

IMX 15, IMY 15 Series

15 Watt DC-DC Converters



Wide input voltage ranges up to 150 V DC
1 or 2 outputs up to 48 V DC
1500...4000 V DC I/O electric strength test



- Reinforced isolation for IMY-models
- Magnetic feedback
- Synchronous rectifier for 2.5, 3.3 and 5 V outputs
- Short circuit protection

Selection chart

| Output 1 | | Output 2 | | Input voltage U_i [V DC] | Type | Options (for availability consult sales point) |
|---------------------|-------------------|---------------------|-------------------|----------------------------------|--------------------|--|
| U_o nom [V DC] | I_o nom [mA] | U_o nom [V DC] | I_o nom [mA] | | | |
| 3.3 | 4500 | - | - | 8.4...36 | 20 IMX 15-03-9RG | -8, i, L, C, Z |
| 3.3 | 4500 | - | - | 16.8...75 | 40 IMX 15-03-9RG | -8, i, L, C, Z |
| 3.3 | 4500 | - | - | 50...150 | 110 IMY 15-03-9RG | i, Z |
| 5 | 3500 | - | - | 8.4...36 | 20 IMX 15-05-9RG | -8, i, L, C, Z |
| 5 | 3500 | - | - | 16.8...75 | 40 IMX 15-05-9RG | -8, i, L, C, Z |
| 5 | 3500 | - | - | 50...150 | 110 IMY 15-05-8RG | i, Z |
| 5.1 | 2300 | - | - | 8.4...36 | 20 IMX 15-05-9R | -8, i, L, C, Z |
| 5.1 | 2500 | - | - | 16.8...75 | 40 IMX 15-05-9R | -8, i, L, C, Z |
| 5.1 | 2500 | - | - | 50...150 | 110 IMY 15-05-8R | i, Z |
| 12 | 1300 | - | - | 8.4...36 | 20 IMX 15-12-9C | -8 |
| 12 | 1300 | - | - | 16.8...75 | 40 IMX 15-12-9C | -8 |
| 15 | 1000 | - | - | 8.4...36 | 20 IMX 15-15-9C | -8 |
| 15 | 1000 | - | - | 16.8...75 | 40 IMX 15-15-9C | -8 |
| +5.1 | 1350 | +3.3 | 1350 | 8.4...36 | 20 IMX 15-0503-9R | -8, i, L, Z |
| +5.1 | 1500 | +3.3 | 1500 | 16.8...75 | 40 IMX 15-0503-9R | -8, i, L, Z |
| +5.1 | 1500 | +3.3 | 1500 | 50...150 | 110 IMY 15-0503-8R | -8, i, L, Z |
| 5 | 1300 | 5 | 1300 | 8.4...36 | 20 IMX 15-05-05-9 | -8, K, i, L, C, Z |
| 5 | 1400 | 5 | 1400 | 16.8...75 | 40 IMX 15-05-05-9 | -8, K, i, L, C, Z |
| 5 | 1400 | 5 | 1400 | 50...150 | 110 IMY 15-05-05-8 | i, Z |
| 12 | 650 | 12 | 650 | 8.4...36 | 20 IMX 15-12-12-9 | -8, K, i, L, C, Z |
| 12 | 700 | 12 | 700 | 16.8...75 | 40 IMX 15-12-12-9 | -8, K, i, L, C, Z |
| 12 | 700 | 12 | 700 | 50...150 | 110 IMY 15-12-12-8 | i, Z |
| 15 | 500 | 15 | 500 | 8.4...36 | 20 IMX 15-15-15-9 | -8, K, i, L, C, Z |
| 15 | 560 | 15 | 560 | 16.8...75 | 40 IMX 15-15-15-9 | -8, K, i, L, C, Z |
| 15 | 560 | 15 | 560 | 50...150 | 110 IMY 15-15-15-8 | i, Z |
| 24 | 320 | 24 | 320 | 8.4...36 | 20 IMX 15-24-24-9 | -8, i, L, C, Z |
| 24 | 350 | 24 | 350 | 16.8...75 | 40 IMX 15-24-24-9 | -8, i, L, C, Z |
| 24 | 350 | 24 | 350 | 50...150 | 110 IMY 15-24-24-8 | i, Z |

Input

| | | |
|---------------------|------------|----------------|
| Input voltage range | 20 IMX 15 | 8.4...36 V DC |
| | 40 IMX 15 | 16.8...75 V DC |
| | 110 IMY 15 | 50...150 V DC |

Output

| | | |
|---------------------------------|--|--------------------------------|
| Output voltage setting accuracy | $U_{i\text{ nom}}$, 50% $I_{o\text{ nom}}$ | $\pm 1\%$ $U_{o\text{ nom}}$ |
| Minimum load | recommended for double output models | 10% $I_{o\text{ nom}}$ |
| Line/load regulation | $U_{i\text{ min}} \dots U_{i\text{ max}}$, 50% $I_{o\text{ nom}}$, models R (magn. feedback) | $\pm 0.5\%$ $U_{o\text{ nom}}$ |
| Line regulation | $U_{i\text{ min}} \dots U_{i\text{ max}}$, 50% $I_{o\text{ nom}}$, models without R | $\pm 1\%$ $U_{o\text{ nom}}$ |
| Load regulation | $U_{i\text{ nom}}$, 10...100% $I_{o\text{ nom}}$, models without R, main outp. | $\pm 3\%$ $U_{o\text{ nom}}$ |
| | tracking output, models without R | $\pm 3\%$ $U_{o\text{ nom}}$ |
| Output voltage switching noise | $U_{i\text{ nom}}$, 0...100% $I_{o\text{ nom}}$, peak-peak, total | max. 1...2% $U_{o\text{ nom}}$ |
| Efficiency | $U_{i\text{ nom}}$, $I_{o\text{ nom}}$ | up to typ 88% |

Control and protection

| | | |
|-----------------------------|--|----------------------------|
| Remote shut down | TTL-compatible input | disabled with ≤ 0.7 V |
| Trim input for U_o | | 80...105% |
| Input undervoltage lock-out | | |
| Overload protection | $U_{i\text{ min}} \dots U_{i\text{ max}}$, fully protected, hiccup mode | |
| No-load protection | $U_{i\text{ min}} \dots U_{i\text{ max}}$ | |
| Temperature protection | | |

Safety and EMC

| | | |
|--------------------------------|---|----------------|
| Electric strength test voltage | I/O (20 and 40 IMX/110 IMY) | 1500/4000 V DC |
| Type of insulation | I/O (20 and 40 IMX supplementary/110 IMY re-inforced) | |
| Electromagnetic interference | conducted (with external filter) | class B |
| | radiated | class A |

Environmental

| | | |
|-------------------------------|---|-------------|
| Operating ambient temperature | $U_{i\text{ nom}}$, $I_{o\text{ nom}}$ | -40...71°C |
| Storage temperature | non operational | -40...100°C |
| Relative humidity | non condensing | 93% |

Options

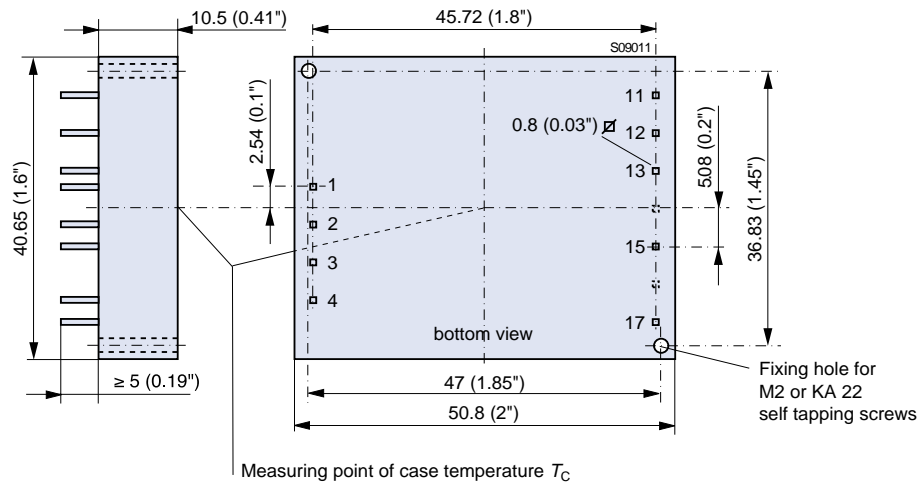
| | | |
|-------------------------------|--|----|
| Extended temperature range | -40...85°C (derating above 71°C), ambient, operating | -8 |
| Alternative pinout | connected outputs, for compatibility | K |
| Inhibit input (reverse logic) | TTL-compatible, disabled with ≥ 2.4 V or open-circuit | i |
| SMD version | with PCB lid | L |
| C-pinout | connected outputs, no options possible excl. -8 | C |
| Open version | no housing, not lacquered | Z |

Mechanical data

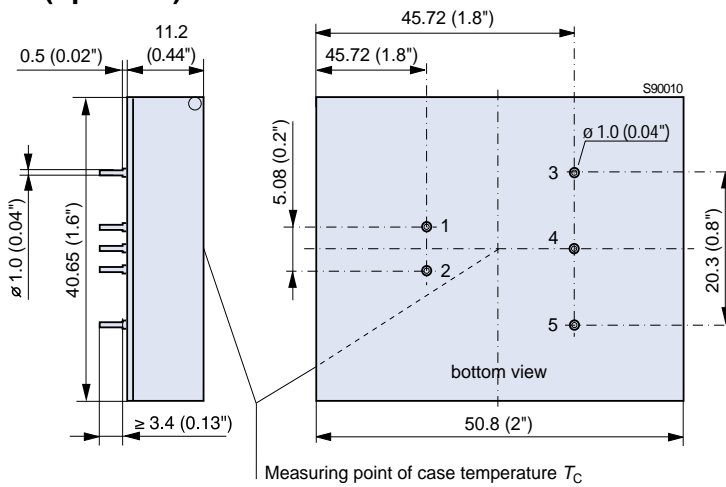
Tolerances ± 0.3 mm (0.012") unless otherwise indicated.



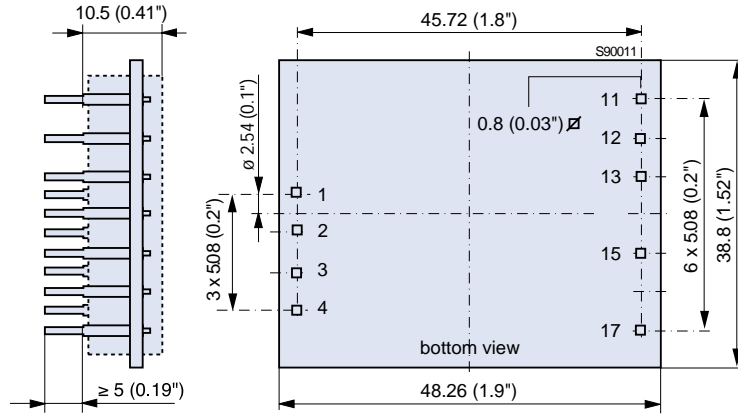
Standard and option K



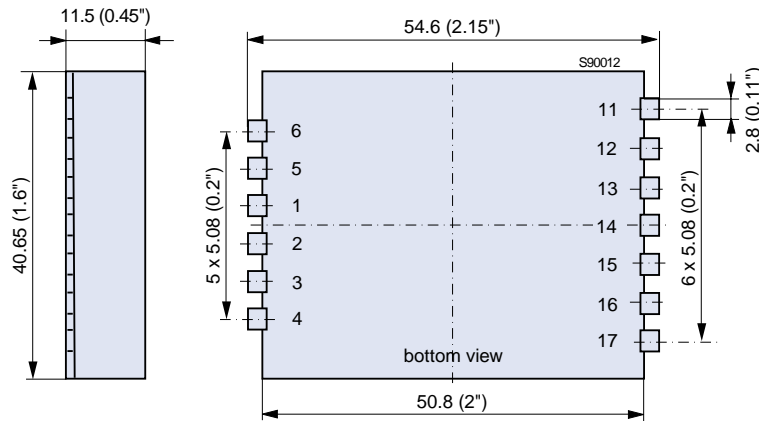
C pinout (option C)



Open frame version (option Z)



SMC version (option L)



Pin allocation

| Pin ¹ | Standard and Option Z | | Option K dual | Option C | | Option L | | |
|------------------|-----------------------|-----------------|------------------|-----------------|--------|----------|-----------------|-----------------|
| | single | double | | -0503- | single | dual | single | double |
| 1 | Vi+ | Vi+ | Vi+ | Vi+ | Vi+ | Vi+ | Vi+ | |
| 2 | Vi- | Vi- | Vi- | Vi- | Vi- | Vi- | Vi- | |
| 3 | - | Trim | n.c. | - | Vo+ | Vo+ | n.c. | Trim |
| 4 | \overline{SD} | \overline{SD} | \overline{SD} | \overline{SD} | - | Go | \overline{SD} | \overline{SD} |
| 5 | - | - | - | - | Vo- | Vo- | n.c. | n.c. |
| 6 | - | - | - | - | - | - | n.c. | n.c. |
| 11 | - | Vo1+ | Vo2+ | Vo+ | - | - | n.c. | Vo1 |
| 12 | - | Vo1- | Go | - | - | - | n.c. | Vo1- |
| 13 | Vo+ | Vo2+ | Vo1+ | Go | - | - | Vo+ | Vo2+ |
| 15 | Vo- | Vo2- | Go | Vo- | - | - | Vo- | Vo2 |
| 17 | R | n.c. | R | n.c. | - | - | R | n.c. |

¹ Pin 14 and pin 16 are not connected.