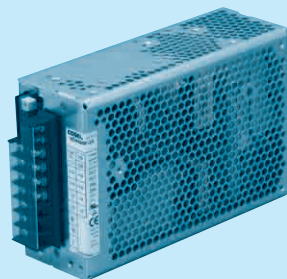


# ADA600F

① ADA ② 600 ③ F ④ -24 ⑤ -□

ADA



Recommended EMI/EMC Filter  
NAC-20-472



High voltage pulse noise type : NAP series  
Low leakage current type : NAM series  
\*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
  - ② Output wattage
  - ③ Universal input
  - ④ Output voltage
  - ⑤ Optional \*7
  - G :Low leakage current
  - E :Low leakage current and EMI class A
  - F :with Fan unit
  - T :Vertical terminal block
  - J :Connector type
  - C :with Coating
  - R :Remote ON/OFF
  - N1:DIN rail
  - W:Alarms and Redundant operation
- Specification is changed at option, refer to Instruction Manual.

Please refer to derating curve, because the rated load current depends on cooling method that is convection cooling or forced air.

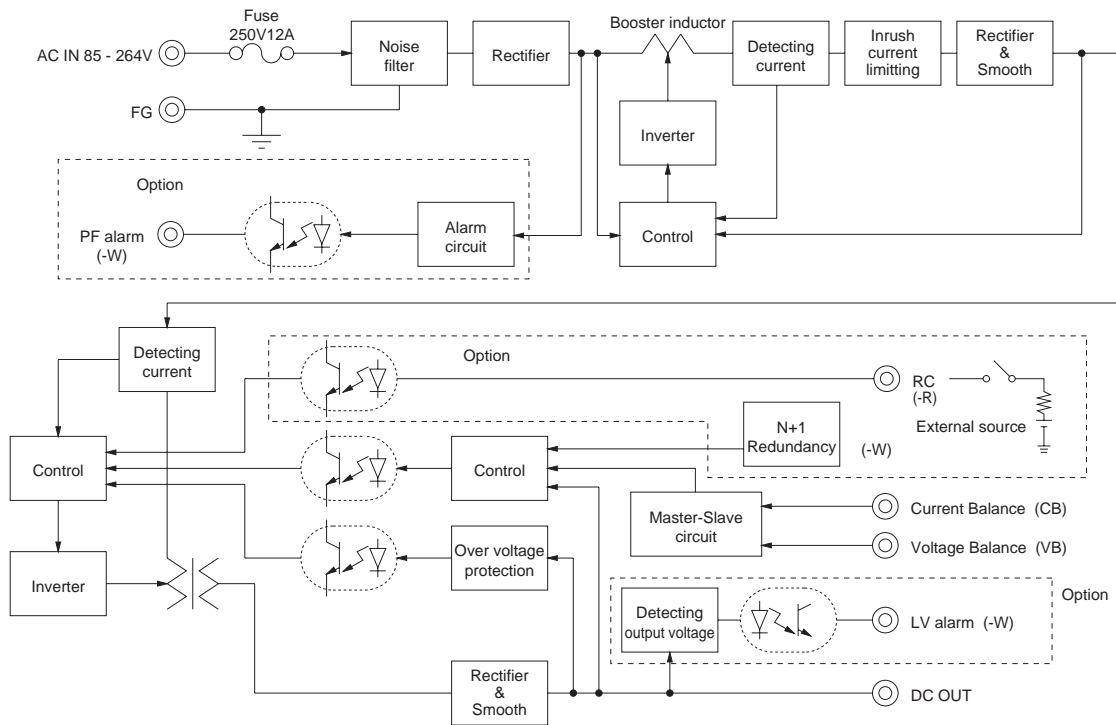
## SPECIFICATIONS

|                                    | MODEL                              | ADA600F-24  | ADA600F-30              | ADA600F-36                | ADA600F-48                  |                             |
|------------------------------------|------------------------------------|---|-------------------------|---------------------------|-----------------------------|-----------------------------|
| INPUT                              | VOLTAGE[V]                         | AC85 - 264 1 φ or DC 120 - 350 (AC64 or DC90 optionally available *6)   |                         |                           |                             |                             |
|                                    | FREQUENCY[Hz]                      | 50/60 (47 - 63) or DC   |                         |                           |                             |                             |
|                                    | EFFICIENCY[%]                      | ACIN 100V   | 84typ (Io=100%)         | 86typ (Io=100%)           | 86typ (Io=100%)             | 86typ (Io=100%)             |
|                                    |                                    | ACIN 200V   | 86typ (Io=100%)         | 87typ (Io=100%)           | 87typ (Io=100%)             | 89typ (Io=100%)             |
|                                    | POWER FACTOR                       | ACIN 100V   | 0.99typ (Io=100%)       |                           |                             |                             |
|                                    |                                    | ACIN 200V   | 0.98typ (Io=100%)       |                           |                             |                             |
| INRUSH CURRENT[A]                  | ACIN 100V *1                       | 20typ (Io=100%) (More than 3sec.to re-start)  |                         |                           |                             |                             |
|                                    | ACIN 200V *1                       | 40typ (Io=100%) (More than 3sec.to re-start)  |                         |                           |                             |                             |
| LEAKAGE CURRENT[ma]                |                                    | 0.75max (60Hz, According to IEC60950 and DEN-AN) (Io=100%)  |                         |                           |                             |                             |
| OUTPUT                             | VOLTAGE[V]                         | 24  | 30                      | 36                        | 48                          |                             |
|                                    | CURRENT[A]                         | ACIN 100V *2  | 14 (Peak 25) convection | 11 (Peak 20) convection   | 9 (Peak 16.5) convection    | 6.5 (Peak 12.5) convection  |
|                                    |                                    | ACIN 100V *2  | 21 (Peak 25) forced air | 16.5 (Peak 20) forced air | 14 (Peak 16.5) forced air   | 10.5 (Peak 12.5) forced air |
|                                    |                                    | ACIN 200V *2  | 15 (Peak 31) convection | 12 (Peak 24.5) convection | 10 (Peak 20.5) convection   | 7 (Peak 15.5) convection    |
|                                    |                                    | ACIN 200V *2  | 25 (Peak 31) forced air | 20 (Peak 24.5) forced air | 16.5 (Peak 20.5) forced air | 12.5 (Peak 15.5) forced air |
|                                    | LINE REGULATION[mV]                | 96max   | 120max                  | 144max                    | 192max                      |                             |
|                                    | LOAD REGULATION[mV]                | 150max  | 180max                  | 240max                    | 300max                      |                             |
|                                    | RIPPLE[mVp-p]                      | 0 to +50°C *3   | 120max                  | 160max                    | 200max                      | 200max                      |
|                                    |                                    | -10 - 0°C *3  | 160max                  | 230max                    | 260max                      | 300max                      |
|                                    | RIPPLE NOISE[mVp-p]                | 0 to +50°C *3   | 150max                  | 190max                    | 230max                      | 250max                      |
|                                    |                                    | -10 - 0°C *3  | 180max                  | 250max                    | 280max                      | 400max                      |
|                                    | TEMPERATURE REGULATION[mV]         | 0 to +50°C  | 240max                  | 300max                    | 360max                      | 480max                      |
|                                    | DRIFT[mV]                          | *4  | 96max                   | 120max                    | 144max                      | 192max                      |
| START-UP TIME[ms]                  |                                    | 500max (ACIN 100V, Io=100%)   |                         |                           |                             |                             |
| HOLD-UP TIME[ms]                   |                                    | 20typ (ACIN 100V, Io=100%)  |                         |                           |                             |                             |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] |                                    | 21.6 - 27.0   | 27.0 - 33.0             | 33.0 - 41.0               | 41.0 - 52.8                 |                             |
| OUTPUT VOLTAGE SETTING[V]          |                                    | 23.5 - 24.5   | 29.0 - 31.0             | 35.0 - 37.0               | 47.0 - 49.0                 |                             |
| PROTECTION CIRCUIT AND OTHERS      | OVERCURRENT PROTECTION             | Works over 101% of peak current and recovers automatically  |                         |                           |                             |                             |
|                                    | OVERVOLTAGE PROTECTION[V]          | 31 - 34.5   | 40 - 48                 | 51 - 60                   | 64 - 76                     |                             |
|                                    | OPERATING INDICATION               | LED (Green)   |                         |                           |                             |                             |
|                                    | ALARM OUTPUT                       | Detecting low input voltage(PF), detecting low output voltage(LV). (Optional : -W, refer to Instruction Manual 5) |                         |                           |                             |                             |
|                                    | REMOTE ON/OFF(RC)                  | Requirement for external source (Option : -R, refer to Instruction Manual 5)                                      |                         |                           |                             |                             |
| ISOLATION                          | INPUT-OUTPUT · RC                  | *5 AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                 |                         |                           |                             |                             |
|                                    | INPUT-FG                           | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                    |                         |                           |                             |                             |
|                                    | OUTPUT · RC-FG                     | *5 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)                                  |                         |                           |                             |                             |
| ENVIRONMENT                        | OPERATING TEMP.,HUMID.AND ALTITUDE | -10 to +71°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max                      |                         |                           |                             |                             |
|                                    | STORAGE TEMP.,HUMID.AND ALTITUDE   | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max  |                         |                           |                             |                             |
|                                    | VIBRATION                          | 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis                       |                         |                           |                             |                             |
|                                    | IMPACT                             | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis  |                         |                           |                             |                             |
| SAFETY AND NOISE REGULATIONS       | AGENCY APPROVALS                   | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN and IEC60950-1 (At only AC input)   |                         |                           |                             |                             |
|                                    | CONDUCTED NOISE                    | Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B   |                         |                           |                             |                             |
|                                    | HARMONIC ATTENUATOR                | Complies with IEC61000-3-2 *8   |                         |                           |                             |                             |
| OTHERS                             | CASE SIZE/WEIGHT                   | 65 x 127 x 195mm [2.56 x 5 x 7.68 inches] (W x H x D) (without terminal block) /1.5kg max                         |                         |                           |                             |                             |
|                                    | COOLING METHOD                     | Convection/Forced air   |                         |                           |                             |                             |

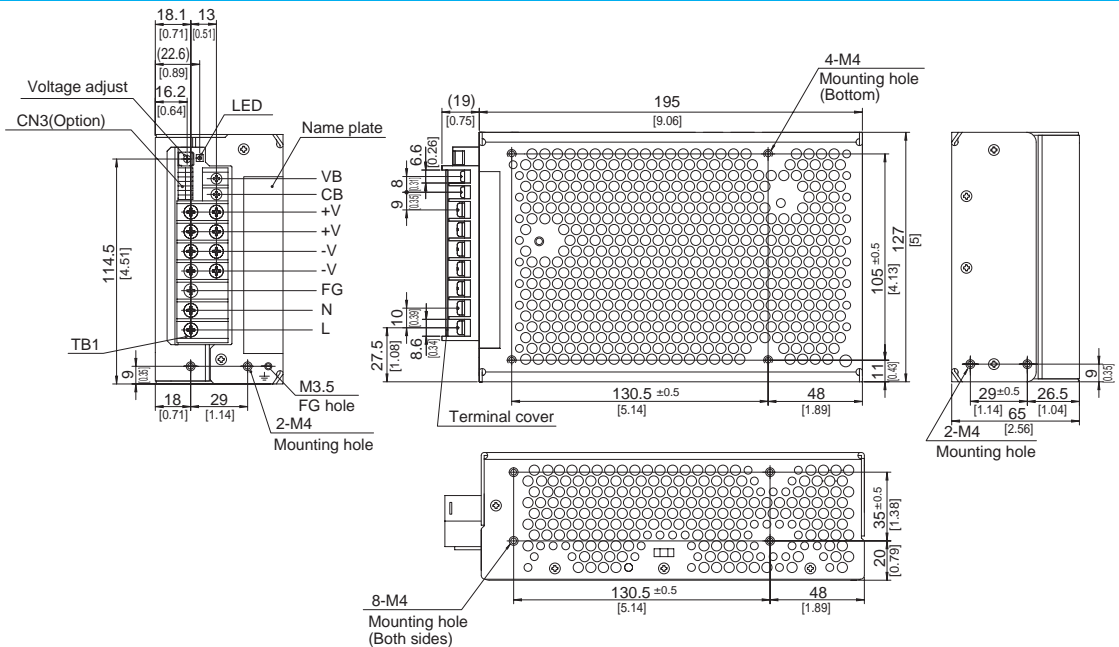
\*1 The value is primary surge. The current of input surge to a built-in EMI/EMC Filter (0.2ms or less) is excluded.  
 \*2 Peak loading for 10sec. And Duty 35% max. Refer to Instruction Manual 4. Forced air is shown in Instruction Manual 2.3.  
 \*3 This is the value that measured on measuring board with capacitor of 22 μF within 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM101).

\*4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.  
 \*5 Applicable when remote control (optional) is added.  
 \*6 Derating is required. Consult us for details.  
 \*7 Please contact us about safety approvals for the model with option.  
 \*8 Please contact us about class C.  
 \* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



### ※ Pin assign

| Symbol | Function           | Screw type |
|--------|--------------------|------------|
| VB     | Voltage balance    | M3         |
| CB     | Current balance    |            |
| +V     | Output terminal(+) | M4         |
| -V     | Output terminal(-) |            |
| -V     | Output terminal(-) |            |
| -V     | Output terminal(-) |            |
| FG     | Frame ground       |            |
| N      | AC(N)              |            |
| L      | AC(L)              |            |

Average 21A max per pin for TB1

### CN3(Optional)

| Pin No. | Function                  |
|---------|---------------------------|
| 1       | RC+ : Remote ON/OFF+(+R)  |
| 2       | RC- : Remote ON/OFF(-R)   |
| 3-8     | NC : N.C.                 |
| 9       | LV+ : LV Alarm(-W)        |
| 10      | LV- : LV Alarm ground(-W) |
| 11-12   | NC : N.C.                 |
| 13      | PF+ : PF Alarm(-W)        |
| 14      | PF- : PF Alarm ground(-W) |

| Connector | Mating connector | Terminal  | Mr.   |
|-----------|------------------|-----------|-------|
| CN3       | S14B-PHDSS       | PHDR-14VS | J.S.T |

\*1 Ratchet Hand is nothing

※ Tolerance : ±1 [±0.04]

※ Weight : 1.5kg max

※ PCB material / thickness : FR-4 / 1.6mm [0.06]

※ Chassis and cover material : aluminium

※ Dimensions in mm, [ ] = inches

※ Mounting torque : 1.2N · m(12.8kgf · cm) max

※ Screw tightening torque

M4 : 1.6N · m(16.3kgf · cm) max, M3 : 0.8N · m(8.5kgf · cm) max

※ I/O terminal for option-J and -T is shown in Instruction Manual 5.

# ADA750F

① ADA ② 750 ③ F ④ -24 ⑤ -□

ADA



Recommended EMI/EMC Filter  
NAC-20-472



High voltage pulse noise type : NAP series  
Low leakage current type : NAM series  
\*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
  - ② Output wattage
  - ③ Universal input
  - ④ Output voltage
  - ⑤ Optional \*7
  - G :Low leakage current
  - E :Low leakage current and EMI class A
  - F :with Fan unit
  - T :Vertical terminal block
  - J :Connector type
  - C :with Coating
  - R :Remote ON/OFF
  - N1:DIN rail
  - W:Alarms and Redundant operation
- Specification is changed at option, refer to Instruction Manual.

Please refer to derating curve, because the rated load current depends on cooling method that is convection cooling or forced air.

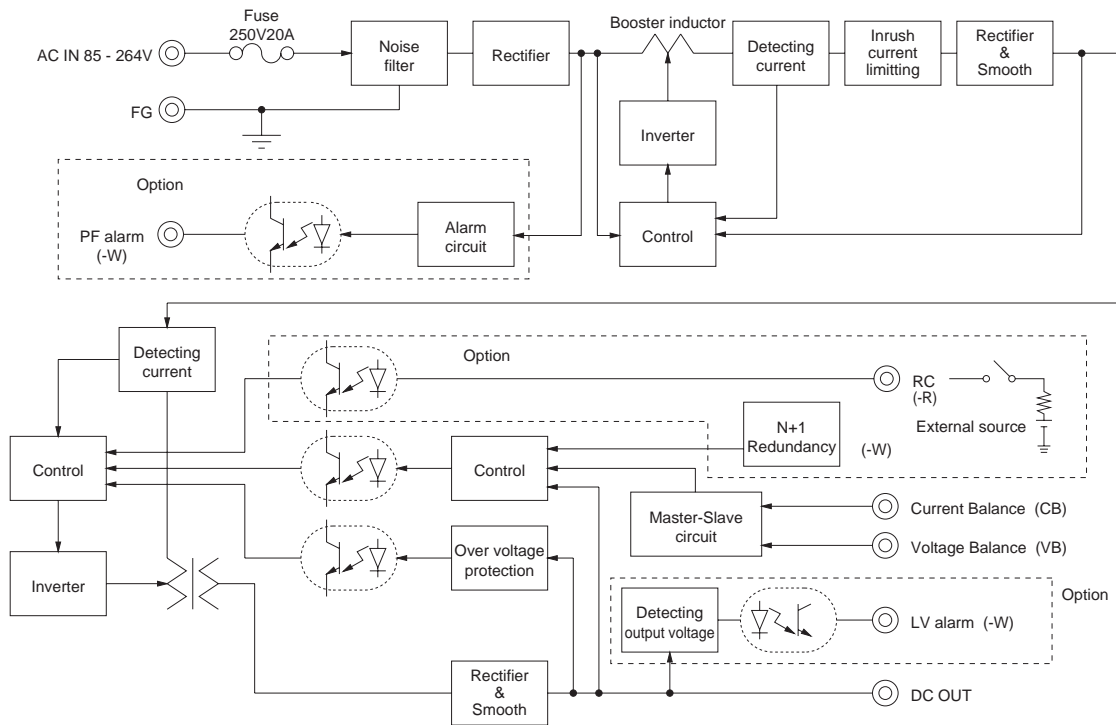
## SPECIFICATIONS

|                                    | MODEL                              | ADA750F-24  | ADA750F-30                | ADA750F-36                  | ADA750F-48                |                             |
|------------------------------------|------------------------------------|---|---------------------------|-----------------------------|---------------------------|-----------------------------|
| INPUT                              | VOLTAGE[V]                         | AC85 - 264 1 φ or DC 120 - 350 (AC64 or DC90 optionally available *6)   |                           |                             |                           |                             |
|                                    | FREQUENCY[Hz]                      | 50/60 (47 - 63) or DC   |                           |                             |                           |                             |
|                                    | EFFICIENCY[%]                      | ACIN 100V   | 86typ (Io=100%)           | 86typ (Io=100%)             | 87typ (Io=100%)           | 87typ (Io=100%)             |
|                                    |                                    | ACIN 200V   | 88typ (Io=100%)           | 88typ (Io=100%)             | 89typ (Io=100%)           | 89typ (Io=100%)             |
|                                    | POWER FACTOR                       | ACIN 100V   | 0.99typ (Io=100%)         |                             |                           |                             |
|                                    |                                    | ACIN 200V   | 0.98typ (Io=100%)         |                             |                           |                             |
| INRUSH CURRENT[A]                  | ACIN 100V *1                       | 20typ (Io=100%) (More than 3sec.to re-start)  |                           |                             |                           |                             |
|                                    | ACIN 200V *1                       | 40typ (Io=100%) (More than 3sec.to re-start)  |                           |                             |                           |                             |
| LEAKAGE CURRENT[ma]                |                                    | 0.75max (60Hz, According to IEC60950 and DEN-AN) (Io=100%)  |                           |                             |                           |                             |
| OUTPUT                             | VOLTAGE[V]                         | 24  | 30                        | 36                          | 48                        |                             |
|                                    | CURRENT[A]                         | ACIN 100V *2  | 17 (Peak 42) convection   | 13.5 (Peak 33.5) convection | 11 (Peak 28) convection   | 8 (Peak 21) convection      |
|                                    |                                    | ACIN 100V *2  | 25 (Peak 42) forced air   | 20 (Peak 33.5) forced air   | 16.5 (Peak 28) forced air | 12.5 (Peak 21) forced air   |
|                                    |                                    | ACIN 200V *2  | 19 (Peak 63) convection   | 15 (Peak 50) convection     | 12.5 (Peak 42) convection | 9 (Peak 31.5) convection    |
|                                    |                                    | ACIN 200V *2  | 31.5 (Peak 63) forced air | 24.5 (Peak 50) forced air   | 20.5 (Peak 42) forced air | 15.5 (Peak 31.5) forced air |
|                                    | LINE REGULATION[mV]                | 96max   | 120max                    | 144max                      | 192max                    |                             |
|                                    | LOAD REGULATION[mV]                | 150max  | 180max                    | 240max                      | 300max                    |                             |
|                                    | RIPPLE[mVp-p]                      | 0 to +50°C *3   | 120max                    | 160max                      | 200max                    | 200max                      |
|                                    |                                    | -10 - 0°C *3  | 160max                    | 230max                      | 260max                    | 300max                      |
|                                    | RIPPLE NOISE[mVp-p]                | 0 to +50°C *3   | 150max                    | 190max                      | 230max                    | 250max                      |
|                                    |                                    | -10 - 0°C *3  | 180max                    | 250max                      | 280max                    | 400max                      |
|                                    | TEMPERATURE REGULATION[mV]         | 0 to +50°C  | 240max                    | 300max                      | 360max                    | 480max                      |
| DRIFT[mV]                          | *4                                 | 96max   | 120max                    | 144max                      | 192max                    |                             |
| START-UP TIME[ms]                  |                                    | 500max (ACIN 100V, Io=100%)   |                           |                             |                           |                             |
| HOLD-UP TIME[ms]                   |                                    | 20typ (ACIN 100V, Io=100%)  |                           |                             |                           |                             |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] |                                    | 21.6 - 27.0   | 27.0 - 33.0               | 33.0 - 41.0                 | 41.0 - 52.8               |                             |
| OUTPUT VOLTAGE SETTING[V]          |                                    | 23.5 - 24.5   | 29.0 - 31.0               | 35.0 - 37.0                 | 47.0 - 49.0               |                             |
| PROTECTION CIRCUIT AND OTHERS      | OVERCURRENT PROTECTION             | Works over 101% of peak current and recovers automatically  |                           |                             |                           |                             |
|                                    | OVERVOLTAGE PROTECTION[V]          | 31 - 34.5   | 40 - 48                   | 51 - 60                     | 64 - 76                   |                             |
|                                    | OPERATING INDICATION               | LED (Green)   |                           |                             |                           |                             |
|                                    | ALARM OUTPUT                       | Detecting low input voltage(PF), detecting low output voltage(LV). (Optional : -W, refer to Instruction Manual 5) |                           |                             |                           |                             |
|                                    | REMOTE ON/OFF(RC)                  | Requirement for external source (Option : -R, refer to Instruction Manual 5)                                      |                           |                             |                           |                             |
| ISOLATION                          | INPUT-OUTPUT · RC                  | *5 AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                 |                           |                             |                           |                             |
|                                    | INPUT-FG                           | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                    |                           |                             |                           |                             |
|                                    | OUTPUT · RC-FG                     | *5 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)                                  |                           |                             |                           |                             |
| ENVIRONMENT                        | OPERATING TEMP.,HUMID.AND ALTITUDE | -10 to +71°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max                      |                           |                             |                           |                             |
|                                    | STORAGE TEMP.,HUMID.AND ALTITUDE   | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max  |                           |                             |                           |                             |
|                                    | VIBRATION                          | 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis                       |                           |                             |                           |                             |
|                                    | IMPACT                             | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis  |                           |                             |                           |                             |
| SAFETY AND NOISE REGULATIONS       | AGENCY APPROVALS                   | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN and IEC60950-1 (At only AC input)   |                           |                             |                           |                             |
|                                    | CONDUCTED NOISE                    | Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B   |                           |                             |                           |                             |
|                                    | HARMONIC ATTENUATOR                | Complies with IEC61000-3-2 *8   |                           |                             |                           |                             |
| OTHERS                             | CASE SIZE/WEIGHT                   | 70 x 127 x 230mm [2.76 x 5 x 9.06 inches] (W x H x D) (without terminal block) /1.9kg max                         |                           |                             |                           |                             |
|                                    | COOLING METHOD                     | Convection/Forced air   |                           |                             |                           |                             |

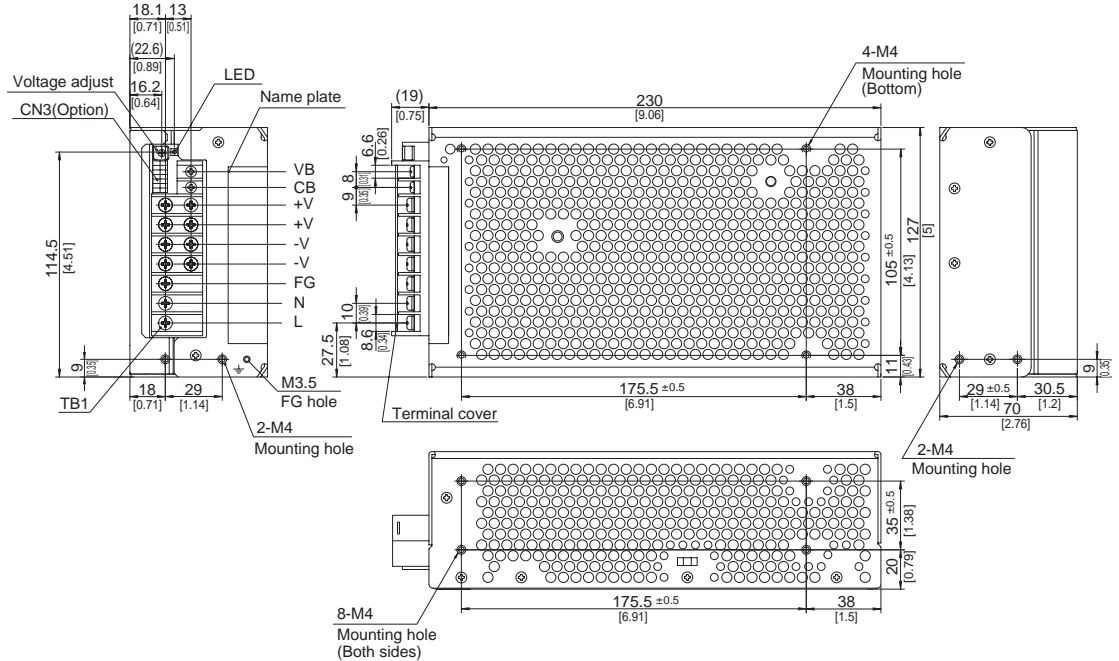
\*1 The value is primary surge. The current of input surge to a built-in EMI/EMC Filter (0.2ms or less) is excluded.  
 \*2 Peak loading for 10sec. And Duty 35% max. Refer to Instruction Manual 4. Forced air is shown in Instruction Manual 2.3.  
 \*3 This is the value that measured on measuring board with capacitor of 22 μF within 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM101).

\*4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.  
 \*5 Applicable when remote control (optional) is added.  
 \*6 Derating is required. Consult us for details.  
 \*7 Please contact us about safety approvals for the model with option.  
 \*8 Please contact us about class C.  
 \* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



### ※ Pin assign

| Symbol | Function           | Screw type |
|--------|--------------------|------------|
| VB     | Voltage balance    | M3         |
| CB     | Current balance    |            |
| +V     | Output terminal(+) | M4         |
| -V     | Output terminal(+) |            |
| -V     | Output terminal(-) |            |
| -V     | Output terminal(-) |            |
| FG     | Frame ground       |            |
| N      | AC(N)              |            |
| L      | AC(L)              |            |

Average 21A max per pin for TB1

- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 1.9kg max
- ※ PCB material / thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis and cover material : aluminium
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque : 1.2N · m(12.8kgf · cm) max
- ※ Screw tightening torque
- ※ M4 : 1.6N · m(16.9kgf · cm) max, M3 : 0.8N · m(8.5kgf · cm) max
- ※ I/O terminal for option-J and -T is shown in Instruction Manual 5.

### CN3(Optional)

| Pin No. | Function                  |
|---------|---------------------------|
| 1       | RC+ : Remote ON/OFF+(+R)  |
| 2       | RC- : Remote ON/OFF(-R)   |
| 3-8     | NC : N.C.                 |
| 9       | LV+ : LV Alarm(-W)        |
| 10      | LV- : LV Alarm ground(-W) |
| 11-12   | NC : N.C.                 |
| 13      | PF+ : PF Alarm(-W)        |
| 14      | PF- : PF Alarm ground(-W) |

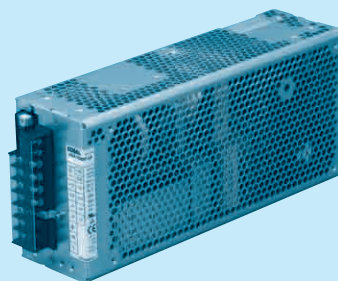
| Connector | Mating connector | Terminal  | Mfr.  |
|-----------|------------------|---|-------|
| CN3       | S14B-PHDSS       | Chain:SPHD-002T-P0.5<br>Loose:BPHD-001T-P0.5<br>BPHD-002T-P0.5* | J.S.T |

\*1 Ratchet Hand is nothing

# ADA1000F

① ADA 1000 F -24 -□

ADA



Recommended EMI/EMC Filter  
NAC-20-472



High voltage pulse noise type : NAP series  
Low leakage current type : NAM series  
\*The EMI/EMC Filter is recommended to connect with several devices.

- ① Series name
  - ② Output wattage
  - ③ Universal input
  - ④ Output voltage
  - ⑤ Optional \*7
  - G : Low leakage current
  - E : Low leakage current and EMI class A
  - F : with Fan unit
  - T : Vertical terminal block
  - J : Connector type
  - C : with Coating
  - R : Remote ON/OFF
  - N1: DIN rail
  - W: Alarms and Redundant operation
- Specification is changed at option, refer to Instruction Manual.

Please refer to derating curve, because the rated load current depends on cooling method that is convection cooling or forced air.

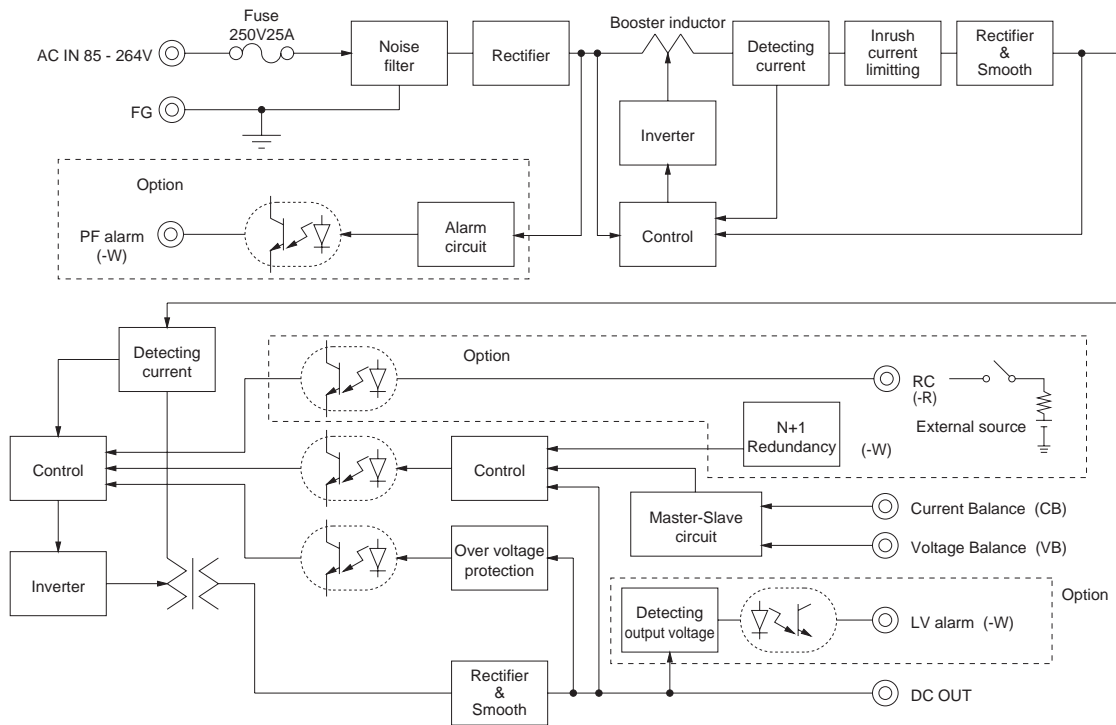
## SPECIFICATIONS

|                                    | MODEL  | ADA1000F-24   | ADA1000F-30             | ADA1000F-36               | ADA1000F-48               |                             |
|------------------------------------|--|---|-------------------------|---------------------------|---------------------------|-----------------------------|
| INPUT                              | VOLTAGE[V]   | AC85 - 264 1 φ or DC 120 - 350 (AC64 or DC90 optionally available *6)   |                         |                           |                           |                             |
|                                    | FREQUENCY[Hz]  | 50/60 (47 - 63) or DC   |                         |                           |                           |                             |
|                                    | EFFICIENCY[%]  | ACIN 100V   | 86typ (Io=100%)         | 86typ (Io=100%)           | 87typ (Io=100%)           | 87typ (Io=100%)             |
|                                    |  | ACIN 200V   | 88typ (Io=100%)         | 88typ (Io=100%)           | 89typ (Io=100%)           | 89typ (Io=100%)             |
|                                    | POWER FACTOR   | ACIN 100V   | 0.99typ (Io=100%)       |                           |                           |                             |
|                                    |  | ACIN 200V   | 0.98typ (Io=100%)       |                           |                           |                             |
| INRUSH CURRENT[A]                  | ACIN 100V *1   | 20typ (Io=100%) (More than 3sec.to re-start)  |                         |                           |                           |                             |
|                                    | ACIN 200V *1   | 40typ (Io=100%) (More than 3sec.to re-start)  |                         |                           |                           |                             |
| LEAKAGE CURRENT[ma]                | 0.75max (60Hz, According to IEC60950 and DEN-AN) (Io=100%)                   |   |                         |                           |                           |                             |
| OUTPUT                             | VOLTAGE[V]   | 24  | 30                      | 36                        | 48                        |                             |
|                                    | CURRENT[A]   | ACIN 100V *2  | 21 (Peak 63) convection | 16.5 (Peak 50) convection | 14 (Peak 42) convection   | 10.5 (Peak 31.5) convection |
|                                    |  | ACIN 100V *2  | 33 (Peak 63) forced air | 26 (Peak 50) forced air   | 22 (Peak 42) forced air   | 16.5 (Peak 31.5) forced air |
|                                    |  | ACIN 200V *2  | 25 (Peak 83) convection | 20 (Peak 66) convection   | 16.5 (Peak 55) convection | 11.5 (Peak 41.5) convection |
|                                    |  | ACIN 200V *2  | 42 (Peak 83) forced air | 33.5 (Peak 66) forced air | 28 (Peak 55) forced air   | 21 (Peak 41.5) forced air   |
|                                    | LINE REGULATION[mV]  | 96max   | 120max                  | 144max                    | 192max                    |                             |
|                                    | LOAD REGULATION[mV]  | 150max  | 180max                  | 240max                    | 300max                    |                             |
|                                    | RIPPLE[mVp-p]  | 0 to +50°C *3   | 120max                  | 160max                    | 200max                    | 200max                      |
|                                    |  | -10 - 0°C *3  | 160max                  | 230max                    | 260max                    | 300max                      |
|                                    | RIPPLE NOISE[mVp-p]  | 0 to +50°C *3   | 150max                  | 190max                    | 230max                    | 250max                      |
|                                    |  | -10 - 0°C *3  | 180max                  | 250max                    | 280max                    | 400max                      |
|                                    | TEMPERATURE REGULATION[mV]   | 0 to +50°C  | 240max                  | 300max                    | 360max                    | 480max                      |
|                                    | DRIFT[mV]  | *4  | 96max                   | 120max                    | 144max                    | 192max                      |
| START-UP TIME[ms]                  | 500max (ACIN 100V, Io=100%)  |   |                         |                           |                           |                             |
| HOLD-UP TIME[ms]                   | 20typ (ACIN 100V, Io=100%)   |   |                         |                           |                           |                             |
| OUTPUT VOLTAGE ADJUSTMENT RANGE[V] | 21.6 - 27.0  | 27.0 - 33.0   | 33.0 - 41.0             | 41.0 - 52.8               |                           |                             |
| OUTPUT VOLTAGE SETTING[V]          | 23.5 - 24.5  | 29.0 - 31.0   | 35.0 - 37.0             | 47 - 49                   |                           |                             |
| PROTECTION CIRCUIT AND OTHERS      | OVERCURRENT PROTECTION   | Works over 101% of peak current and recovers automatically  |                         |                           |                           |                             |
|                                    | OVERVOLTAGE PROTECTION[V]  | 31 - 34.5   | 40 - 48                 | 51 - 60                   | 64 - 76                   |                             |
|                                    | OPERATING INDICATION   | LED (Green)   |                         |                           |                           |                             |
|                                    | ALARM OUTPUT   | Detecting low input voltage(PF), detecting low output voltage(LV). (Optional : -W, refer to Instruction Manual 5) |                         |                           |                           |                             |
| REMOTE ON/OFF(RC)                  | Requirement for external source (Option : -R, refer to Instruction Manual 5) |   |                         |                           |                           |                             |
| ISOLATION                          | INPUT-OUTPUT · RC  | *5 AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                 |                         |                           |                           |                             |
|                                    | INPUT-FG   | AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (At Room Temperature)                                    |                         |                           |                           |                             |
|                                    | OUTPUT · RC-FG   | *5 AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (At Room Temperature)                                  |                         |                           |                           |                             |
| ENVIRONMENT                        | OPERATING TEMP., HUMID. AND ALTITUDE   | -10 to +71°C, 20 - 90%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000feet) max                      |                         |                           |                           |                             |
|                                    | STORAGE TEMP., HUMID. AND ALTITUDE   | -20 to +75°C, 20 - 90%RH (Non condensing), 9,000m (30,000feet) max  |                         |                           |                           |                             |
|                                    | VIBRATION  | 10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3minutes period, 60minutes each along X, Y and Z axis                       |                         |                           |                           |                             |
|                                    | IMPACT   | 196.1m/s <sup>2</sup> (20G), 11ms, once each X, Y and Z axis  |                         |                           |                           |                             |
| SAFETY AND NOISE REGULATIONS       | AGENCY APPROVALS   | UL60950-1, C-UL(CSA60950-1), EN60950-1, EN60065, EN50178 Complies with DEN-AN and IEC60950-1 (At only AC input)   |                         |                           |                           |                             |
|                                    | CONDUCTED NOISE  | Complies with FCC-B, CISPR22-B, EN55022-B, VCCI-B   |                         |                           |                           |                             |
|                                    | HARMONIC ATTENUATOR  | Complies with IEC61000-3-2 *8   |                         |                           |                           |                             |
| OTHERS                             | CASE SIZE/WEIGHT   | 75 x 127 x 280mm [2.95 x 5 x 11.02 inches] (W x H x D) (without terminal block) /2.5kg max                        |                         |                           |                           |                             |
|                                    | COOLING METHOD   | Convection/Forced air   |                         |                           |                           |                             |

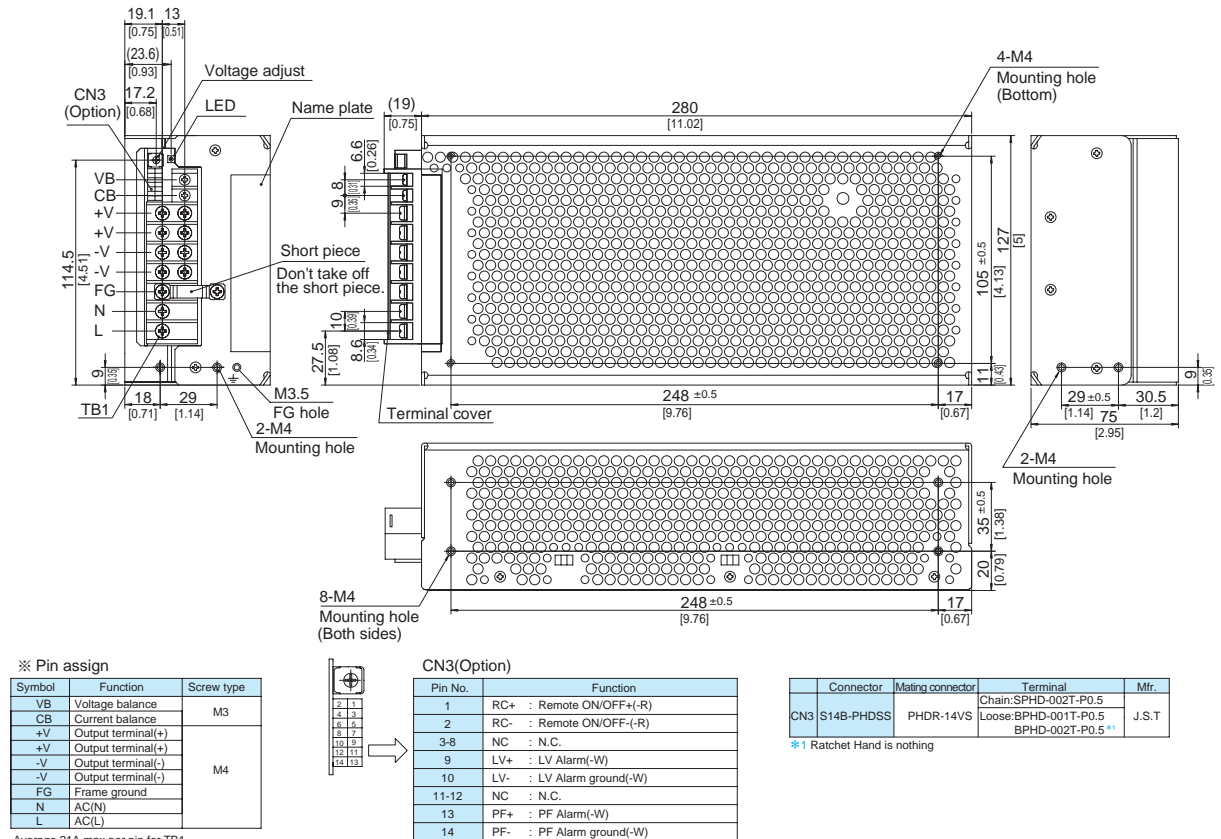
\*1 The value is primary surge. The current of input surge to a built-in EMI/EMC Filter (0.2ms or less) is excluded.  
 \*2 Peak loading for 10sec. And Duty 35% max. Refer to Instruction Manual 4. Forced air is shown in Instruction Manual 2.3.  
 \*3 This is the value that measured on measuring board with capacitor of 22 μF within 150mm from output terminal. Measured by 20MHz oscilloscope or Ripple-Noise meter (Equivalent to KEISOKU-GIKEN: RM101).

\*4 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.  
 \*5 Applicable when remote control (optional) is added.  
 \*6 Derating is required. Consult us for details.  
 \*7 Please contact us about safety approvals for the model with option.  
 \*8 Please contact us about class C.  
 \* A sound may occur from power supply at pulse loading.

## Block diagram



## External view



- ※ Tolerance : ±1 [±0.04]
- ※ Weight : 2.5kg max
- ※ PCB material / thickness : FR-4 / 1.6mm [0.06]
- ※ Chassis and cover material : aluminium
- ※ Dimensions in mm, [ ] = inches
- ※ Mounting torque : 1.2N · m(12.8kgf · cm) max
- ※ Screw tightening torque
- ※ M4 : 1.6N · m(16.9kgf · cm) max, M3 : 0.8N · m(8.5kgf · cm) max
- ※ I/O terminal for option-J and -T is shown in Instruction Manual 5.

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