

# Features

## Regulated Converter

- Input Range: 80-264VAC or 80-305VAC
- Temperature rang: -40 to +85°C with derating
- Over voltage category OVC III
- 2MOPP medical certified B and BF compliant
- Class B EMC filter built-in
- 4000/5000m (medical/ITE) operating altitude

**RECOM**  
AC/DC Converter

## RACM60-K

60 Watt



Open Frame

2"x3" & 2"x4"

Enclosed 2"x4"

### Description

The multi-purpose, industrial + household + medical grade AC/DC converter series RACM60-K/OF delivers 60 Watts of output power from -40°C to +55°C with natural air convection only, and up to +85°C with derating or forced cooling. With a clear focus on extended thermal performance for systems where space is limited, these 2" x 3" compact modules are designed to gain highest overall efficiency levels over the full output load range from universal AC inputs. The RACM60-K/OF has ANSI/AAMI/IEC 60601-1 medical safety and EN 60601-1-2 medical EMC certifications and offers 4kVAC/1 min isolation, 2MOPP and designed to meet B and BF requirements. It is additionally certified to IEC/EN62368-1(CB Report) and IEC61558-1/-2-16 for industrial applications and IEC/EN60335-1 for household appliances. The robust built-in Class B EMC filter has sufficient margin to allow both Installation Class II or Class I PELV with grounded output. A range of mechanical fixing options makes the RACM60 suitable for many different mounting conditions: the standard chassis mount part mates with Molex connectors and the /PCB option permits direct installation in printed circuit boards. Additionally, a 2" x 4" footprint for backwards-compatibility with legacy designs is available on request.

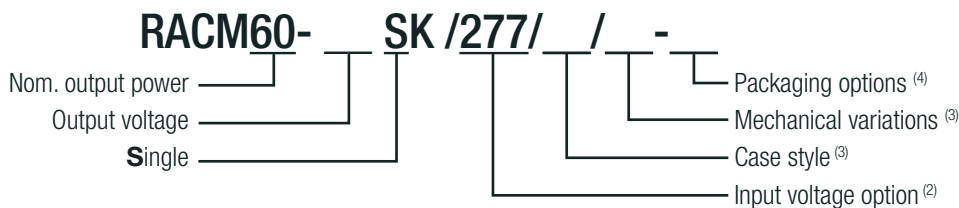
### Selection Guide

| Part Number                    | Input Voltage Range [VAC] | Output Voltage [VDC] | Output Current [mA] | Output Power [W] | Efficiency typ. <sup>(1)</sup> [%] |
|--------------------------------|---------------------------|----------------------|---------------------|------------------|------------------------------------|
| RACM60-05SK <sup>(2,3,4)</sup> | 80-264/ 80-305            | 5                    | 8000                | 40               | 89                                 |
| RACM60-12SK <sup>(2,3,4)</sup> | 80-264/ 80-305            | 12                   | 5000                | 60               | 90                                 |
| RACM60-15SK <sup>(2,3,4)</sup> | 80-264/ 80-305            | 15                   | 4000                | 60               | 90                                 |
| RACM60-24SK <sup>(2,3,4)</sup> | 80-264/ 80-305            | 24                   | 2500                | 60               | 90                                 |
| RACM60-36SK <sup>(2,3)</sup>   | 80-264                    | 36                   | 1667                | 60               | 90                                 |
| RACM60-48SK <sup>(2,3,4)</sup> | 80-264/ 80-305            | 48                   | 1250                | 60               | 90                                 |

#### Notes:

Note1: Efficiency is tested at nominal input and full load at +25°C ambient

### Model Numbering



#### Notes:

Note2: Add suffix **"/277/OF"** for wider input voltage range (80-305VAC)  
without suffix= standard input range (80-264VAC), check **"Model Matrix <sup>(4)</sup>"**  
For more information, refer to **"Input Voltage Range <sup>(5,6)</sup>"**

Note3: **"/OF"** = standard 2"x3" open frame version with standard connectors  
**"/OF/PCB"** = 2"x3" open frame with PCB mounting pins  
**"/OF/2x4"** = 2"x4" open frame version with standard connectors  
**"/ENC/2x4"** = 2"x4" version with metal enclosure and standard connectors (coming soon)

Note4: for packaging details refer to last page **"PACKAGING INFORMATION"**

| Model Matrix <sup>(4)</sup> |     |            |            |            |            |
|-----------------------------|-----|------------|------------|------------|------------|
| Model                       | /OF | /277/OF    | /OF/PCB    | /OF/2x4    | /ENC/2x4   |
| RACM60-05SK                 | x   | x          | x          | on request | on request |
| RACM60-12SK                 | x   | x          | x          | x          | x          |
| RACM60-15SK                 | x   | x          | on request | on request | on request |
| RACM60-24SK                 | x   | x          | x          | x          | x          |
| RACM60-36SK                 | x   | on request | on request | on request | on request |
| RACM60-48SK                 | x   | x          | on request | on request | on request |

x = standard portfolio / on request = MOQ may apply on project base / N/A= not available



IEC/EN62368-1 certified  
ANSI/AAMI ES60601-1 Ed. 3.1 certified  
CSA/CAN-C22.2 No. 60601-1:14 certified  
IEC/EN60335-1 certified  
IEC/EN61558-1 certified  
IEC/EN61558-2-16 certified  
EN60601-1-2 compliant  
EN55032 compliant  
EN55035 compliant  
CB Report

**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

### BASIC CHARACTERISTICS

| Parameter                                               | Condition                  |                                    | Min.            | Typ.           | Max.                     |
|---------------------------------------------------------|----------------------------|------------------------------------|-----------------|----------------|--------------------------|
| Internal Input Filter                                   |                            |                                    | Pi Type         |                |                          |
| Nominal Input Voltage                                   | 50/60Hz                    | standard version<br>"/277" version | 100VAC          |                | 240VAC<br>277VAC         |
| Input Voltage Range <sup>(5,6)</sup>                    | standard version           | 47-63Hz<br>DC                      | 80VAC<br>120VDC |                | 264VAC<br>370VDC         |
|                                                         | "/277" version             | 47-63Hz<br>DC                      | 80VAC<br>120VDC |                | 305VAC<br>430VDC         |
| Input Current                                           | 115VAC<br>230VAC<br>277VAC |                                    |                 |                | 1400mA<br>600mA<br>500mA |
| Inrush Current                                          | cold start                 | 115VAC<br>230VAC<br>277VAC         |                 |                | 30A<br>60A<br>70A        |
| ErP Standby Mode Conformity<br>(Output Load Capability) | 115/230/277VAC             | Input Power:                       | 0.5W<br>1.0W    | 0.3W<br>0.7W   |                          |
| No load Power Consumption                               | 230VAC<br>277VAC           |                                    |                 | 100mW<br>120mW |                          |
| Input Frequency Range                                   | AC Input                   |                                    | 47Hz            |                | 63Hz                     |
| Minimum Load                                            |                            |                                    | 0%              |                |                          |
| Power Factor                                            | 115VAC                     |                                    | 0.6             |                |                          |
|                                                         | 230VAC                     |                                    | 0.5             |                |                          |
|                                                         | 277VAC                     |                                    | 0.45            |                |                          |
| Start-up Time                                           |                            |                                    |                 | 150ms          |                          |
| Rise Time                                               |                            |                                    |                 | 100ms          |                          |
| Hold-up Time                                            | 115VAC                     |                                    | 12ms            |                |                          |
|                                                         | 230VAC                     |                                    | 50ms            |                |                          |
|                                                         | 277VAC                     |                                    | 70ms            |                |                          |
| Internal Operating Frequency                            | 100% load at nominal Vin   |                                    |                 | 100kHz         |                          |
| Output Ripple and Noise <sup>(7)</sup>                  | 20MHz BW                   | 5Vout<br>others                    |                 |                | 200mVp-p<br>1% of Vout   |

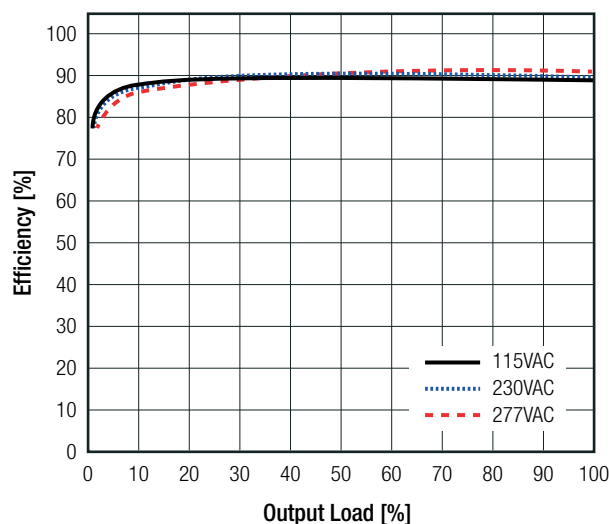
**Notes:**

Note5: The products were submitted for safety files at AC-Input operation (90-264VAC)

Note6: Output power derating for Line-input of less than 90VAC (derate linearly from 100% at 90VAC to 80% at 80VAC)

Note7: Measurements are made with a 0.1µF MLCC & 10µF E-cap in parallel across output. (low ESR)

### Efficiency vs. Load



**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

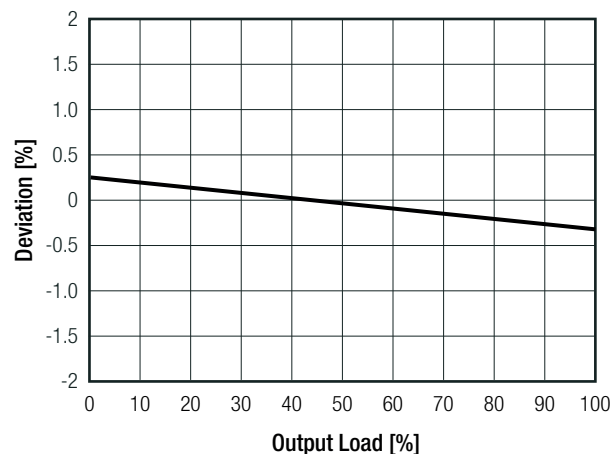
### REGULATIONS

| Parameter                      | Condition            |                                                                 | Value                                  |
|--------------------------------|----------------------|-----------------------------------------------------------------|----------------------------------------|
| Output Accuracy                | standard version     | 100% load                                                       | ±2.0% typ.                             |
|                                | “/277” version       | 5Vout<br>others                                                 | ±3.0% typ.<br>±1.0% typ.               |
| Line Regulation                | standard version     | low line to high line                                           | ±0.05% typ.                            |
|                                | “/277” version       | 5Vout<br>others                                                 | ±0.5% typ.<br>±0.05% typ.              |
| Load Regulation <sup>(8)</sup> | standard version     | 10% to 100% load<br>5VDC<br>12VDC, 15VDC<br>24VDC, 36VDC, 48VDC | ±1.5% typ.<br>±0.5% typ.<br>±0.1% typ. |
|                                | “/277” version       | 10% to 100% load<br>5VDC<br>12VDC, 15VDC<br>24VDC, 36VDC, 48VDC | ±3.0% typ.<br>±0.8% typ.<br>±0.2% typ. |
| Transient Response             | 25% load step change |                                                                 | 3.0% max.                              |
|                                | recovery time        |                                                                 | 500µs max.                             |

#### Notes:

Note8: Operation below 10% load will not harm the converter, but specifications may not be met

#### Deviation vs. Load



### PROTECTIONS

| Parameter                                  | Type                                       | Value                           |
|--------------------------------------------|--------------------------------------------|---------------------------------|
| Input Fuse                                 | internal                                   | T3.15A, slow blow type          |
| Short Circuit Protection (SCP)             |                                            | hiccup, auto recovery           |
| Over Voltage Protection (OVP)              |                                            | 105 - 120%, auto recovery       |
| Output Reverse Voltage Protection          |                                            | 107 - 145%, auto recovery       |
| Over Voltage Category (OVC) <sup>(9)</sup> | according to 62368-1, 61558-2-16 & 60335-1 | OVCII                           |
|                                            | according to 61558-2-16                    | OVCIII (up to 2000m)            |
| Over Current Protection (OCP)              |                                            | 130% - 180%, hiccup mode        |
| Thermal Shutdown                           | TC point IC 101                            | +130°C, restart after cool down |

#### Notes:

Note9: RACM60-xxK/277/OF models were submitted to safety agency for OVC III rating.

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**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

| Parameter                                            | Type                                  |            |                      | Value      |
|------------------------------------------------------|---------------------------------------|------------|----------------------|------------|
| Class of Equipment                                   |                                       |            |                      | Class II   |
| Isolation Voltage (safety certified) <sup>(10)</sup> | 1 minute                              | I/P to O/P | according to 60601-1 | 4.8kVAC    |
| Isolation Resistance                                 | I/P to O/P, V <sub>ISO</sub> = 500VDC |            |                      | 1GΩ min.   |
| Isolation Capacitance                                | I/P to O/P, 100kHz/0.1V               |            |                      | 100pF max. |
| Insulation Grade                                     |                                       |            |                      | reinforced |
| Means of Protection                                  | 319VAC working voltage                |            |                      | 2MOPP      |

**Notes:**

Note10: For repeat Hi-Pot testing, reduce the time and/or the test voltage

### ENVIRONMENTAL

| Parameter                          | Condition                                  |                       | Value                                                      |
|------------------------------------|--------------------------------------------|-----------------------|------------------------------------------------------------|
| Operating Temperature Range        | @ natural convection 0.1m/s                | refer to graphs below | -40°C to +85°C                                             |
| Temperature Coefficient            |                                            |                       | ±0.02%/K                                                   |
| Operating Altitude <sup>(11)</sup> | according to 62368-1, 61558-2-16 & 60335-1 |                       | 5000m                                                      |
|                                    | according to 60601-1                       |                       | 4000m                                                      |
| Operating Humidity                 | non-condensing                             |                       | 95% max.                                                   |
| Pollution Degree                   |                                            |                       | PD2                                                        |
| Vibration                          | according to MIL-STD-202G                  |                       | 10-500Hz, 2G 10min./1cycle, period 60min. along x,y,z axes |
| MTBF                               | according to MIL-HDBK-217F, G.B.           | +25°C                 | >900 x 10 <sup>3</sup> hours                               |
|                                    |                                            | +40°C                 | >726 x 10 <sup>3</sup> hours                               |
| Design Lifetime                    | nom. Vin= 230VAC                           | +40°C                 | >42 x 10 <sup>3</sup> hours                                |

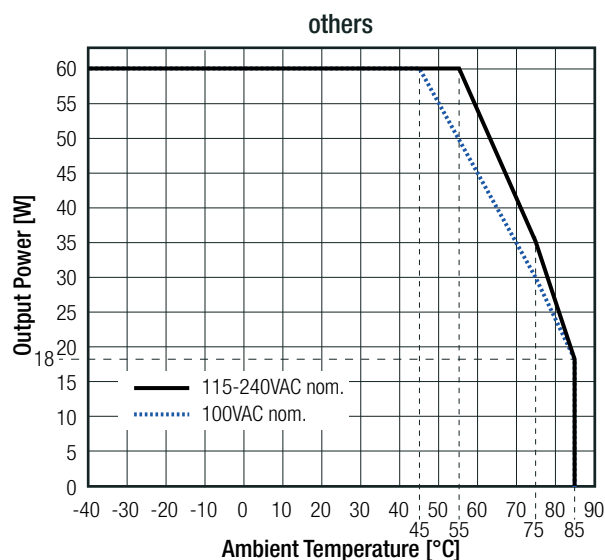
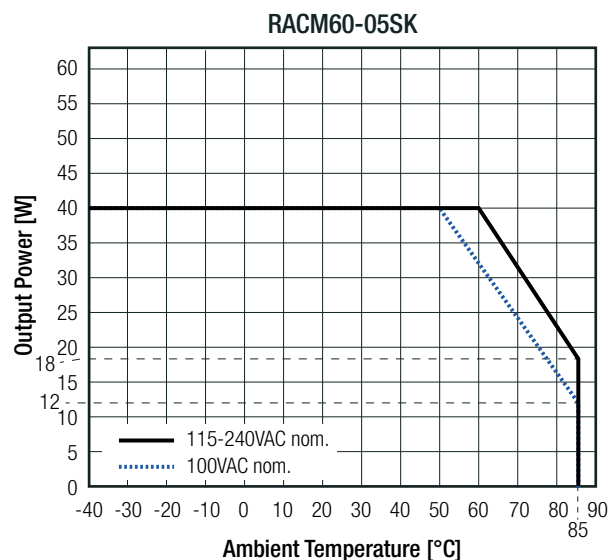
**Notes:**

Note11: Recognized by safety agency for safe operation up to 4000/5000m. High altitude operation may impact the performance and lifetime  
Please contact RECOM tech support for advice

### Derating Graph non-/277/0F Versions

(@ Chamber and natural convection 0.1m/s)

Output power derating for line-input of less than 90VAC (derate linearly from 100% at 90VAC to 80% at 80VAC)



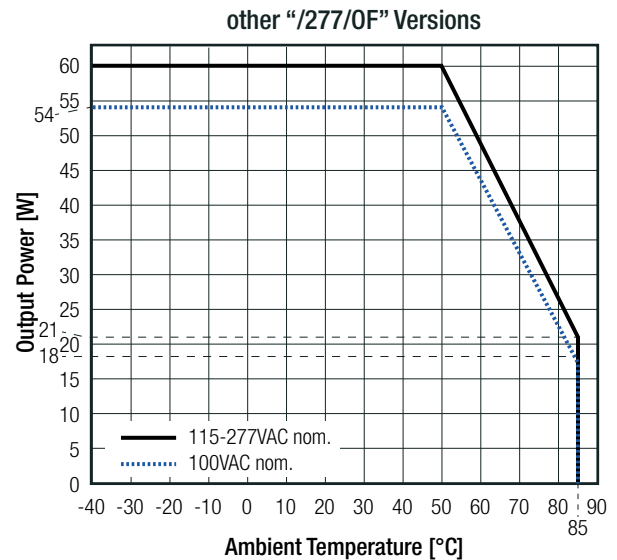
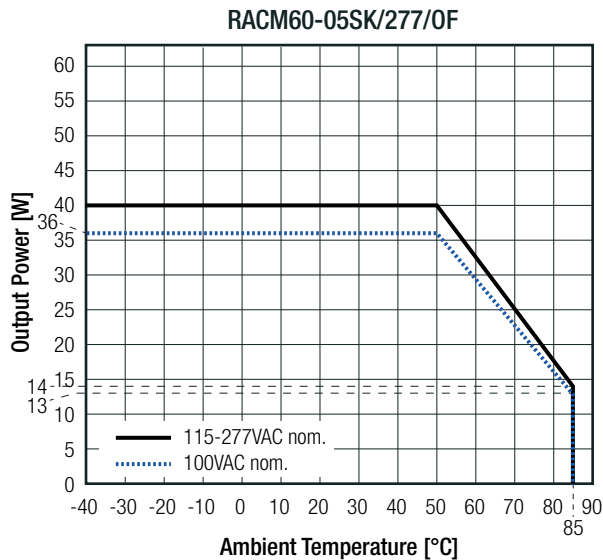
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**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

**Derating Graph “/277/OF” Version**

(@ Chamber and natural convection 0.1m/s)

Output power derating for Line-input of less than 90VAC (derate linearly from 100% at 90VAC to 80% at 80VAC)



### SAFETY AND CERTIFICATIONS

| Certificate Type (Safety)                                                                                                                                | Report Number               | Standard                                                                          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-----------------------------------------------------------------------------------|
| Medical electrical equipment Part 1: General requirements for basic safety and essential performance                                                     | E511305-D1000-1/A1/C0-UL    | CAN/CSA-C22.2 No. 60601-1:14, 3rd Ed.<br>ANSI/AAMI ES60601-1:2005 + A2:2010/R2012 |
| Audio/Video, information and communication technology equipment - Safety requirements (CB Scheme)                                                        | CN21PMDW-001                | IEC62368-1:2014 2nd Edition                                                       |
| Audio/Video, information and communication technology equipment - Safety requirements (LVD)                                                              | 50355749 001                | EN62368-1:2014 + A11:2017                                                         |
| Household and similar electrical appliances – Safety – Part 1: General requirements (LVD)                                                                | 4384104.50                  | IEC60335-1:2010 5th Edition + A2:2016<br>EN60335-1:2012 + A15:2021                |
| Safety of power transformers, power supplies, reactors & similar products for supply voltages up to 1100 V (CB Scheme)                                   | 50355750 001                | IEC61558-1:2005 2nd Edition + A1:2009                                             |
| Safety of power transformers, power supplies, reactors & similar products for supply voltages up to 1100 V Part 2: Particular requirements (CB Scheme)   | (except /277/OF & /ENC/2x4) | IEC61558-2-16:2009 1st Edition + A1:2013                                          |
| Safety of power transformers, power supplies, reactors & similar products for supply voltages up to 1100V                                                | 50355751 001                | EN61558-1:2005 + A1:2009                                                          |
| Safety of power transformers, power supplies, reactors & similar products for supply voltages up to 1100 V Part 2: Particular requirements               | (except /277/OF & /ENC/2x4) | EN61558-2-16:2009 + A1:2013                                                       |
| Safety of power transformers, power supplies, reactors and similar products for supply voltages up to 1100 V (CB Scheme)                                 | 085-210569701-000           | IEC61558-1:2017                                                                   |
| Safety of power transformers, power supplies, reactors and similar products for supply voltages up to 1100 V Part 2: Particular requirements (CB Scheme) | (OVCIII)                    | IEC61558-2-16:2009 1st Edition + A1:2013                                          |
| Safety of power transformers, power supplies, reactors and similar products for supply voltages up to 1100 V                                             | 64.210.21.05697.01          | EN IEC 61558-1:2019                                                               |
| Safety of power transformers, power supplies, reactors and similar products for supply voltages up to 1100 V Part 2: Particular requirements             | (OVCIII)                    | EN61558-2-16:2009 + A1:2013                                                       |

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**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

| EMC Compliance (EN60601-1-2)                                                                                                                                                           | Condition                                                                                                                                                                        | Standard / Criterion                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| Medical electrical equipment - Part 1-2: General requirements for basic safety and essential performance - Collateral standard: Electromagnetic compatibility - Requirements and tests | LCS220321054BE                                                                                                                                                                   | EN60601-1-2:2015+A1:2021<br>Class B, Group 1                                                                            |
| ESD Electrostatic discharge immunity test                                                                                                                                              | Air: $\pm 2, 4, 8, 15\text{kV}$<br>Contact: $\pm 2, 4, 8\text{kV}$                                                                                                               | EN61000-4-2:2009, Criteria B                                                                                            |
| Radiated, radio-frequency, electromagnetic field immunity test                                                                                                                         | 9V/m (704-787MHz)<br>9V/m (5100-5800MHz)<br>10V/m (80-2700MHz)<br>27V/m (380-390MHz)<br>28V/m (430-470MHz)<br>28V/m (800-960MHz)<br>28V/m (1700-1990MHz)<br>28V/m (2400-2570MHz) | EN61000-4-3:2006+A2:2010, Criteria A                                                                                    |
| Fast Transient and Burst Immunity                                                                                                                                                      | AC Port: L-N 2kV                                                                                                                                                                 | EN61000-4-4:2012, Criteria B                                                                                            |
| Surge Immunity                                                                                                                                                                         | L-N: 1kV<br>L (N)-PE: 2kV                                                                                                                                                        | EN61000-4-5:2014, Criteria B                                                                                            |
| Immunity to conducted disturbances, induced by radio-frequency fields                                                                                                                  | AC Port:<br>3Vrms: (0.15-80MHz)<br>6Vrms: (ISM and amateur radio bands according to table 9)                                                                                     | EN61000-4-6:2014, Criteria A                                                                                            |
| Power Magnetic Field Immunity                                                                                                                                                          | 30A/m                                                                                                                                                                            | EN61000-4-8:2010, Criteria A                                                                                            |
| Voltage Dips and Interruptions                                                                                                                                                         | Dips: 100% (0.5P 1.0P)<br>30%<br>Interruptions: 100%                                                                                                                             | EN61000-4-11:2004, Criteria B                                                                                           |
| Limits of Voltage Fluctuations & Flicker                                                                                                                                               | LCS220321054BE                                                                                                                                                                   | EN61000-3-3:2013                                                                                                        |
| <b>EMC Compliance (EN55032)</b>                                                                                                                                                        |                                                                                                                                                                                  |                                                                                                                         |
| Electromagnetic compatibility of multimedia equipment - Emission requirements                                                                                                          | LCS220321053BE                                                                                                                                                                   | EN55032:2015+A1:2020, Class B                                                                                           |
| Electromagnetic compatibility of multimedia equipment - Immunity requirements                                                                                                          |                                                                                                                                                                                  | EN55035:2017+A11:2020                                                                                                   |
| ESD Electrostatic discharge immunity test                                                                                                                                              | Air: $\pm 2, 4, 8\text{kV}$<br>Contact: $\pm 2, 4\text{kV}$                                                                                                                      | EN61000-4-2:2009, Criteria B                                                                                            |
| Radiated, radio-frequency, electromagnetic field immunity test                                                                                                                         | 3 V/m (80-5000MHz)                                                                                                                                                               | EN61000-4-3:2006+A2:2010, Criteria A                                                                                    |
| Fast Transient and Burst Immunity                                                                                                                                                      | AC Port: L-N 1kV                                                                                                                                                                 | EN61000-4-4:2004+A1:2010, Criteria B                                                                                    |
| Surge Immunity                                                                                                                                                                         | L-N: 1kV<br>L (N)-PE: 2kV                                                                                                                                                        | EN61000-4-5:2014 + A1:2017, Criteria B                                                                                  |
| Immunity to conducted disturbances, induced by radio-frequency fields                                                                                                                  | AC Port:<br>3Vrms (0.15-10MHz)<br>3-1Vrms (10-30MHz)<br>1Vrms (30-80MHz)                                                                                                         | EN61000-4-6:2014+A1:2015, Criteria A                                                                                    |
| Power Magnetic Field Immunity                                                                                                                                                          | 1A/m                                                                                                                                                                             | EN61000-4-8:2010, Criteria A                                                                                            |
| Voltage Dips and Interruptions                                                                                                                                                         | Dips: 100%<br>30%<br>Interruptions: 100%                                                                                                                                         | EN61000-4-11:2004+A1:2017, Criteria B<br>EN61000-4-11:2004+A1:2017, Criteria C<br>EN61000-4-11:2004+A1:2017, Criteria C |
| Limits of Voltage Fluctuations & Flicker                                                                                                                                               | LCS220321053BE                                                                                                                                                                   | EN61000-3-3:2013                                                                                                        |
| <b>EMC Compliance (EN61204-3)</b>                                                                                                                                                      |                                                                                                                                                                                  |                                                                                                                         |
| Low voltage power supplies, d.c. output Part 3: Electromagnetic compatibility (EMC)                                                                                                    | LCS220321055BE                                                                                                                                                                   | EN/IEC61204-3:2018, Class B                                                                                             |
| ESD Electrostatic discharge immunity test                                                                                                                                              | Air: $\pm 2, 4, 8\text{kV}$<br>Contact: $\pm 2, 4\text{kV}$                                                                                                                      | EN61000-4-2:2009, Criteria B                                                                                            |

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**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

| EMC Compliance (EN61204-3)                                                                                                                           | Condition                                                        | Standard / Criterion                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------|
| Radiated, radio-frequency, electromagnetic field immunity test                                                                                       | 10V/m (80-1000MHz)<br>3V/m (1400-2000MHz)<br>1V/m (2000-2700MHz) | EN61000-4-3:2006+A2:2010, Criteria A   |
| Fast Transient and Burst Immunity                                                                                                                    | AC Port: L-N 2kV                                                 | EN61000-4-4:2012, Criteria B           |
| Surge Immunity                                                                                                                                       | L-N: 1kV<br>L (N)-PE: 2kV                                        | EN61000-4-5:2014 + A1:2017, Criteria B |
| Immunity to conducted disturbances, induced by radio-frequency fields                                                                                | AC Port:<br>10Vrms (0.15-80MHz)                                  | EN61000-4-6:2014+A1:2015, Criteria A   |
| Power Magnetic Field Immunity                                                                                                                        | 30A/m                                                            | EN61000-4-8:2010, Criteria A           |
| Voltage Dips and Interruptions                                                                                                                       | Dips: 100% (0.5P, 1.0P)                                          | EN61000-4-11:2004 +A1:2017, Criteria B |
|                                                                                                                                                      | 30% or 20%                                                       | EN61000-4-11:2004 +A1:2017, Criteria B |
|                                                                                                                                                      | Interruptions:100%                                               | EN61000-4-11:2004 +A1:2017, Criteria C |
| Limits of Voltage Fluctuations & Flicker                                                                                                             | LCS220321055BE                                                   | EN61000-3-3:2013+A2:2021               |
| Limitations on the amount of electromagnetic interference allowed from digital and electronic devices                                                | WTD22D04060199E                                                  | FCC 47 CFR Part 15:2020 Subpart B      |
| Limitations on the amount of electromagnetic interference allowed from digital and electronic devices, industrial, scientific, and medical equipment | WTD22D04060215E                                                  | FCC 47 CFR Part 18:2020                |

**DIMENSION AND PHYSICAL CHARACTERISTICS**

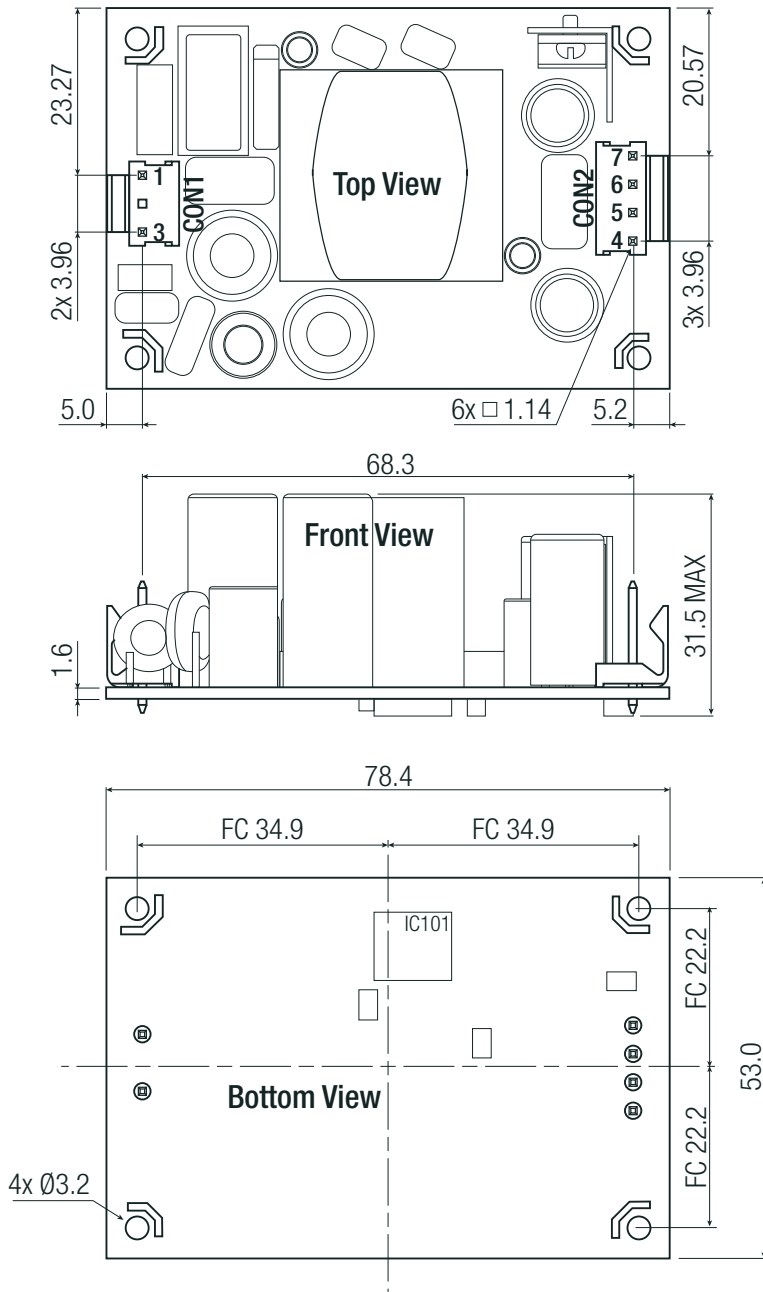
| Parameter         | Type                                 | Value                 |
|-------------------|--------------------------------------|-----------------------|
| Material          | PCB                                  | FR4 (UL94-V0)         |
| Dimension (LxWxH) | “/OF” and type                       | 78.4 x 53.0 x 31.5mm  |
|                   | “/277/OF” type                       | 76.2 x 50.8 x 32.0mm  |
|                   | “/OF/PCB” type                       | 78.4 x 53.0 x 35.4mm  |
|                   | “/OF/2x4” type                       | 101.6 x 53.0 x 31.5mm |
|                   | “/ENC/2x4” type                      | 118.3 x 62.7 x 38.7mm |
| Weight            | “/OF”, “/277/OF” and “/OF/PCB” types | 111g typ.             |
|                   | “/OF/2x4” type                       | 120g typ.             |
|                   | “/ENC/2x4” type                      | 167g typ.             |

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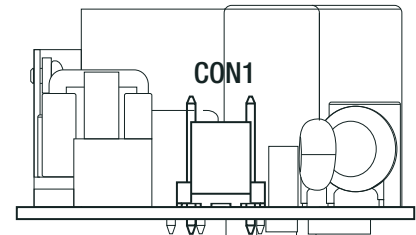


### Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

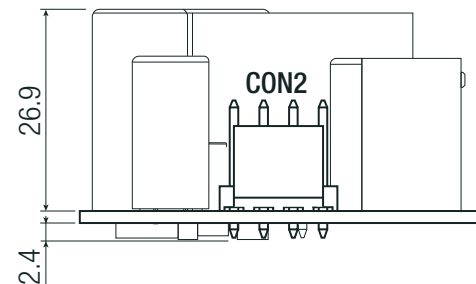
### Dimension Drawing “/OF” (mm)



### AC Input Side View



### DC Output Side View



### Connector Information

| #                       | Function   | Terminal              |
|-------------------------|------------|-----------------------|
| <b>AC Input (CON1)</b>  |            |                       |
| 1                       | VAC in (N) | 3 Pins (Pin2 removed) |
| 3                       | VAC in (L) | with 3.96mm pitch     |
| <b>DC Output (CON2)</b> |            |                       |
| 4,5                     | -VDC out   | 4 Pins                |
| 6,7                     | +VDC out   | with 3.96mm pitch     |

FC= fixing centers

### Compatible Connector

## Housing

Molex 41695 Series or equivalent

### Crimp Terminal

Molex 2478 Series or equivalent

General tolerances according to ISO 2768-m  
(table for reference only)

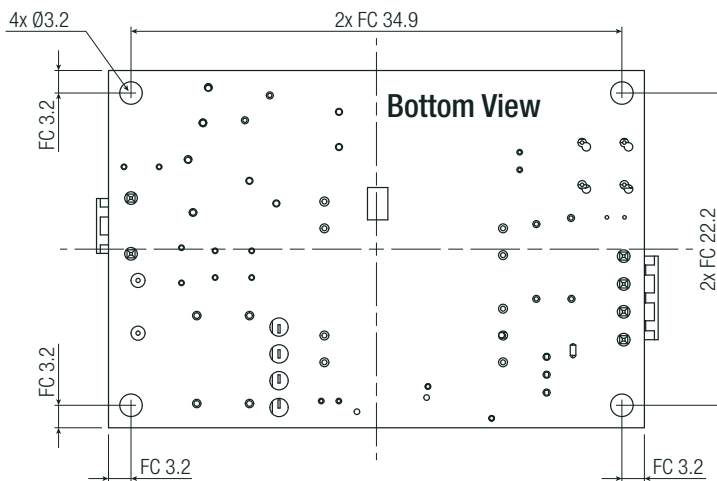
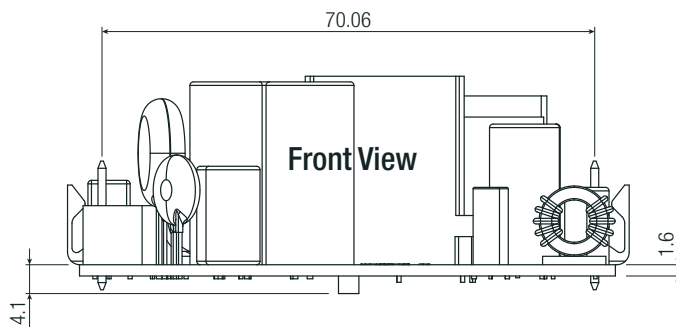
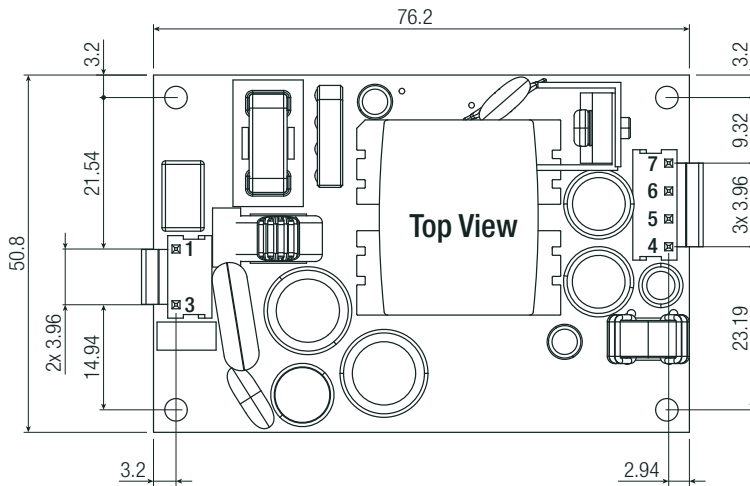
| Dimension range | Tolerances |
|-----------------|------------|
| 0.5 - 6 mm      | ±0.1 mm    |
| 6 - 30 mm       | ±0.2 mm    |
| 30 - 120 mm     | ±0.3 mm    |
| 120 - 400 mm    | ±0.5 mm    |

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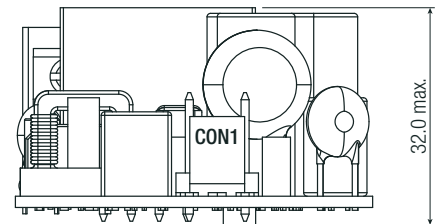


**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

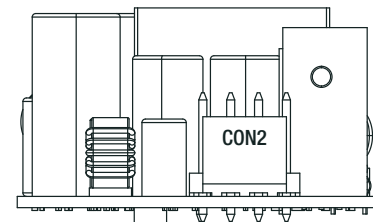
Dimension Drawing "277/0F" (mm)



AC Input Side View



DC Output Side View



### Connector Information

| #                       | Function   | Terminal              |
|-------------------------|------------|-----------------------|
| <b>AC Input (CON1)</b>  |            |                       |
| 1                       | VAC in (N) | 3 Pins (Pin2 removed) |
| 3                       | VAC in (L) | with 3.96mm pitch     |
| <b>DC Output (CON2)</b> |            |                       |
| 4,5                     | -VDC out   | 4 Pins                |
| 6,7                     | +VDC out   | with 3.96mm pitch     |

FC= fixing centers

### Compatible Connector

#### Housing

Molex 41695 Series or equivalent

#### Crimp Terminal

Molex 2478 Series or equivalent

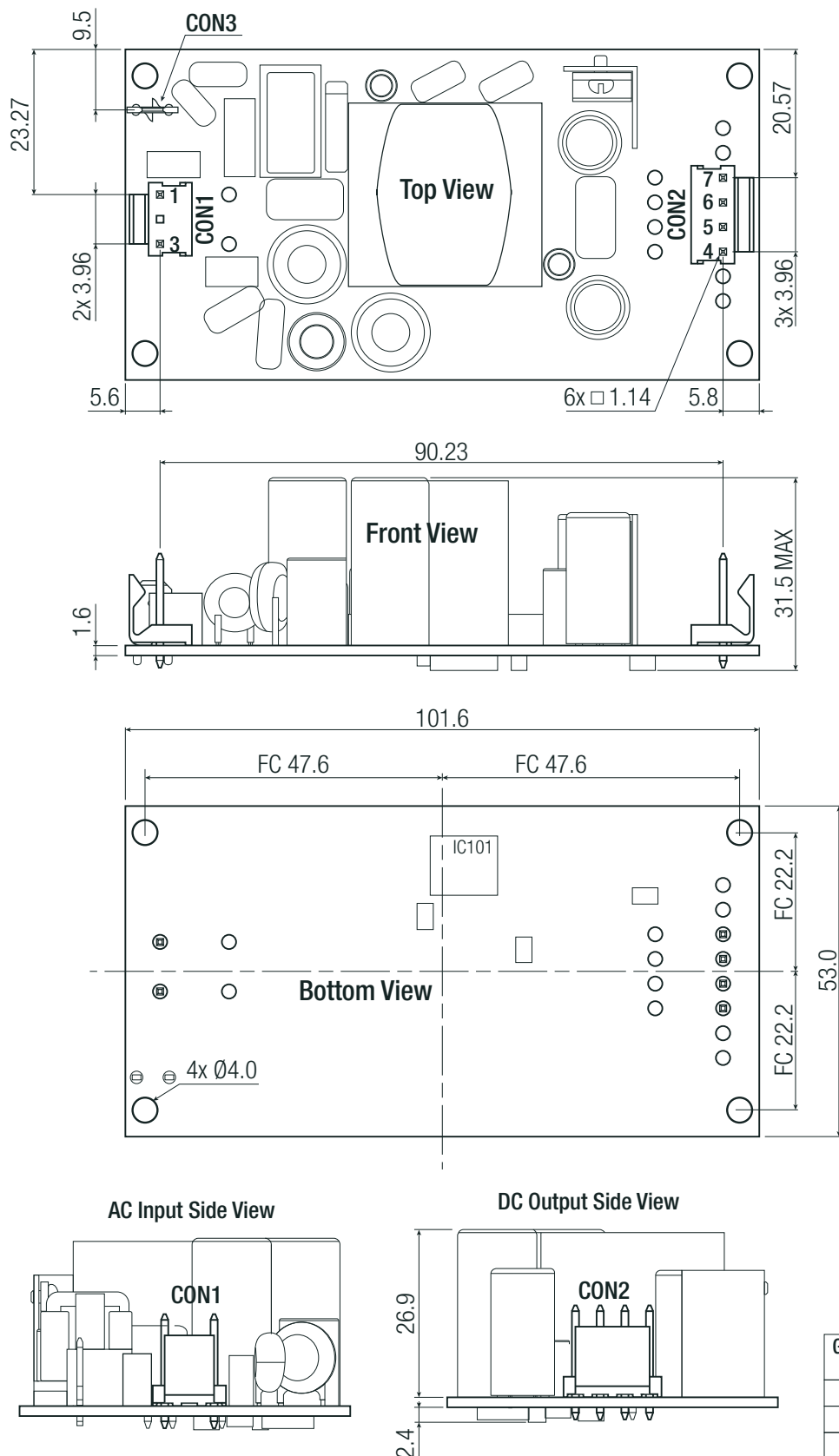
### General tolerances according to ISO 2768-m (table for reference only)

| Dimension range | Tolerances |
|-----------------|------------|
| 0.5 - 6 mm      | ±0.1 mm    |
| 6 - 30 mm       | ±0.2 mm    |
| 30 - 120 mm     | ±0.3 mm    |
| 120 - 400 mm    | ±0.5 mm    |

continued on next page

**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

Dimension Drawing "/OF/2x4" (mm)



#### Connector Information

| #                       | Function         | Terminal              |
|-------------------------|------------------|-----------------------|
| <b>AC Input (CON1)</b>  |                  |                       |
| 1                       | VAC in (N)       | 3 Pins (Pin2 removed) |
| 3                       | VAC in (L)       | with 3.96mm pitch     |
| <b>DC Output (CON2)</b> |                  |                       |
| 4,5                     | -VDC out         | 4 Pins                |
| 6,7                     | +VDC out         | with 3.96mm pitch     |
| <b>FE (CON3)</b>        |                  |                       |
| 8                       | functional earth | fast on               |

FC= fixing centers  
Compatible connector please refer to "/OF" drawing)

#### Compatible Connector

##### Housing

Molex 41695 Series or equivalent

##### Crimp Terminal

Molex 2478 Series or equivalent

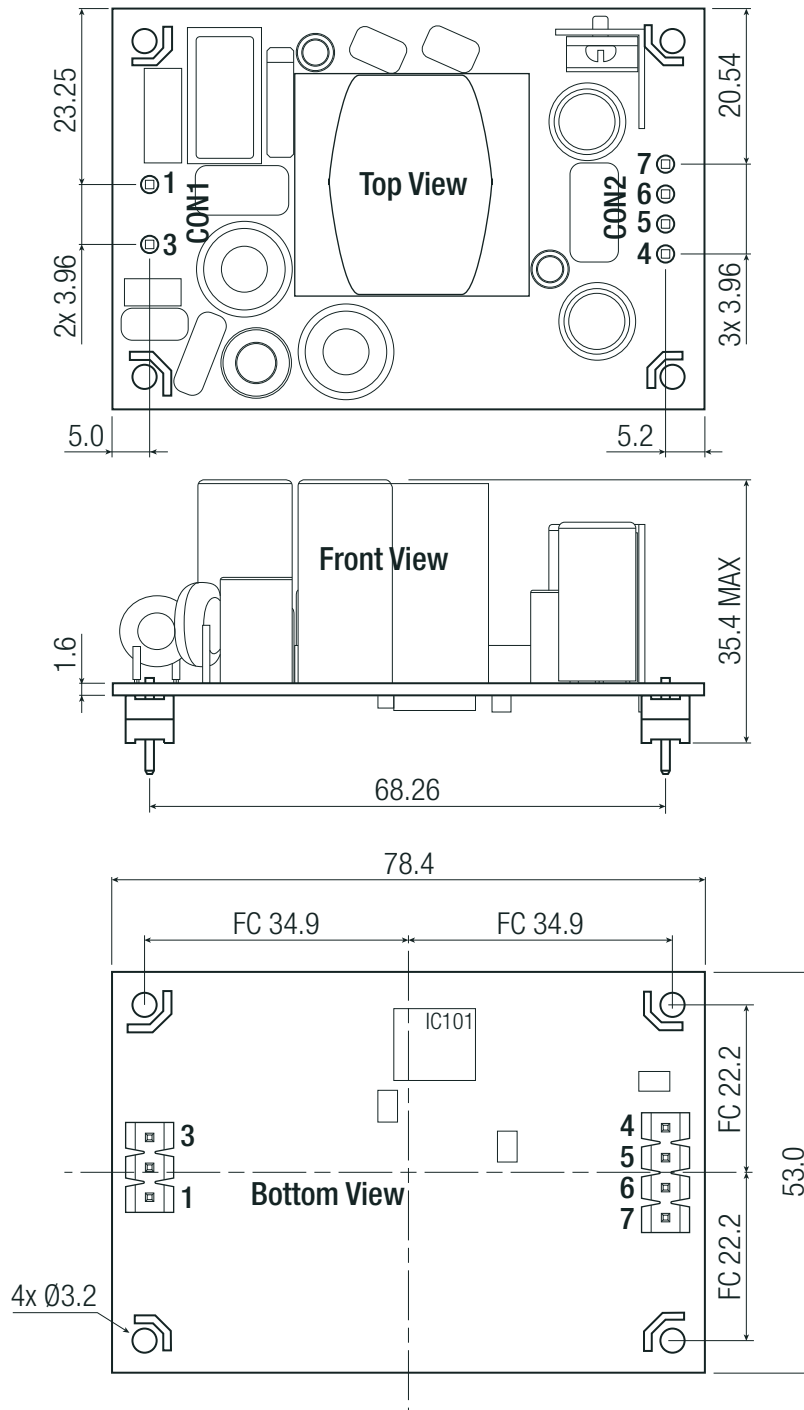
#### General tolerances according to ISO 2768-m (table for reference only)

| Dimension range | Tolerances |
|-----------------|------------|
| 0.5 - 6 mm      | ±0.1 mm    |
| 6 - 30 mm       | ±0.2 mm    |
| 30 - 120 mm     | ±0.3 mm    |
| 120 - 400 mm    | ±0.5 mm    |

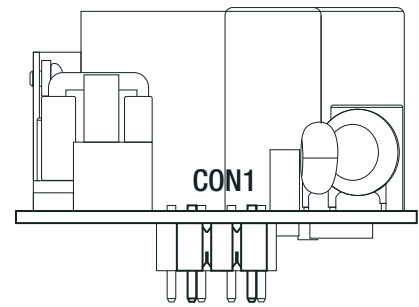
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**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

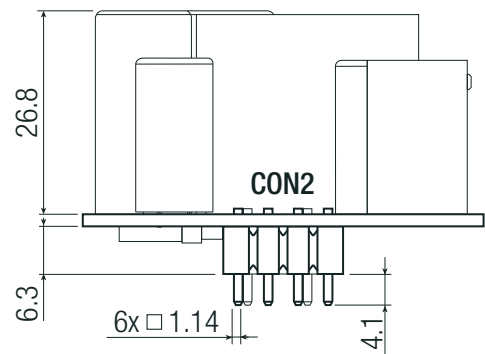
Dimension Drawing "/OF/PCB" (mm)



AC Input Side View



DC Output Side View



Pin-header Information

| #                       | Function   | Terminal              |
|-------------------------|------------|-----------------------|
| <b>AC Input (CON1)</b>  |            |                       |
| 1                       | VAC in (N) | 3 Pins (Pin2 removed) |
| 3                       | VAC in (L) | with 3.96mm pitch     |
| <b>DC Output (CON2)</b> |            |                       |
| 4,5                     | -VDC out   | 4 Pins                |
| 6,7                     | +VDC out   | with 3.96mm pitch     |

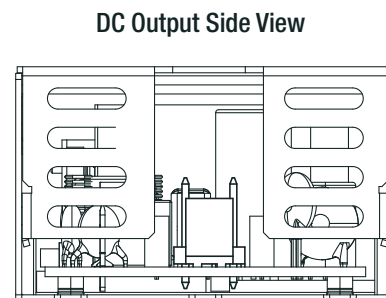
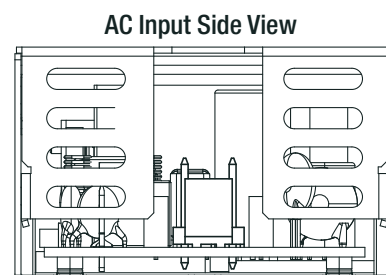
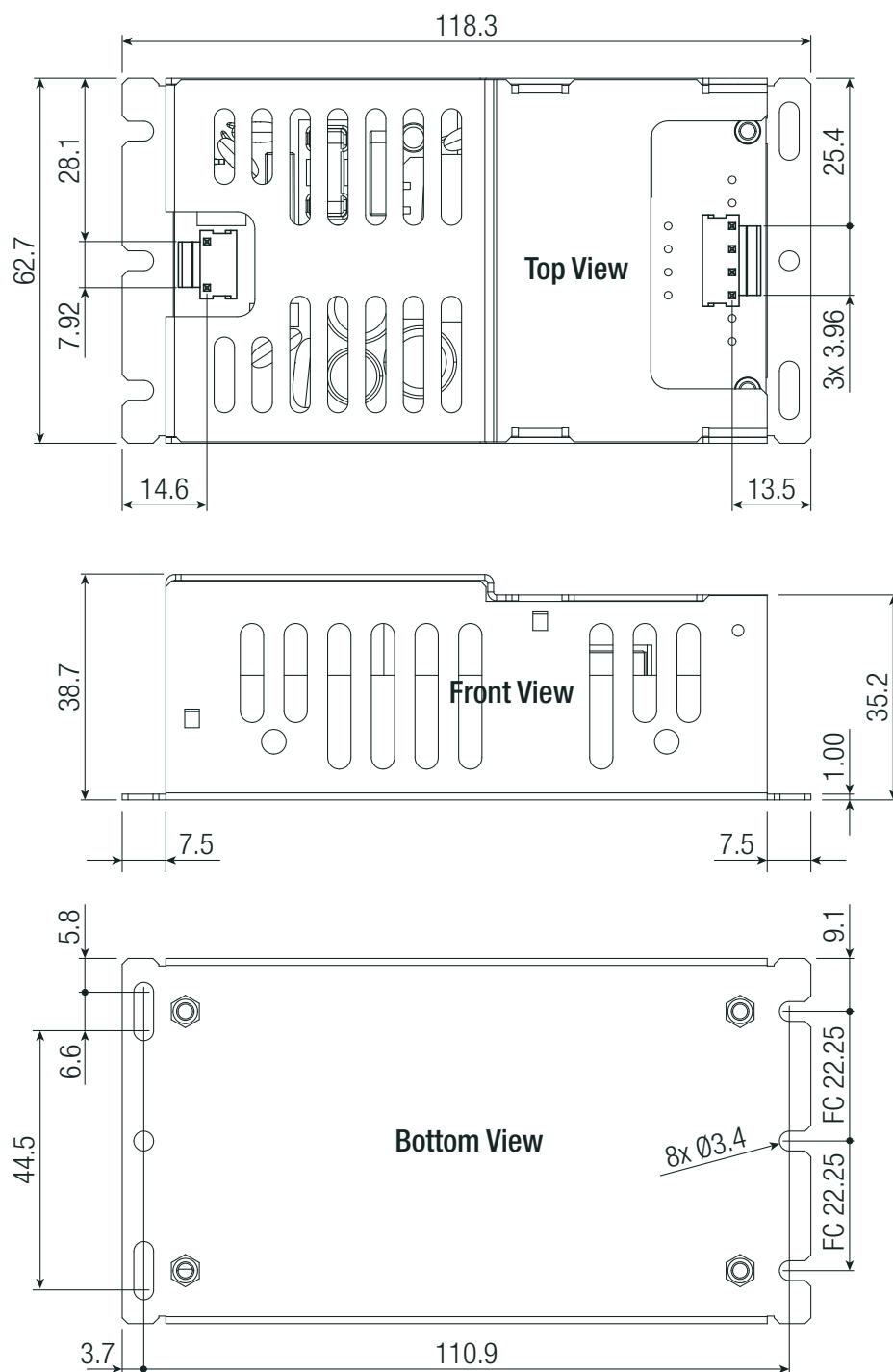
FC= fixing centers

General tolerances according to ISO 2768-m  
(table for reference only)

| Dimension range | Tolerances |
|-----------------|------------|
| 0.5 - 6 mm      | ±0.1 mm    |
| 6 - 30 mm       | ±0.2 mm    |
| 30 - 120 mm     | ±0.3 mm    |
| 120 - 400 mm    | ±0.5 mm    |

**Specifications** (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

Dimension Drawing “/ENC” (mm)



| General tolerances according to ISO 2768-m<br>(table for reference only) |            |
|--------------------------------------------------------------------------|------------|
| Dimension range                                                          | Tolerances |
| 0.5 - 6 mm                                                               | ±0.1 mm    |
| 6 - 30 mm                                                                | ±0.2 mm    |
| 30 - 120 mm                                                              | ±0.3 mm    |
| 120 - 400 mm                                                             | ±0.5 mm    |

#### Connector Information

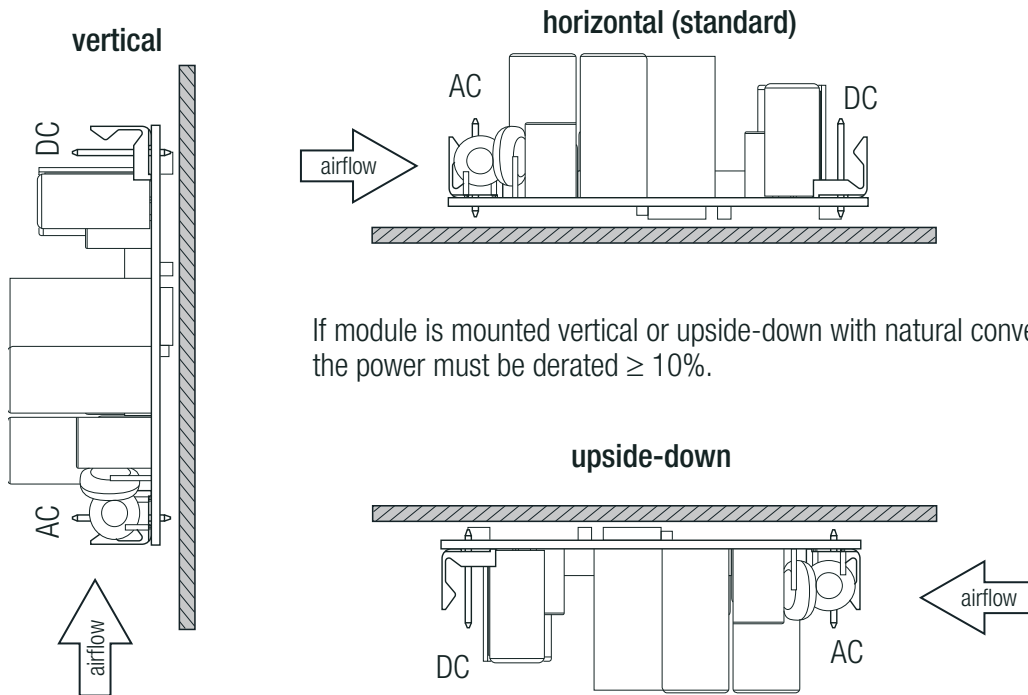
| #                       | Function   | Terminal              |
|-------------------------|------------|-----------------------|
| <b>AC Input (CON1)</b>  |            |                       |
| 1                       | VAC in (N) | 3 Pins (Pin2 removed) |
| 3                       | VAC in (L) | with 3.96mm pitch     |
| <b>DC Output (CON2)</b> |            |                       |
| 4,5                     | -VDC out   | 4 Pins                |
| 6,7                     | +VDC out   | with 3.96mm pitch     |

FC= fixing centers

**Specifications** (measured @  $T_a = 25^\circ\text{C}$ , nom.  $V_{in}$ , full load and after warm-up unless otherwise stated)

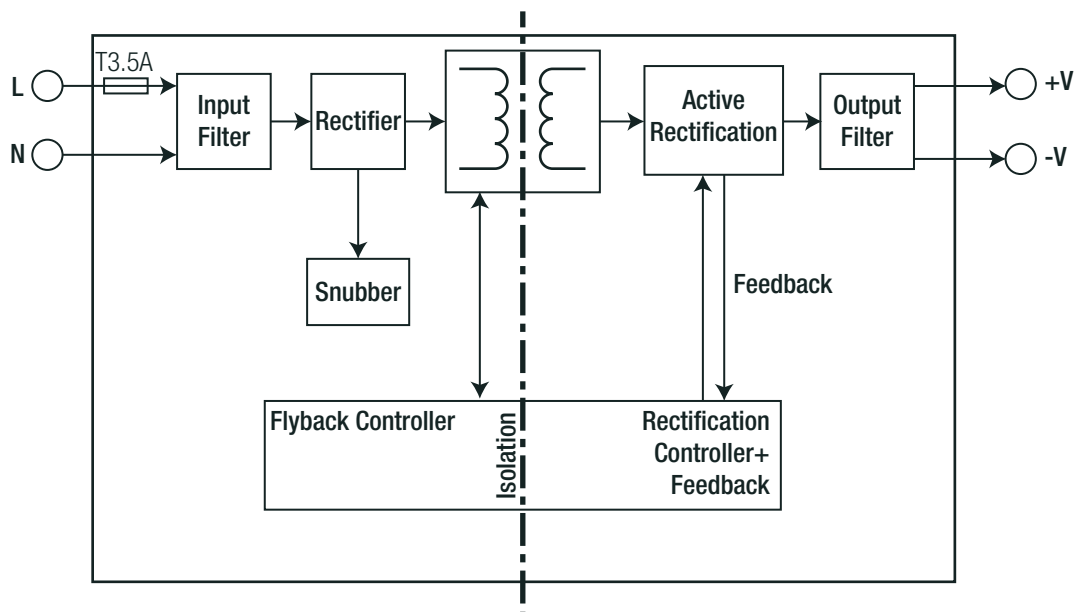
## APPLICATION AND INSTALLATION

### Mounting



If module is mounted vertical or upside-down with natural convection cooling, the power must be derated  $\geq 10\%$ .

### Blockdiagram (“/OF”, “/277/OF” and “/OF/PCB”)

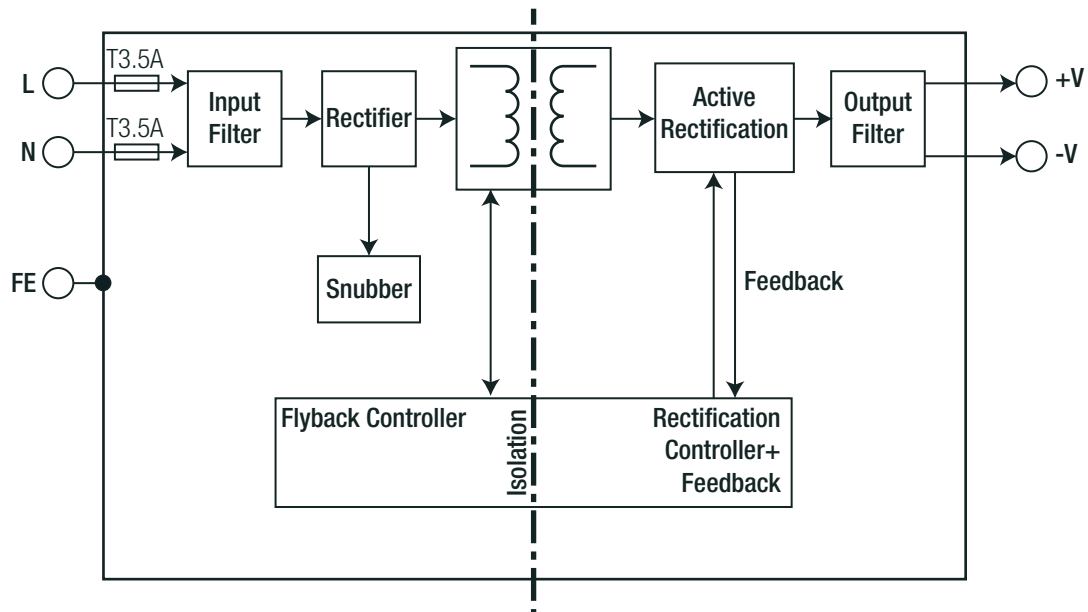


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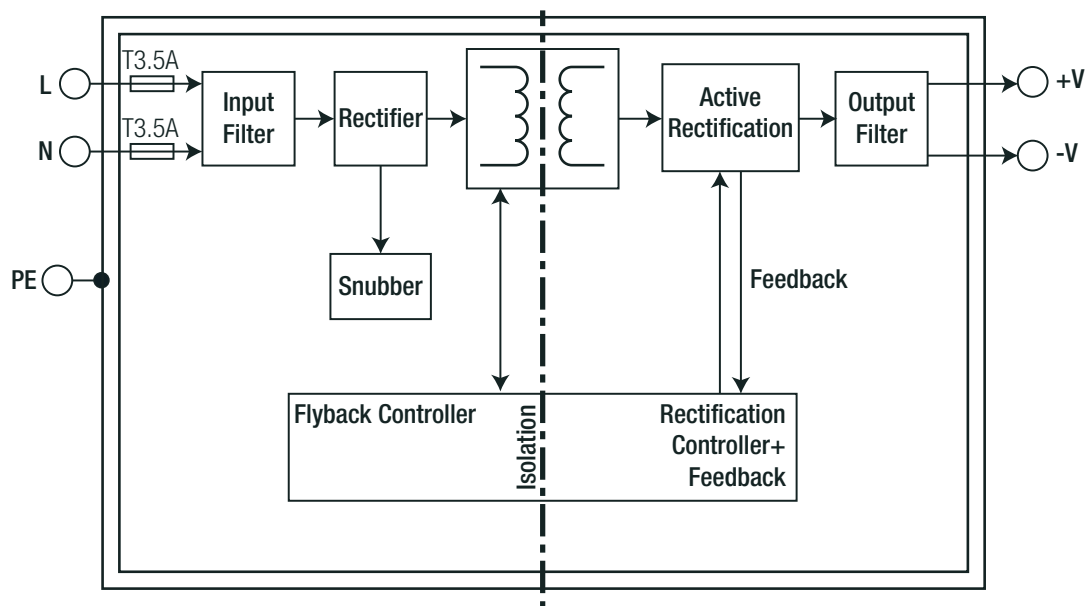
**Specifications** (measured @  $T_a = 25^\circ\text{C}$ , nom.  $V_{in}$ , full load and after warm-up unless otherwise stated)

## APPLICATION AND INSTALLATION

Blockdiagram (“/OF/2x4”)



Blockdiagram (“/ENC/2x4”)



### Specifications (measured @ Ta= 25°C, nom. Vin, full load and after warm-up unless otherwise stated)

#### PACKAGING INFORMATION

| Parameter                   | Type                             |                               | Value                   |
|-----------------------------|----------------------------------|-------------------------------|-------------------------|
| Packaging Dimension (LxWxH) | "/OF" type                       | cardboard box (single pack)   | 65.0 x 55.0 x 95.0mm    |
|                             | "/OF/2x4" type                   |                               | 65.0 x 50.0 x 110.0mm   |
|                             | "/277/OF-T" type                 | single tray (carton)          | 215.0 x 365.0 x 62.0mm  |
|                             | "/OF/PCB-T" type                 |                               | 365.0 x 210.0 x 56.0mm  |
|                             | "/ENC/2x4" type                  |                               | 405.0 x 360.0 x 85.0mm  |
|                             | "/OF-CTN" type                   | tray in carton (project pack) | 375.0 x 220.0 x 245.0mm |
| Package Unit                | "/OF" type and "/OF/2x4" type    |                               | 1pcs                    |
|                             | "/277/OF-T" and "/OF/PCB-T" type |                               | 12pcs                   |
|                             | "/ENC/2x4" type                  |                               | 18pcs                   |
|                             | "/OF-CTN" type, MOQ= 1152pcs     |                               | 48pcs                   |
| Storage Temperature Range   |                                  |                               | -40°C to +90°C          |
| Storage Humidity            | non-condensing                   |                               | 95% max.                |

#### ORDERING EXAMPLE

| Model-number         | Output Voltage | Input Range | Size    | Type       | Connection         | Quantity             | Packaging Type |
|----------------------|----------------|-------------|---------|------------|--------------------|----------------------|----------------|
| RACM60-05SK/OF       | 5Vout          | 80-264VAC   | 2" x 3" | open frame | standard connector | 1pc                  | cardboard box  |
| RACM60-24SK/OF/PCB-T | 24Vout         | 80-264VAC   | 2" x 3" | open frame | PCB mounting pins  | 12pcs                | tray           |
| RACM60-12SK/OF/2x4   | 12Vout         | 80-264VAC   | 2" x 4" | open frame | standard connector | 1pc                  | cardboard box  |
| RACM60-05SK/277/OF-T | 5Vout          | 80-305VAC   | 2" x 3" | open frame | standard connector | 12pcs                | tray           |
| RACM60-24SK/ENC/2x4  | 24Vout         | 80-264VAC   | 2" x 4" | enclosed   | standard connector | 18pcs                | tray           |
| RACM60-12SK/OF-CTN   | 12Vout         | 80-264VAC   | 2" x 4" | open frame | standard connector | 48pcs (MOQ= 1152pcs) | carton         |

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