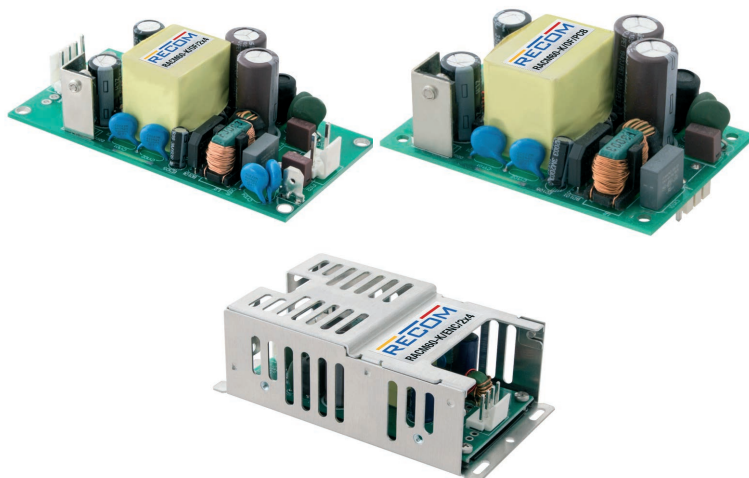


# RACM60-K Series ▾ AC/DC Power Supply

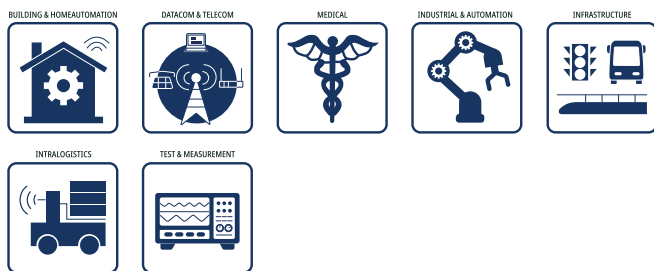
## 60W ▾ Input: 100V-240VAC or 100V-277VAC

### FEATURES

- 2"x3" & 2"x4" Open Frame, 2"x4" Enclosed
- Temperature rang: -40 to +85°C with derating
- Over voltage category OVC III
- 2MOPP medical certified
- Class B EMC filter built-in
- 2000/5000m (medical/ITE) operating altitude
- 3 year warranty



### APPLICATIONS



### SAFETY & EMC



### 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 ES60601-1 medical safety and EN 60601-1-2 medical EMC certifications and offers 4kVAC/1 min isolation, 2MOPP. 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                      | Operating Input Range [VAC] | Output Voltage nom. [VDC] | Output Current nom. [mA] | Efficiency typ. <sup>(1)</sup> [%] | Output Power continuous [W] |
|----------------------------------|-----------------------------|---------------------------|--------------------------|------------------------------------|-----------------------------|
| RACM60-05SK <sup>(3, 4, 5)</sup> | 80-264 / 80-305             | 5                         | 8000                     | 89                                 | 40                          |
| RACM60-12SK <sup>(3, 4, 5)</sup> | 80-264 / 80-305             | 12                        | 5000                     | 90                                 | 60                          |
| RACM60-15SK <sup>(3, 4, 5)</sup> | 80-264 / 80-305             | 15                        | 4000                     | 90                                 | 60                          |
| RACM60-24SK <sup>(3, 4, 5)</sup> | 80-264 / 80-305             | 24                        | 2500                     | 90                                 | 60                          |
| RACM60-36SK <sup>(3, 4)</sup>    | 80-264                      | 36                        | 1667                     | 90                                 | 60                          |
| RACM60-48SK <sup>(3, 4, 5)</sup> | 80-264 / 80-305             | 48                        | 1250                     | 90                                 | 60                          |

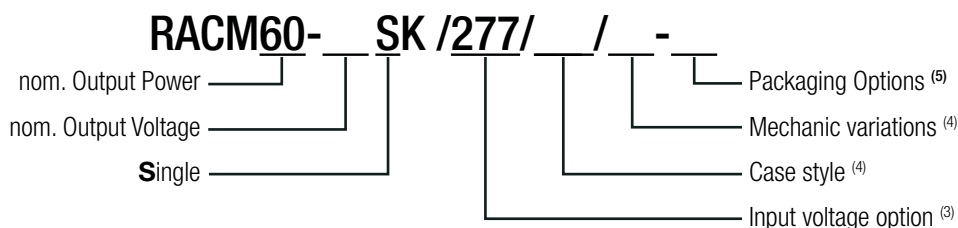
Note1: Efficiency is tested at nominal input (230VAC) and full load at +25°C ambient

Note2: Measured @ T<sub>AMB</sub> = 25°C, nom. V<sub>IN</sub>, full load and after warm-up unless otherwise stated

# RACM60-K Series ◇ AC/DC Power Supply

## 60W ◇ Input: 100V-240VAC or 100V-277VAC

### MODEL NUMBERING



Note3: Add suffix "/277/OF" for wider input voltage range (80-305VAC)

Without suffix= standard input range (80-264VAC), check „ORDERING INFORMATION (5)“

For more information, refer to „Input Voltage Range (6, 7)“

Note4: "/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)

Note5: for packaging details refer to last page „PACKAGING INFORMATION“

### ORDERING INFORMATION (5)

| 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

### BASIC CHARACTERISTICS (measured @ T<sub>AMB</sub>= 25°C, nom. V<sub>IN</sub>, full load and after warm-up unless otherwise stated)

| 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 (6, 7)                              | standard version                                                                 | 47-63Hz<br>DC                                                                    | 80VAC<br>120VDC    |                | 264VAC<br>370VAC         |
|                                                         | "/277" version                                                                   | 47-63Hz<br>DC                                                                    | 80VAC<br>120VDC    |                | 305VAC<br>430VAC         |
| Input Current                                           | V <sub>IN</sub> = 115VAC<br>V <sub>IN</sub> = 230VAC<br>V <sub>IN</sub> = 277VAC |                                                                                  |                    |                | 1400mA<br>600mA<br>500mA |
| Inrush Current                                          | cold start at 25°C                                                               | V <sub>IN</sub> = 115VAC<br>V <sub>IN</sub> = 230VAC<br>V <sub>IN</sub> = 277VAC |                    |                | 30A<br>60A<br>70A        |
| ErP Standby Mode Conformity<br>(Output Load Capability) | V <sub>IN</sub> = 115/230/277VAC                                                 | Input Power:                                                                     | 0.5W<br>1.0W       | 0.3W<br>0.7W   |                          |
| No Load Power Consumption                               | V <sub>IN</sub> = 230VAC<br>V <sub>IN</sub> = 277VAC                             |                                                                                  |                    | 100mW<br>120mW |                          |
| Input Frequency Range                                   | AC Input                                                                         |                                                                                  | 47Hz               |                | 63Hz                     |
| Minimum Load                                            |                                                                                  |                                                                                  | 0%                 |                |                          |
| Power Factor                                            | V <sub>IN</sub> = 115VAC<br>V <sub>IN</sub> = 230VAC<br>V <sub>IN</sub> = 277VAC |                                                                                  | 0.6<br>0.5<br>0.45 |                |                          |
| Start-up time                                           |                                                                                  |                                                                                  |                    | 150ms          |                          |
| Rise time                                               | V <sub>IN</sub> = 115VAC<br>V <sub>IN</sub> = 230VAC<br>V <sub>IN</sub> = 277VAC |                                                                                  |                    | 100ms          |                          |

# RACM60-K Series ◇ AC/DC Power Supply

## 60W ◇ Input: 100V-240VAC or 100V-277VAC

**BASIC CHARACTERISTICS** (measured @  $T_{AMB} = 25^{\circ}\text{C}$ , nom.  $V_{IN}$ , full load and after warm-up unless otherwise stated)

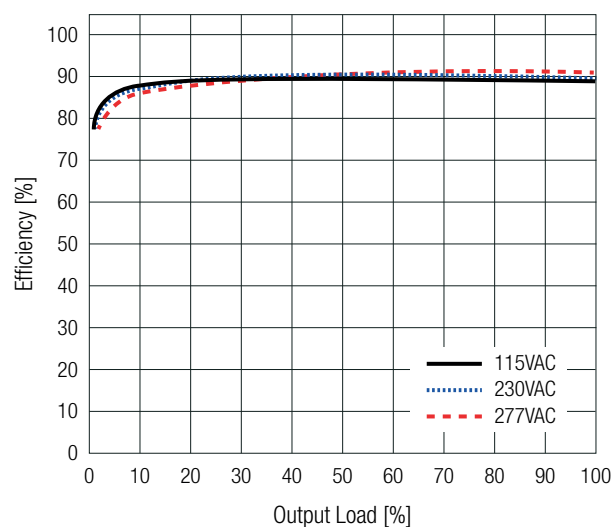
| Parameter                              | Condition                     |                 | Min. | Typ.   | Max.                   |
|----------------------------------------|-------------------------------|-----------------|------|--------|------------------------|
| Hold-up time                           | $V_{IN} = 115\text{VAC}$      |                 | 12ms |        |                        |
|                                        | $V_{IN} = 230\text{VAC}$      |                 | 50ms |        |                        |
|                                        | $V_{IN} = 277\text{VAC}$      |                 | 70ms |        |                        |
| Internal Operating Frequency           | 100% load at nominal $V_{IN}$ |                 |      | 100kHz |                        |
| Output Ripple and Noise <sup>(8)</sup> | 20MHz BW                      | 5Vout<br>others |      |        | 200mVp-p<br>1% of Vout |

Note6: The products were submitted for safety files at AC-Input operation (90-264VAC)

Note7: Output power derating for Line-input of less than 90VAC (derate linearly from 100% at 90VAC to 80% at 80VAC)

Note8: Measurements are made with a 0.1  $\mu\text{F}$  MLCC & 10  $\mu\text{F}$  E-cap in parallel across output. (low ESR)

### Efficiency vs. Load


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

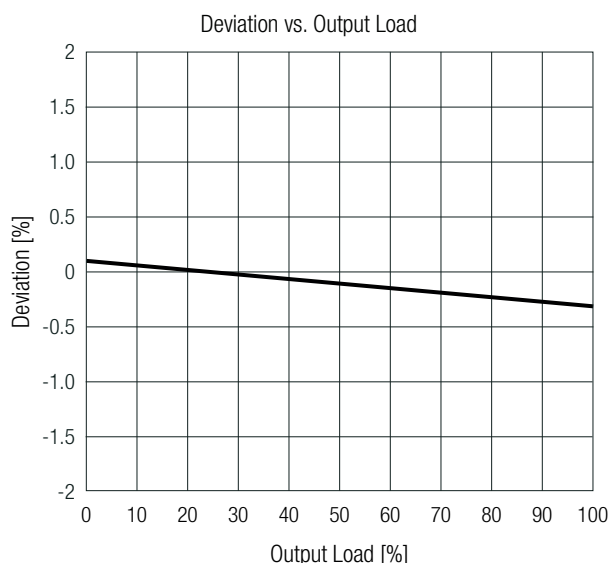
| Parameter                      | Condition            |                  |                       | Value       |
|--------------------------------|----------------------|------------------|-----------------------|-------------|
| Output Accuracy                | standard version     |                  | 100% load             | ±2.0% typ.  |
|                                | “/277” version       |                  | 5Vout                 | ±3.0% typ.  |
|                                |                      |                  | others                | ±1.0% typ.  |
| Line Regulation                | standard version     |                  | low line to high line | ±0.05% typ. |
|                                | “/277” version       |                  | 5Vout                 | ±0.5% typ.  |
|                                |                      |                  | others                | ±0.05% typ. |
| Load Regulation <sup>(9)</sup> | standard version     | 10% to 100% load | 5VDC                  | ±1.5% typ.  |
|                                |                      |                  | 12VDC, 15VDC          | ±0.5% typ.  |
|                                |                      |                  | 24VDC, 36VDC, 48VDC   | ±0.1% typ.  |
|                                | “/277” version       | 10% to 100% load | 5VDC                  | ±3.0% typ.  |
|                                |                      |                  | 12VDC, 15VDC          | ±0.8% typ.  |
|                                |                      |                  | 24VDC, 36VDC, 48VDC   | ±0.2% typ.  |
| Transient Response             | 25% load step change |                  |                       | 3.0% max.   |
|                                | recovery time        |                  |                       | 500μs typ.  |

Note9: Operation below 10% load will not harm the converter, but specifications may not be met

# RACM60-K Series ◇ AC/DC Power Supply

## 60W ◇ Input: 100V-240VAC or 100V-277VAC

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



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

| 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>(10)</sup>          | according to 62368-1, 61558-2-16, 60335-1, 60601-1 |                                              | OVC II (up to 5000m)            |
|                                                      | according to 61558-2-16                            |                                              | OVC III (up to 2000m)           |
| Over Current Protection (OCP)                        |                                                    |                                              | 130% - 180%, hiccup mode        |
| Thermal Shutdown                                     | TC point IC 101                                    |                                              | +130°C, restart after cool down |
| Class of Equipment                                   |                                                    |                                              | Class II                        |
| Isolation Voltage (safety certified) <sup>(11)</sup> | 1 minute                                           | I/P to O/P; according to 61558-2-16, 60601-1 | 4.2kVAC                         |
| Isolation Resistance                                 | I/P to O/P, $V_{ISO} = 500\text{VDC}$              |                                              | 1GΩ min.                        |
| Isolation Capacitance                                | I/P to O/P, 100kHz/0.1V                            |                                              | 100pF max.                      |
| Insulation Grade                                     |                                                    |                                              | reinforced                      |
| Means of Protection                                  | 319VAC working voltage                             |                                              | 2MOPP                           |

Note10: RACM60-xxK/277/OF models were submitted to safety agency for OVC III rating.

Note11: For repeat Hi-Pot testing, reduce the time and/or the test voltage

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

| Parameter                          | Condition                                                       |                                 | Value                        |
|------------------------------------|-----------------------------------------------------------------|---------------------------------|------------------------------|
| Operating Temperature Range        | @ natural convection (0.1m/s)                                   | refer to <b>graphs below</b>    | -40°C to +85°C               |
| Temperature Coefficient            |                                                                 |                                 | ±0.02%/K                     |
| Operating Altitude <sup>(12)</sup> | according to 62368-1, 61558-2-16, 60335-1, 60601-1              |                                 | 5000m (OVC II)               |
|                                    | according to 61558-2-16                                         |                                 | 2000m (OVC III)              |
| Operating Humidity                 | non-condensing                                                  |                                 | 95% max.                     |
| Pollution Degree (PD)              | safety report (UL/EN...)                                        |                                 | PD2                          |
| Vibration                          | 10-500Hz, 2G 10min./1cycle, period 60min. each along x,y,z axes |                                 | according to MIL-STD-202G    |
| MTBF                               | according to MIL-HDBK-217, G.B.                                 | $T_{AMB} = +25^{\circ}\text{C}$ | >900 x 10 <sup>3</sup> hours |
|                                    |                                                                 | $T_{AMB} = +40^{\circ}\text{C}$ | >726 x 10 <sup>3</sup> hours |
| Design Lifetime                    | nom. $V_{IN} = 230\text{VAC}$                                   | $T_{AMB} = +40^{\circ}\text{C}$ | >42 x 10 <sup>3</sup> hours  |

Note12: 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

# RACM60-K Series ◇ AC/DC Power Supply

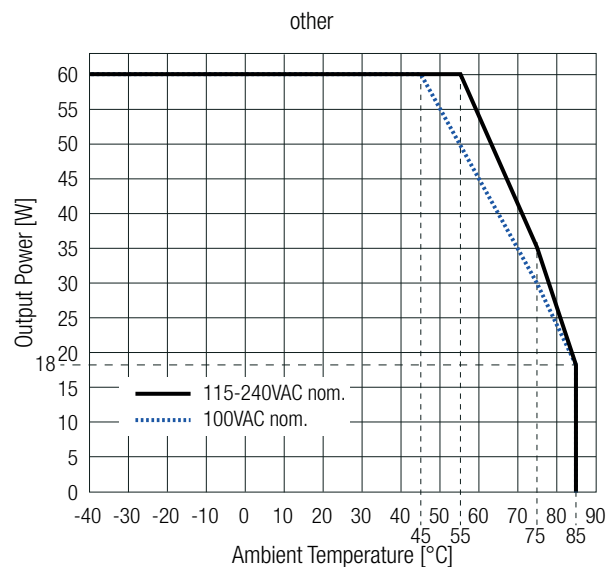
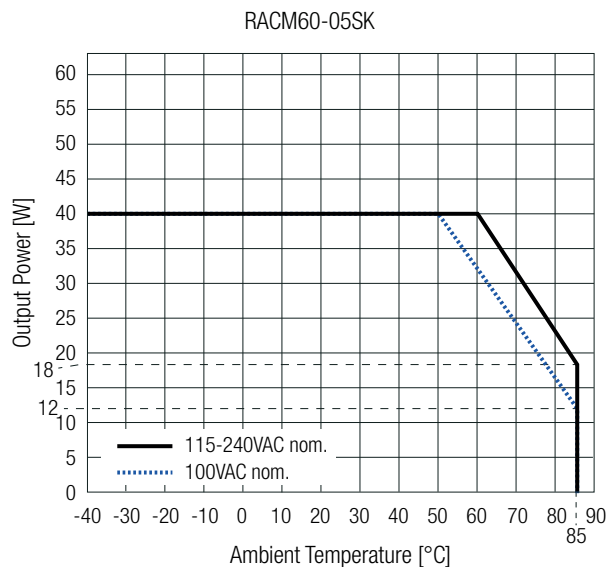
## 60W ◇ Input: 100V-240VAC or 100V-277VAC

ENVIRONMENTAL (measured @  $T_{AMB} = 25^{\circ}\text{C}$ , nom.  $V_{IN}$ , full load and after warm-up unless otherwise stated)

### Derating Graph non-/277/OF Versions

(@ Chamber and natural convection 0.1m/s)

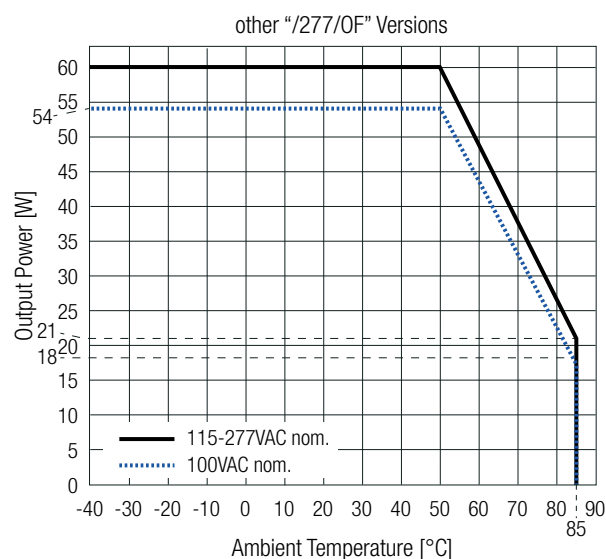
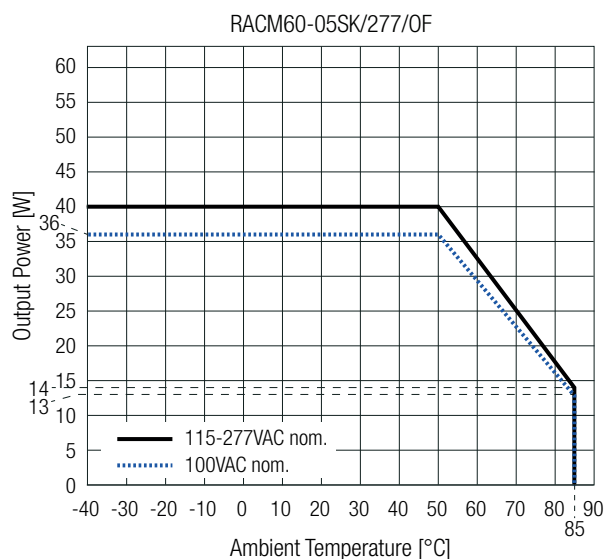
Output power derating for line-input of less than 90VAC (derate linearly from 100% at 90VAC to 80% at 80VAC)



### Derating Graph “/277/OF” 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)



# RACM60-K Series ◇ AC/DC Power Supply

## 60W ◇ Input: 100V-240VAC or 100V-277VAC

### SAFETY & CERTIFICATIONS

| Certificate Type (Safety)                                                                                                                                                              | Report Number                                                                                                                                                                    | Standard                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Medical electrical equipment Part 1: General requirements for basic safety and essential performance                                                                                   | E511305-D6004-UL                                                                                                                                                                 | CAN/CSA-C22.2 No. 60601-1:14, Edition 3.2<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                    |
| Standard for Class 2 Power Units (TÜV)                                                                                                                                                 | (RACM60-12SK/OF, RACM60-24SK/OF only)                                                                                                                                            | UL1310:2018 + R:2020-06                                                               |
| Safety of power transformers, power supplies, reactors & similar products for supply voltages up to 1100 V (CB Scheme)                                                                 | 50355750 001<br>(except "/277/OF" & "/ENC/2x4")                                                                                                                                  | 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)                                 |                                                                                                                                                                                  | 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<br>(except "/277/OF" & "/ENC/2x4")                                                                                                                                  | 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                                             |                                                                                                                                                                                  | 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<br>(OVC III)                                                                                                                                                   | 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)                               |                                                                                                                                                                                  | 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<br>(OVC III)                                                                                                                                                  | 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                                           |                                                                                                                                                                                  | EN61558-2-16:2009 + A1:2013                                                           |
| 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: ±2, 4, 8, 15kV<br>Contact: ±2, 4, 8kV                                                                                                                                       | 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                                                                                                                                                                           | 100% (0.5P 1.0P), 30%                                                                                                                                                            | EN61000-4-11:2004, Criteria B                                                         |
| Voltage Interruptions                                                                                                                                                                  | 100%                                                                                                                                                                             | EN61000-4-11:2004, Criteria B                                                         |
| Limits of Voltage Fluctuations & Flicker                                                                                                                                               | LCS220321054BE                                                                                                                                                                   | EN61000-3-3:2013                                                                      |

# RACM60-K Series ◇ AC/DC Power Supply

## 60W ◇ Input: 100V-240VAC or 100V-277VAC

### SAFETY & CERTIFICATIONS

| EMC Compliance (EN55032)                                                      | Condition                                                                | Standard / Criterion                   |
|-------------------------------------------------------------------------------|--------------------------------------------------------------------------|----------------------------------------|
| 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%                                                               | EN61000-4-11:2004+A1:2017, Criteria B  |
|                                                                               | 30%                                                                      | EN61000-4-11:2004+A1:2017, Criteria C  |
| Limits of Voltage Fluctuations & Flicker                                      | Interruptions:100%                                                       | EN61000-4-11:2004+A1:2017, Criteria C  |
|                                                                               | LCS220321053BE                                                           | EN61000-3-3:2013                       |

| EMC Compliance (EN61204-3)                                                                                                                           | Condition                                                        | Standard / Criterion                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------|----------------------------------------|
| 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           |
| 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 |
| Limits of Voltage Fluctuations & Flicker                                                                                                             | Interruptions:100%                                               | EN61000-4-11:2004 +A1:2017, Criteria C |
|                                                                                                                                                      | 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 & PHYSICAL CHARACTERISTICS

| Parameter         | Type                                 | Value                 |
|-------------------|--------------------------------------|-----------------------|
| Material          | PCB                                  | FR4, (UL94 V-0)       |
| 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.             |

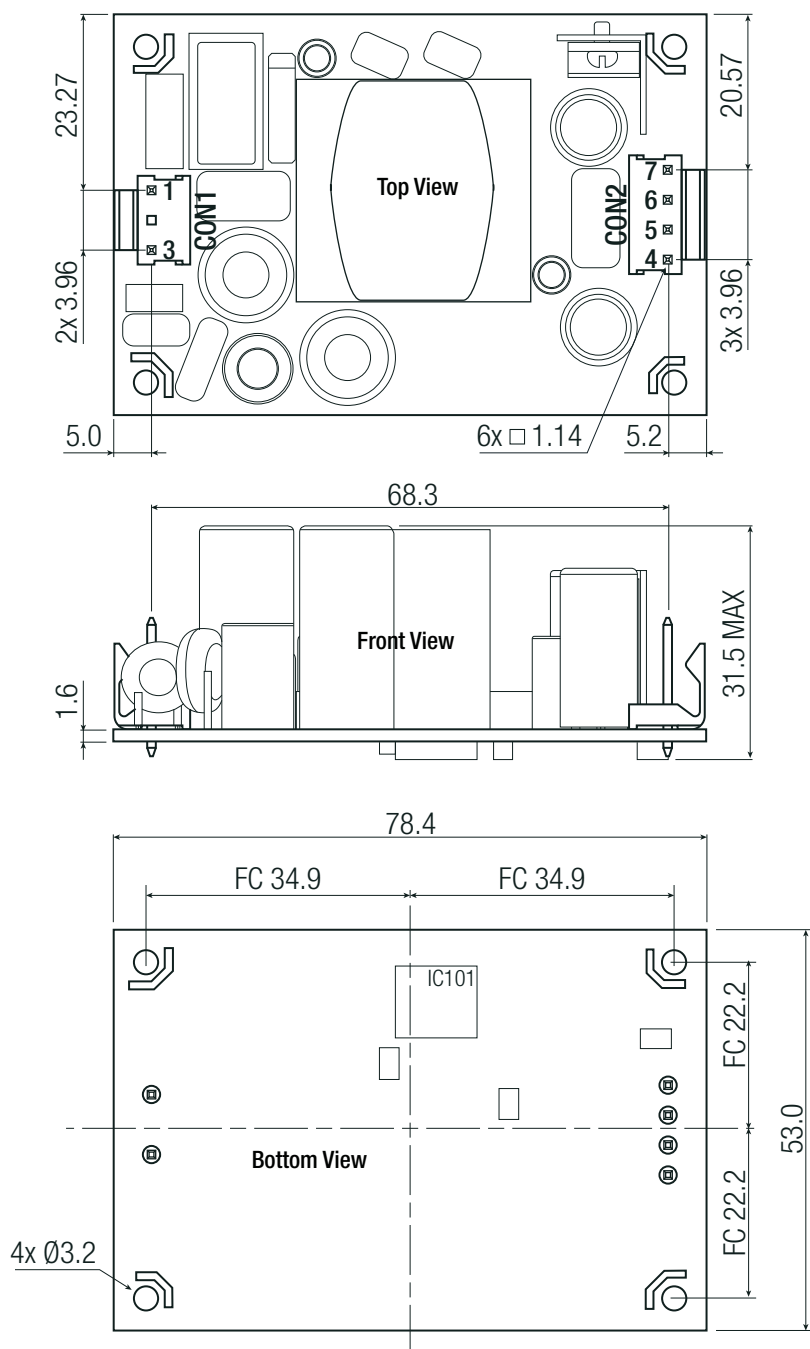
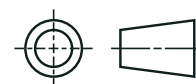


# RACM60-K Series ◇ AC/DC Power Supply

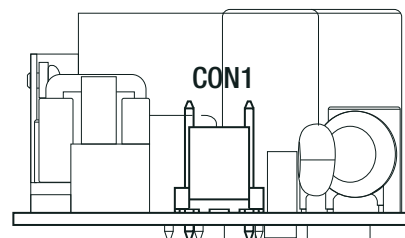
60W ◇ Input: 100V-240VAC or 100V-277VAC

## DIMENSION & PHYSICAL CHARACTERISTICS

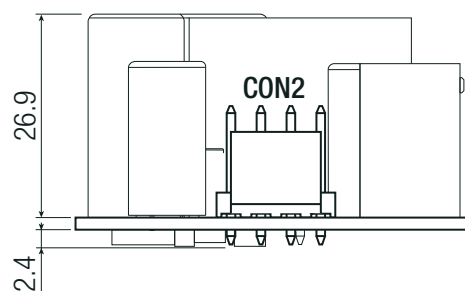
Dimension Drawing “/OF” (mm)



AC Input Side View



DC Output Side View



### Connector Information - SINGLE/DUAL

| #                                 | 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 Connector (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    |

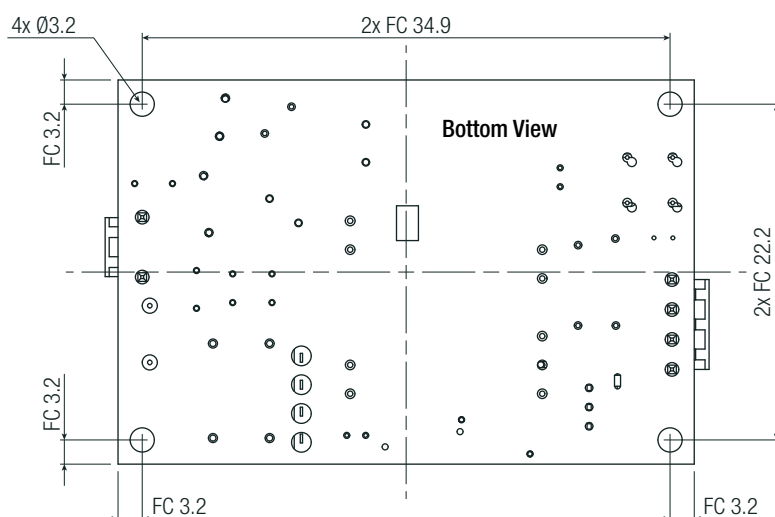
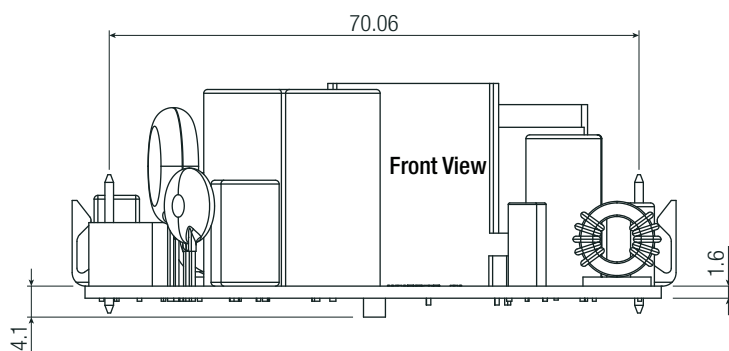
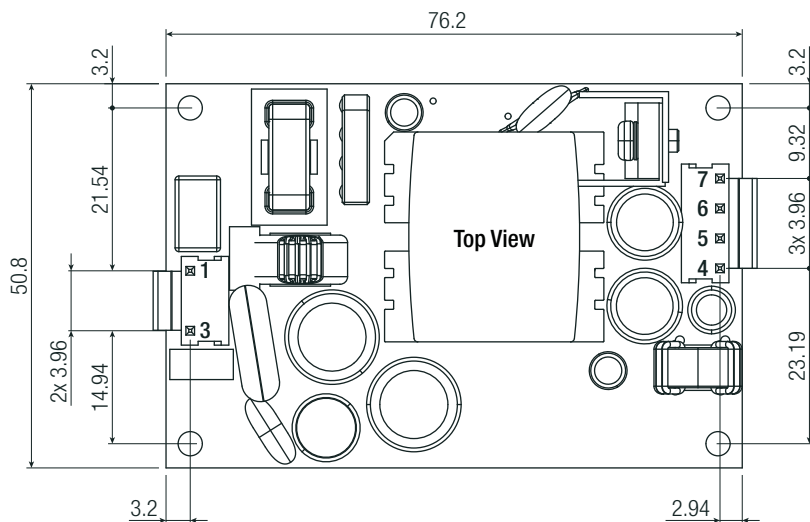


# RACM60-K Series ◇ AC/DC Power Supply

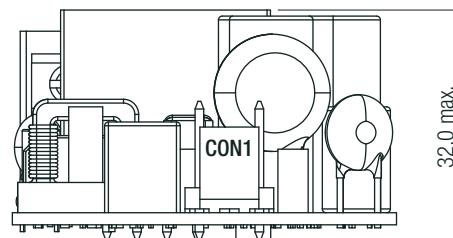
## 60W ◇ Input: 100V-240VAC or 100V-277VAC

### DIMENSION & PHYSICAL CHARACTERISTICS

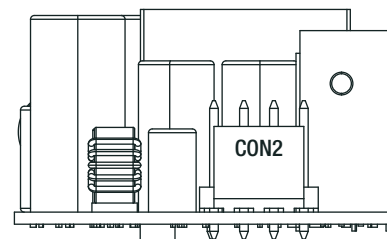
Dimension Drawing "/277/0F" (mm)



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)

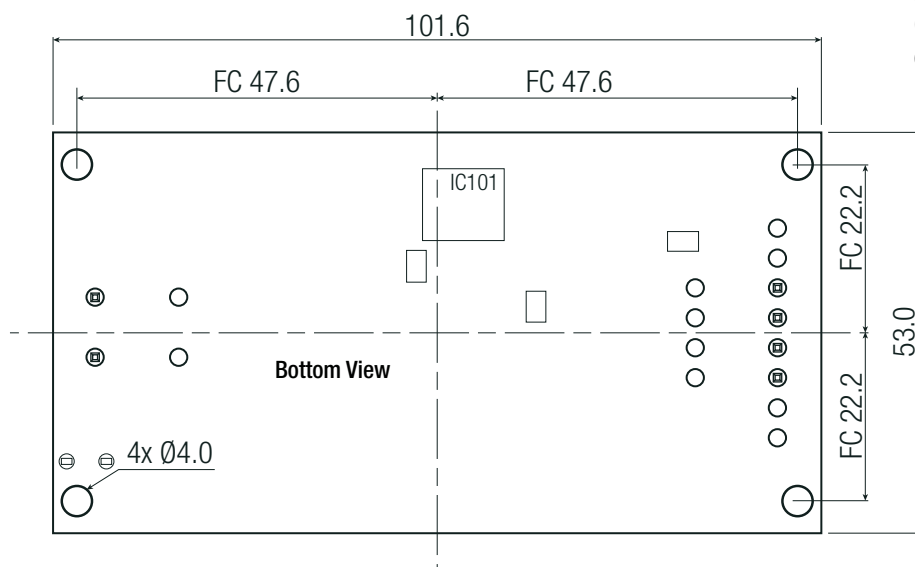
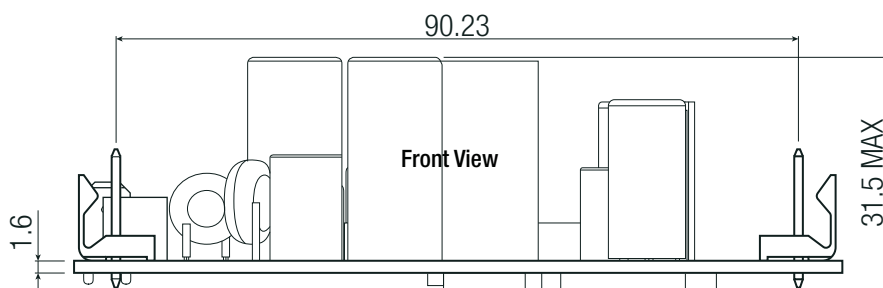
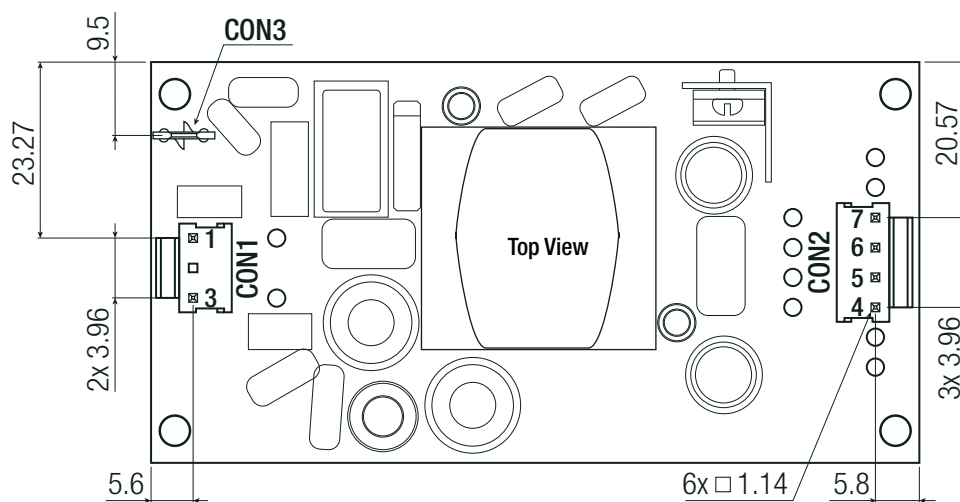
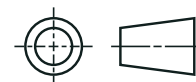
| Dimension range | Tolerances |
|-----------------|------------|
| 0.5 - 6 mm      | ±0.1 mm    |
| 6 - 30 mm       | ±0.2 mm    |
| 30 - 120 mm     | ±0.3 mm    |
| 120 - 400 mm    | ±0.5 mm    |

# RACM60-K Series ◇ AC/DC Power Supply

60W ◇ Input: 100V-240VAC or 100V-277VAC

## DIMENSION & PHYSICAL CHARACTERISTICS

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               |

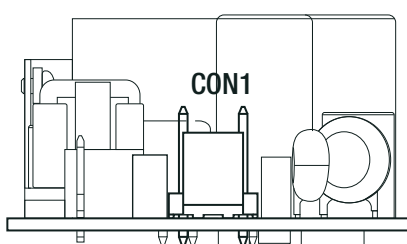
FC= fixing centers

Compatible connector please refer to "/OF" drawing

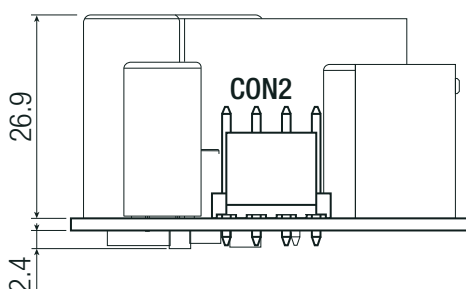
### Compatible Connector

|                                  |
|----------------------------------|
| <b>Housing</b>                   |
| Molex 41695 Series or equivalent |
| <b>Crimp Terminal</b>            |
| Molex 2478 Series or equivalent  |

AC Input Side



DC Output Side



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

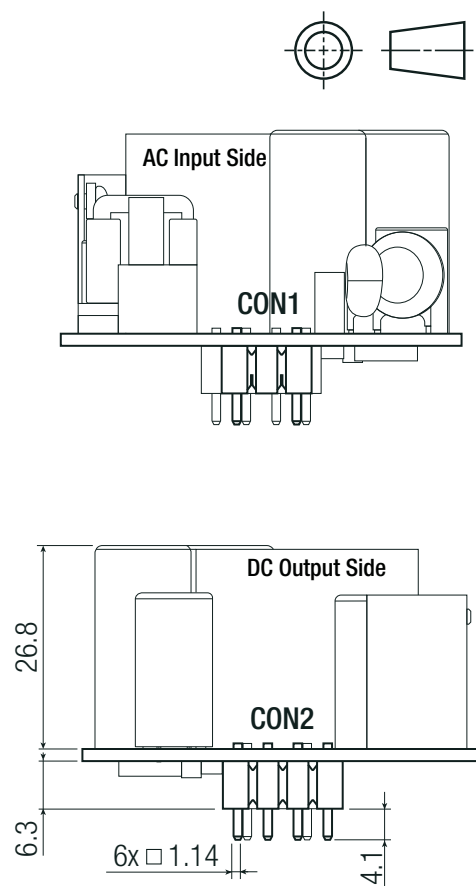
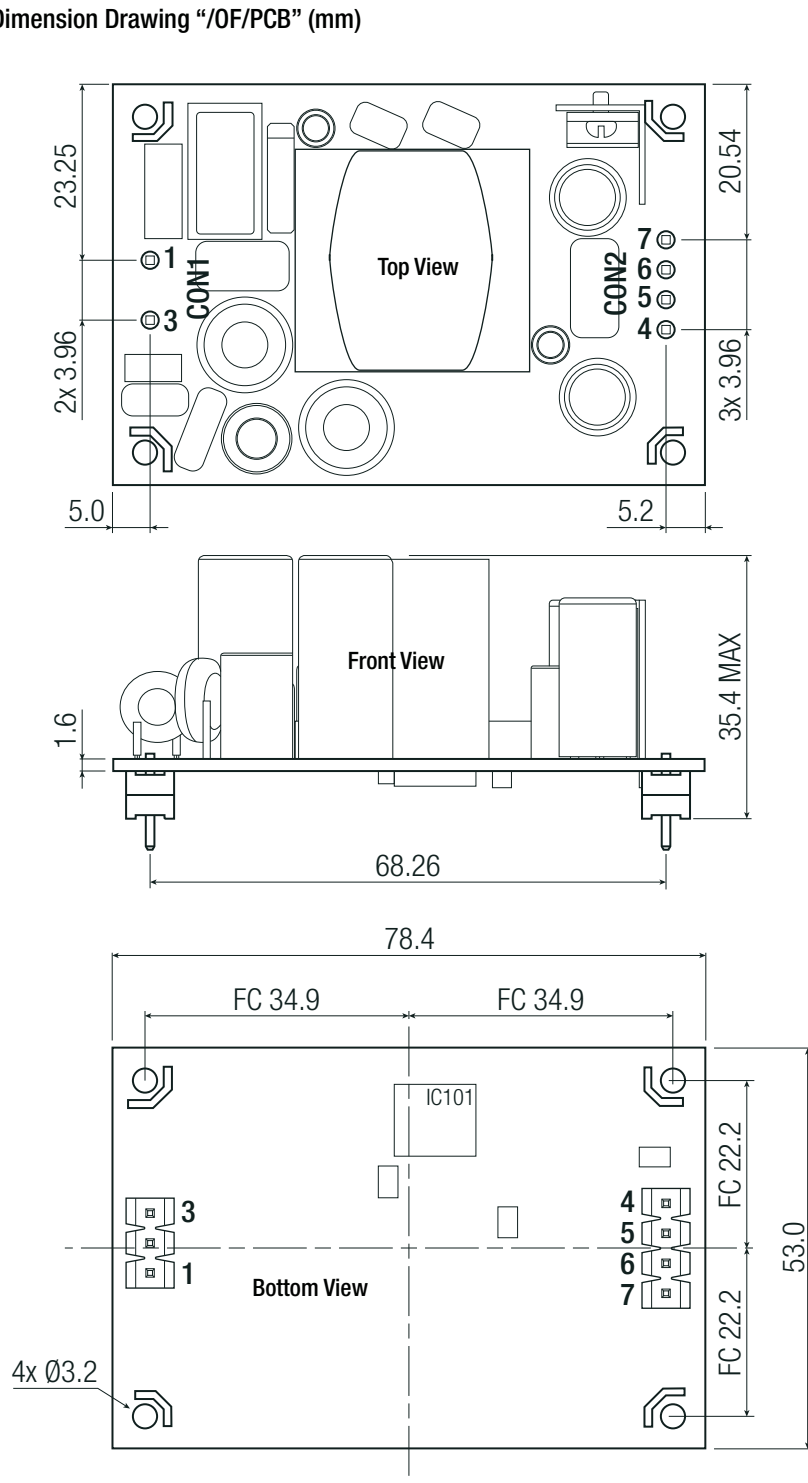
| Dimension range | Tolerances |
|-----------------|------------|
| 0.5 - 6 mm      | ±0.1 mm    |
| 6 - 30 mm       | ±0.2 mm    |
| 30 - 120 mm     | ±0.3 mm    |
| 120 - 400 mm    | ±0.5 mm    |

# RACM60-K Series ◇ AC/DC Power Supply

60W ◇ Input: 100V-240VAC or 100V-277VAC

## DIMENSION & PHYSICAL CHARACTERISTICS

Dimension Drawing "/OF/PCB" (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

Color of the connector may alternatively appear black or white related to the batch of product

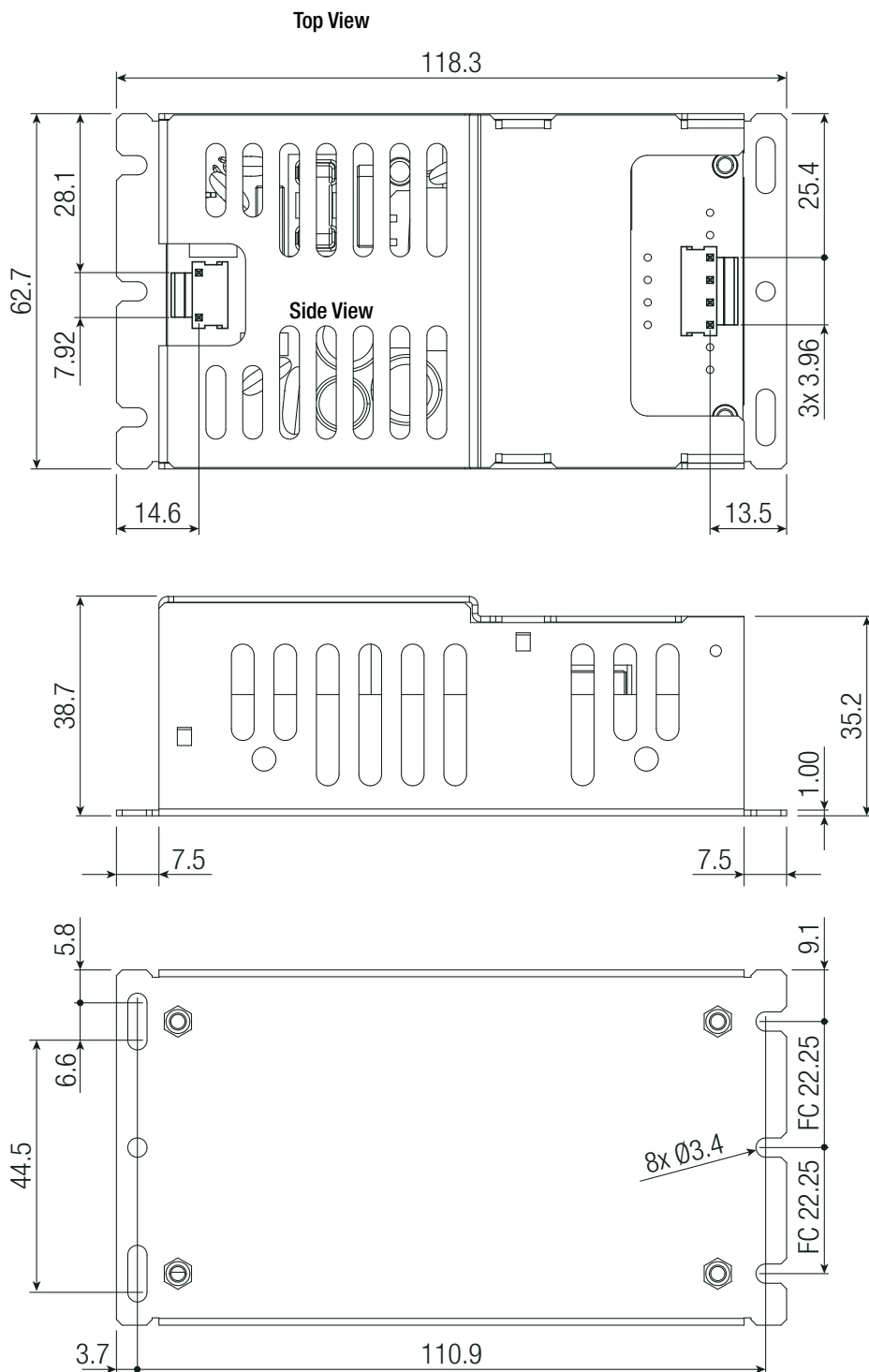
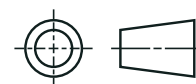
| General tolerances according to ISO 2768-m<br>(table for reference only) |            |
|--------------------------------------------------------------------------|------------|
| Dimension range                                                          | Tolerances |
| 0.5 - 6 mm                  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

# RACM60-K Series ◇ AC/DC Power Supply

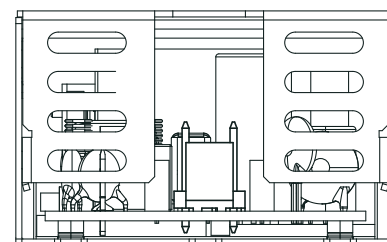
60W ◇ Input: 100V-240VAC or 100V-277VAC

## DIMENSION & PHYSICAL CHARACTERISTICS

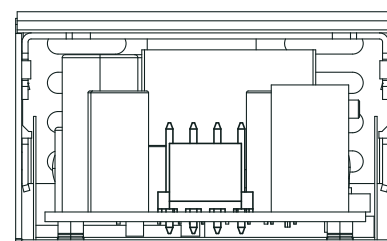
Dimension Drawing "/ENC" (mm)



AC Input Side



DC Output Side



| 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     |

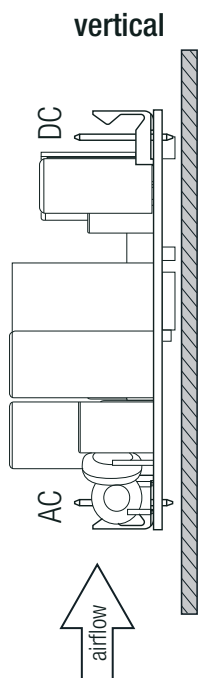
FC= fixing centers

# RACM60-K Series ◇ AC/DC Power Supply

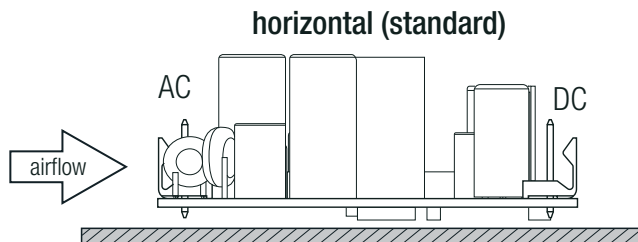
60W ◇ Input: 100V-240VAC or 100V-277VAC

## INSTALLATION AND APPLICATION

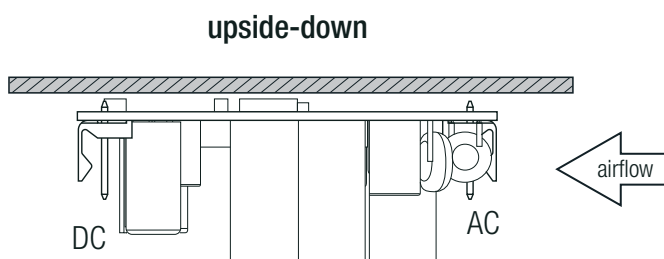
### Mounting



### Installation Instructions

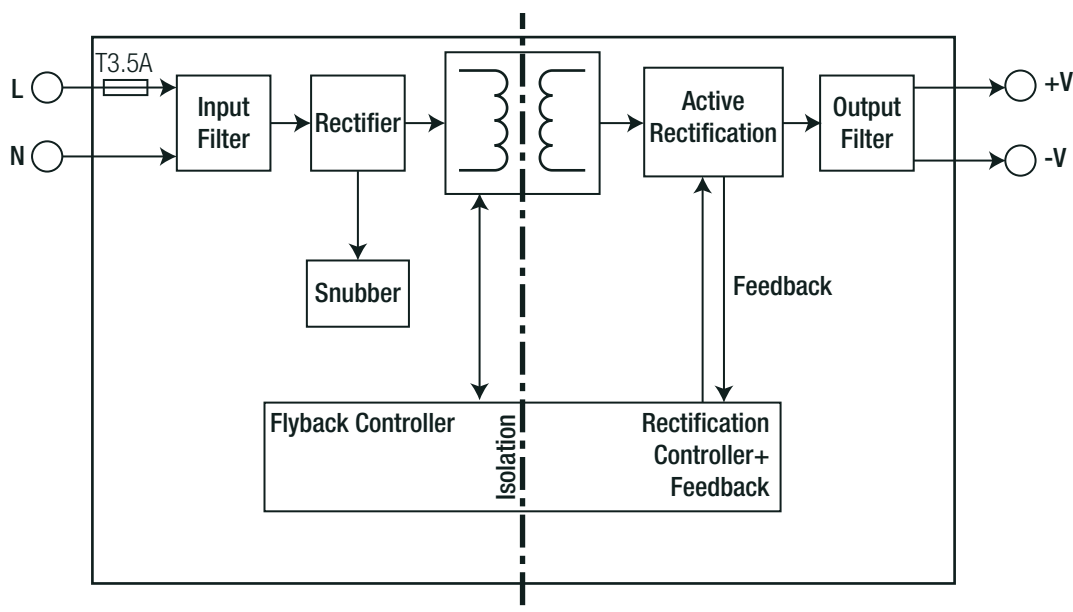


If module is mounted vertical or upside-down with natural convection cooling, the power must be derated  $\geq 10\%$ .



## BLOCK DIAGRAM

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

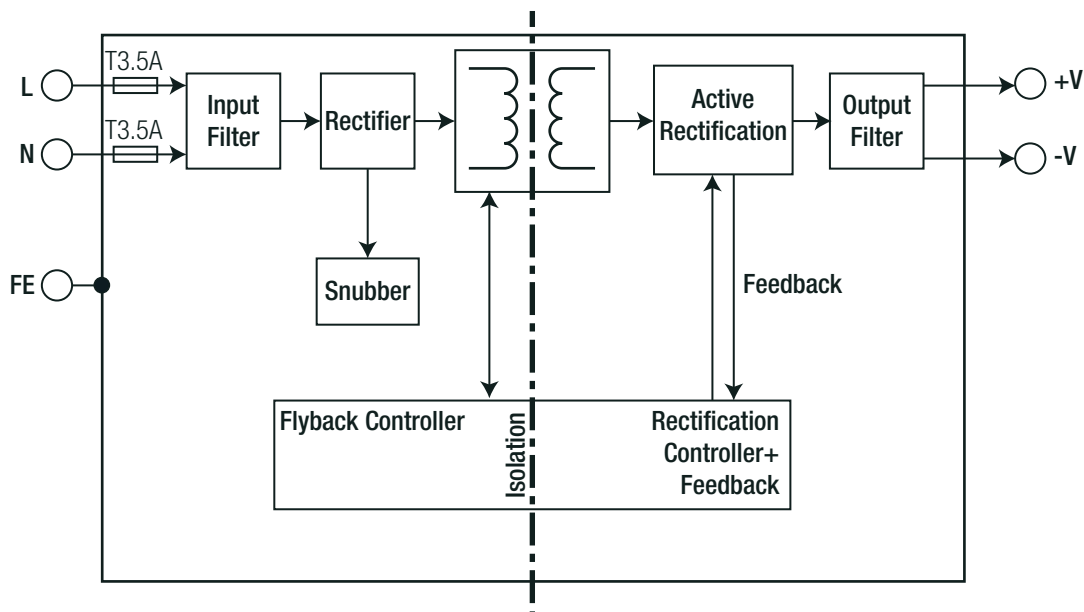


# RACM60-K Series $\diamond$ AC/DC Power Supply

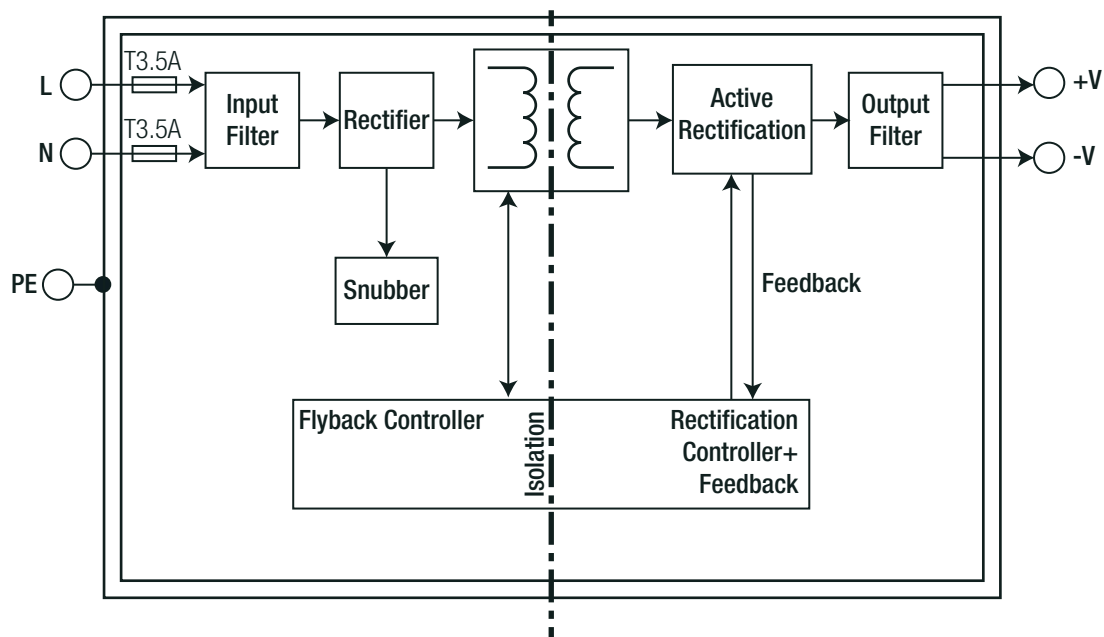
60W  $\diamond$  Input: 100V-240VAC or 100V-277VAC

## BLOCK DIAGRAM

Blockdiagram (“/OF/2x4”)



Blockdiagram (“/ENC/2x4”)



# RACM60-K Series ◇ AC/DC Power Supply

## 60W ◇ Input: 100V-240VAC or 100V-277VAC

### 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 |
| Packaging Quantity          | "/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 EXAMPLES

| Part Number          | Input Voltage Range [VAC] | Output Voltage nom. [VDC] | Size  | Type       | Connection         | Quantity             | Packaging Type |
|----------------------|---------------------------|---------------------------|-------|------------|--------------------|----------------------|----------------|
| RACM60-05SK/OF       | 80-264                    | 5                         | 2"x3" | open frame | standard connector | 1pc                  | cardboard box  |
| RACM60-24SK/OF/PCB-T | 80-264                    | 24                        | 2"x3" | open frame | PCB mounting pins  | 12pcs                | tray           |
| RACM60-12SK/OF/2x4   | 80-264                    | 12                        | 2"x4" | open frame | standard connector | 1pc                  | cardboard box  |
| RACM60-05SK/277/OF-T | 80-305                    | 5                         | 2"x3" | open frame | standard connector | 12pcs                | tray           |
| RACM60-24SK/ENC/2x4  | 80-264                    | 24                        | 2"x4" | enclosed   | standard connector | 18pcs                | tray           |
| RACM60-12SK/OF-CTN   | 80-264                    | 12                        | 2"x4" | open frame | standard connector | 48pcs (MOQ= 1152pcs) | carton         |

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