http://www.tracopower.com/products/tms06-cb.pdf">www.tracopower.com/products/tms06-cb.pdf</a><br><a href="http://www.tracopower.com/products/tms10-cb.pdf">www.tracopower.com/products/tms10-cb.pdf</a><br><a href="http://www.tracopower.com/products/tms15-cb.pdf">www.tracopower.com/products/tms15-cb.pdf</a><br><a href="http://www.tracopower.com/products/tms25-cb.pdf">www.tracopower.com/products/tms25-cb.pdf</a> |
| Environmental compliance                                              | <ul style="list-style-type: none"> <li>– Reach</li> <li>– RoHS</li> </ul>                                                                                                                     | <a href="http://www.tracopower.com/products/tms-reach.pdf">www.tracopower.com/products/tms-reach.pdf</a><br>RoHS directive 2011/65/EU                                                                                                                                                                                                                                                                                                                                                                                |
| Casing material                                                       |                                                                                                                                                                                               | CELANEX (UL 94V-0 rated)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Reliability, calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign) |                                                                                                                                                                                               | >250'000 h                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

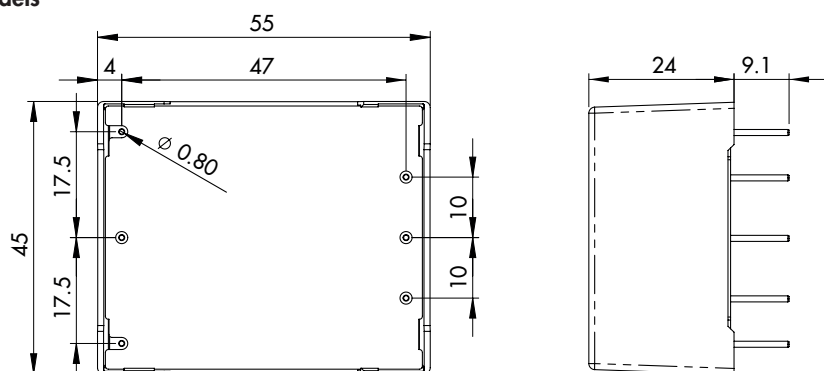
## Outline Dimensions

PCB-mounting with solder pins

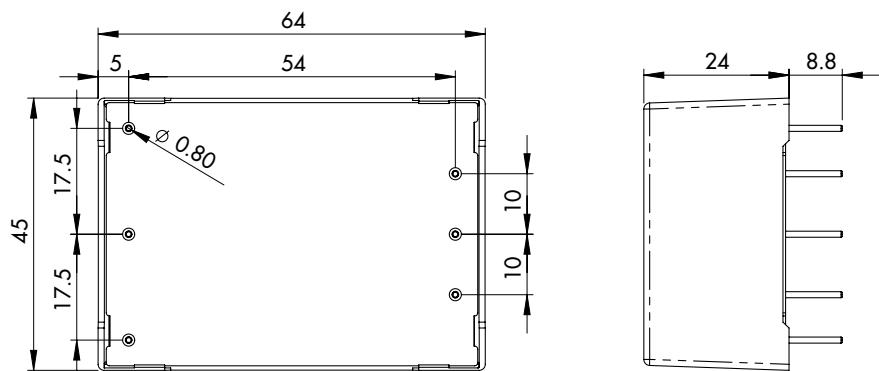
**TMS 6 Models**



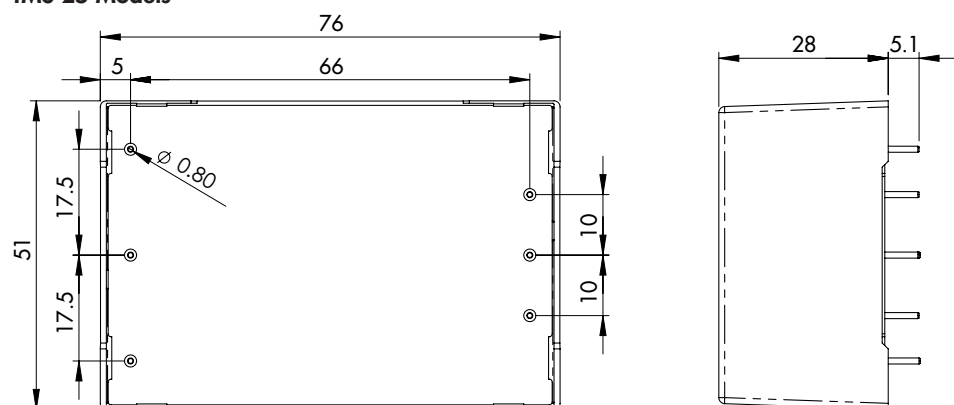
**TMS 10 Models**



**TMS 15 Models**



**TMS 25 Models**



### Weight

**TMS 6:** 45 g (1.6 oz)

**TMS 10:** 75 g (2.7 oz)

**TMS 15:** 95 g (3.4 oz)

**TMS 25:** 135 g (4.8 oz)

### Pin Out

| Pin | Single | Dual   |
|-----|--------|--------|
| 1   | -V out | -V out |
| 2   | No pin | Common |
| 3   | +V out | +V out |
| 4   | AC in  | AC in  |
| 5   | AC in  | AC in  |
| 6   | FG     | FG     |

FG = field ground

Dimensions in [mm]

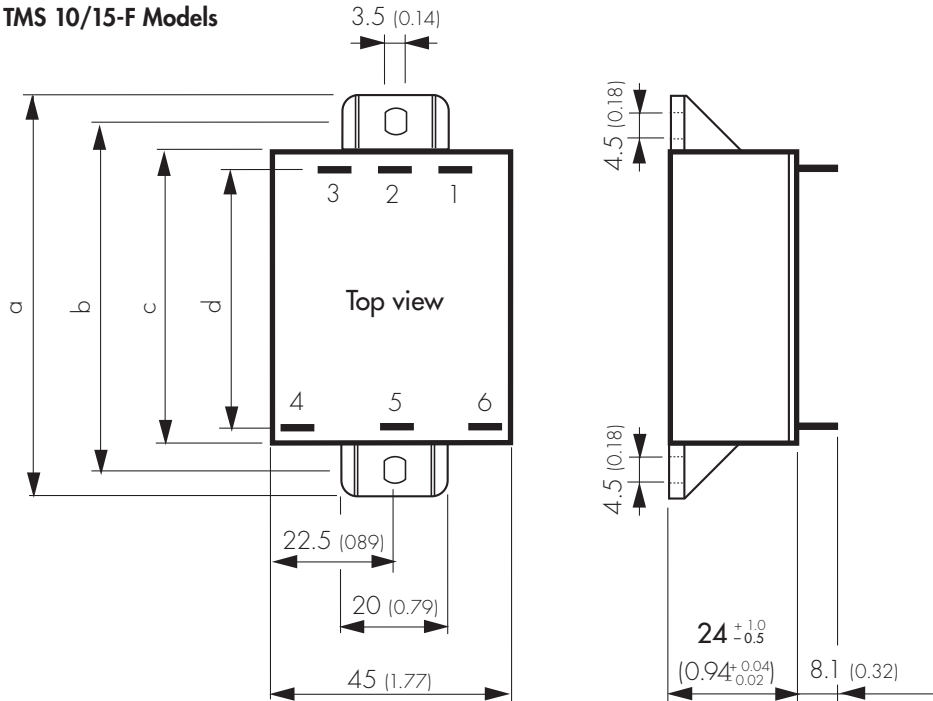
Tolerances = 0.5mm

Pin pitch tolerance = 0.2 mm

## Outline Dimensions

Chassis mounting with FASTON- abs

### TMS 10/15-F Models



Faston no 187 / 4.75 x 0.51mm (0.187 x 0.02)

### Pin Out

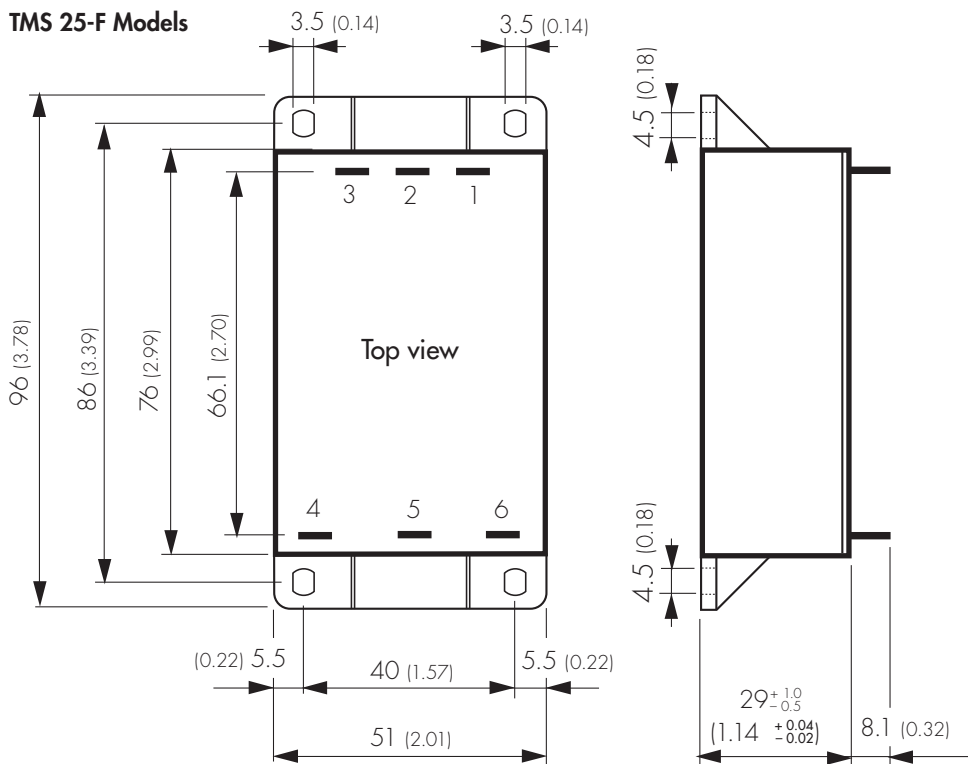
|   | TMS 10      | TMS 15      |
|---|-------------|-------------|
| a | 75 (2.95)   | 84 (3.31)   |
| b | 65 (2.56)   | 74 (2.91)   |
| c | 55 (2.17)   | 64 (2.52)   |
| d | 47.6 (1.87) | 55.1 (2.17) |

Weight TMS 10-F: 80 g (2.8 oz)

TMS 15-F: 100 g (3.5 oz)

TMS 25-F: 150 g (5.3 oz)

### TMS 25-F Models



Faston no 187/4.75 x 0.51mm (0.187 x 0.02)

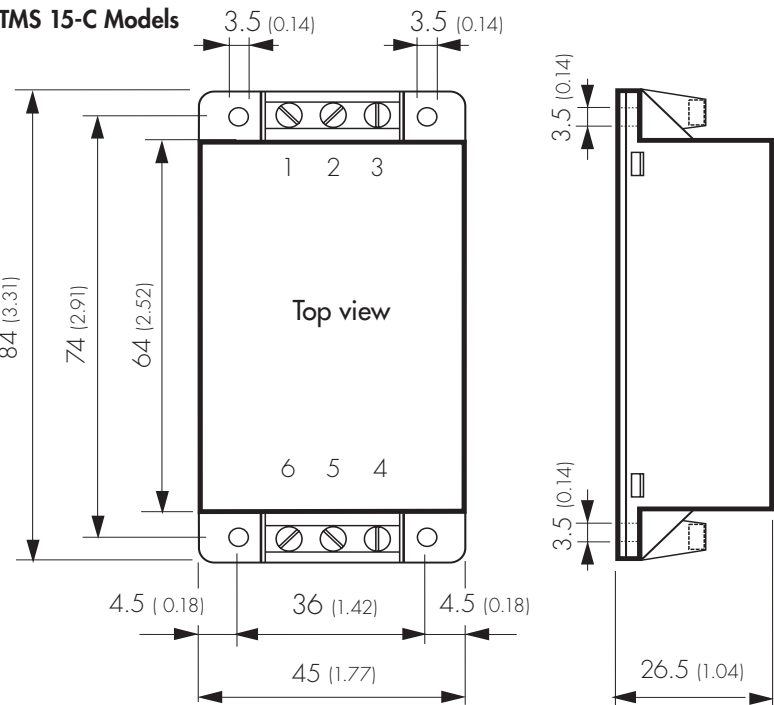
### Pin Out

| Pin | Single | Dual   |
|-----|--------|--------|
| 1   | -V out | -V out |
| 2   | No Tab | Common |
| 3   | +V out | +V out |
| 4   | AC in  | AC in  |
| 5   | AC in  | AC in  |
| 6   | FG     | FG     |

FG = field ground

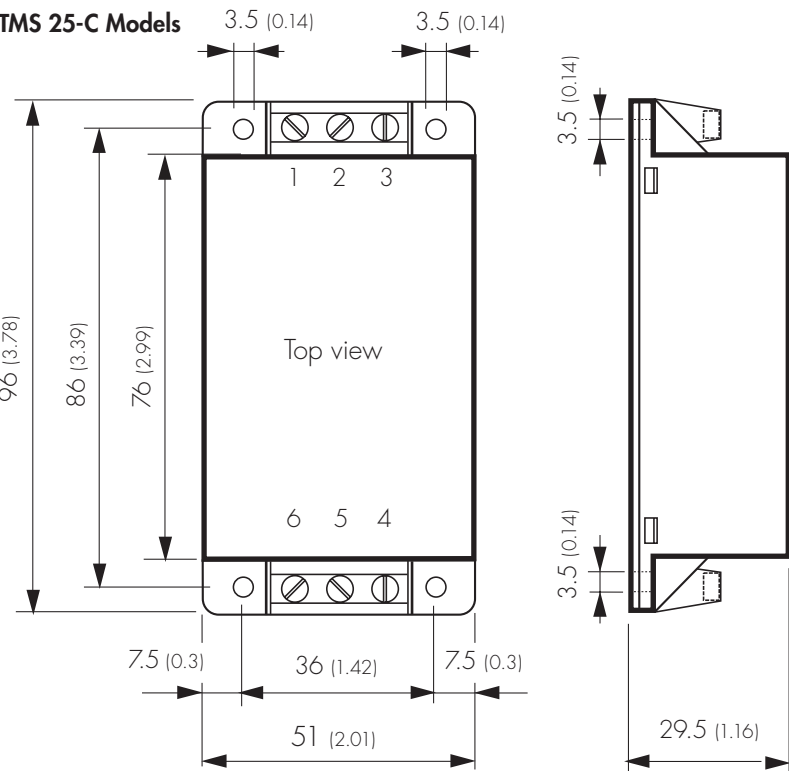
Outline Dimensions

Chassis mounting with screw terminals



Input and output screw terminal block: GMKDS 1.5/3-7.62 (Phoenix)

Weight TMS 15-C: 105 g (3.7 oz)  
TMS 25-C: 165 g (5.8 oz)



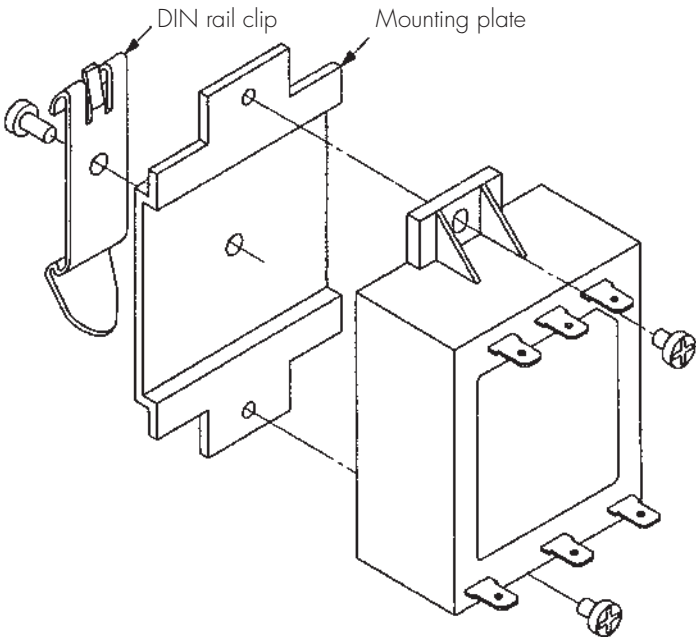
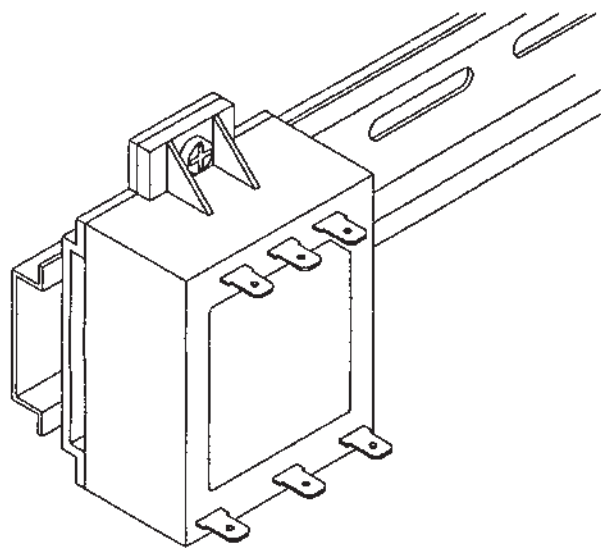
Input and output screw terminal block: GMKDS 1.5/3-7.62 (Phoenix)

| Pin Out |             |        |
|---------|-------------|--------|
| Pin     | Single      | Dual   |
| 1       | -V out      | -V out |
| 2       | No function | Common |
| 3       | +V out      | +V out |
| 4       | AC in       | AC in  |
| 5       | AC in       | AC in  |
| 6       | FG          | FG     |

FG = field ground

Dimensions in[mm], ( ) = Inches  
Tolerances = 0.5mm (0.02)

DIN-Rail Mount



| Order Code        |                     |                         |
|-------------------|---------------------|-------------------------|
| Mounting kit for: | FASTON tabs version | Screw terminals version |
| TMS 10 models     | <b>TMS-DM10</b>     | ---                     |
| TMS 15 models     | <b>TMS-DM15</b>     | <b>TMS-DM15C</b>        |
| TMS 25 models     | <b>TMS-DM25</b>     | <b>TMS-DM25C</b>        |

Mounting kit contains mounting plate, clip and screws

Specifications can be changed any time without notice.

Specifications can be changed without notice! Make sure you are using the latest documentation, downloadable at [www.tracopower.com](http://www.tracopower.com)