

NAC/NAM/NAH/NAP series(4-30A)

NAC -10 -472 -□

① ② ③ ④

- ① Series Name
- ② Rated Current
- ③ Line to ground capacitor code: Refer to table 1.1.

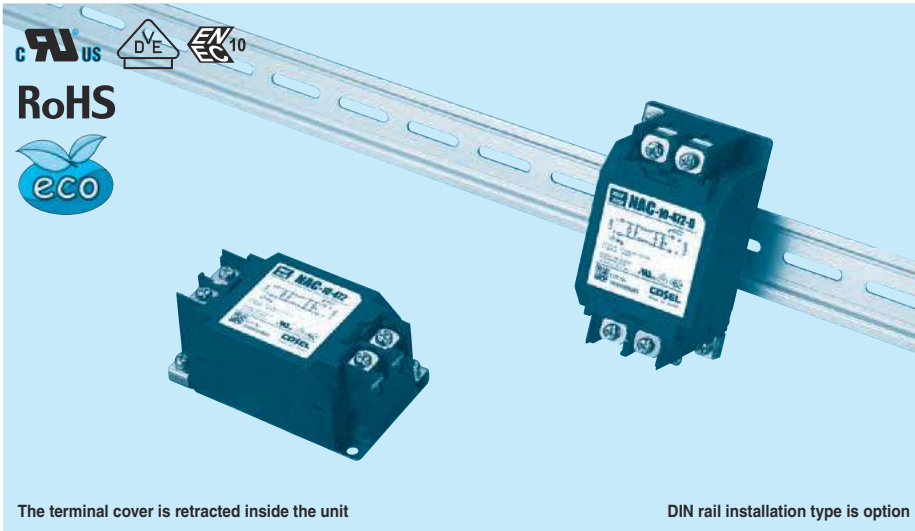
table 1.1 Line to ground capacitor code

| Code | N A C | N A H | N A P | Leakage Current (Input 125/250V 60Hz) | Line to ground capacitor (nominal value) |
|------|-------------|-------------|-------------|--|--|
| 000 | ● | ● | ● | 5 μ A / 10 μ A max | Not Provided |
| 101 | ● | ● | ● | 12.5 μ A / 25 μ A max | 100pF |
| 221 | ● | ● | ● | 25 μ A / 50 μ A max | 220pF |
| 331 | ● | ● | ● | 37.5 μ A / 75 μ A max | 330pF |
| 471 | ● | ● | ● | 50 μ A / 100 μ A max | 470pF |
| 681 | ● | ● | ● | 75.5 μ A / 150 μ A max | 680pF |
| 102 | ● | ● | ● | 0.13 mA / 0.25mA max | 1,000pF |
| 222 | ● | ● | ● | 0.25 mA / 0.5 mA max | 2,200pF |
| 332 | ● | ● | ● | 0.38 mA / 0.75mA max | 3,300pF |
| 472 | ● | ● | ● | 0.5 mA / 1.0 mA max | 4,700pF |

* When the line to ground capacitor code is different, the attenuation characteristic is different.

- ④ Option
- D: DIN rail installation type

* The dimensions change when the option is set. Refer to External view.



The terminal cover is retracted inside the unit

DIN rail installation type is option

Features of NAC/NAM/NAH/NAP series

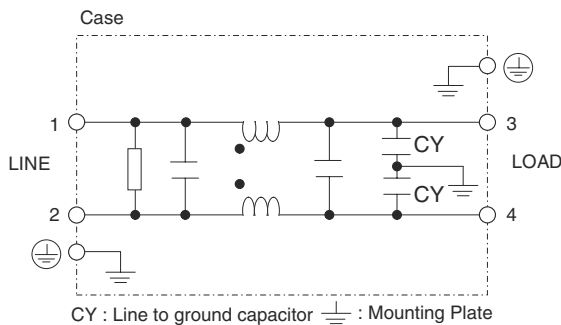
- Single Phase 250VAC (1-Stage filter)
 - Quick and easy push-down terminal
- Just connect the wires, push-down and tighten the screws with a screwdriver

- NAC : High-attenuation type from 150kHz to 1MHz
- NAM: Low leakage current type
- NAH: Ultra high-attenuation type from 9kHz to 1MHz
- NAP : Outside impulse high-attenuation type

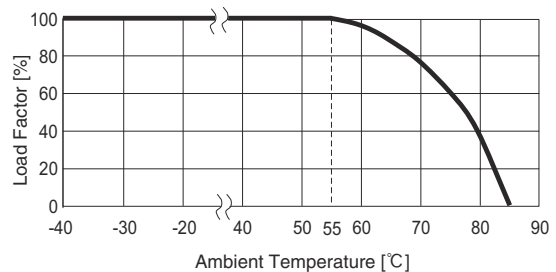
Specifications

| No. | Items | NAC-04-472 | NAC-06-472 | NAC-10-472 | NAC-16-472 | NAC-20-472 | NAC-30-472 |
|-----|--|--|------------|------------|------------|------------|------------|
| | | NAM-04-000 | NAM-06-000 | NAM-10-000 | NAM-16-000 | NAM-20-000 | NAM-30-000 |
| | | - | NAH-06-472 | NAH-10-472 | NAH-16-472 | NAH-20-472 | NAH-30-472 |
| | | NAP-04-472 | NAP-06-472 | NAP-10-472 | NAP-16-472 | NAP-20-472 | NAP-30-472 |
| 1 | Rated Voltage[V] | AC 1 ϕ 250 / DC250 | | | | | |
| 2 | Rated Current[A] | 4 | 6 | 10 | 16 | 20 | 30 |
| 3 | Test Voltage (Terminal-Mounting Plate) | 2,500 VAC (Cutoff Current = 20mA), 1minute at room temperature and humidity | | | | | |
| 4 | Isolation Resistance (Terminal-Mounting Plate) | 500 VDC 100M Ω min at room temperature and humidity | | | | | |
| 5 | Leakage current | Refer to table 1.1 | | | | | |
| 6 | Voltage drop | 1.0V max | | | | | |
| 7 | Safety agency approval temperatures | -25 to +85°C (Refer to Derating Curve) | | | | | |
| 8 | Operating temperature | -40 to +85°C (Refer to Derating Curve) | | | | | |
| 9 | Operating humidity | 20 to 95%RH (Non condensing) | | | | | |
| 10 | Storage temperature/humidity | -40 to +85°C/20 to 95%RH (Non condensing) | | | | | |
| 11 | Vibration | 10 to 55Hz, 19.6m/s ² (2G), 3min. Period, 1hour each X, Y and Z axis | | | | | |
| 12 | Impact | 196.1m/s ² (20G), 11ms Once each X, Y and Z axis | | | | | |
| 13 | Safety agency approvals | UL1283, CSA C22.2 No.8 (C-UL), DIN EN60939 VDE0565 Teil3-1, ENEC (At only AC input) | | | | | |
| 14 | Case size (without projection) /Weight | 53X41X92 mm [2.09X1.61X3.62 inches] (W X H X D) /300g max (Option : -D refer to external view) | | | | | |

Circuit Diagram



Derating Curve

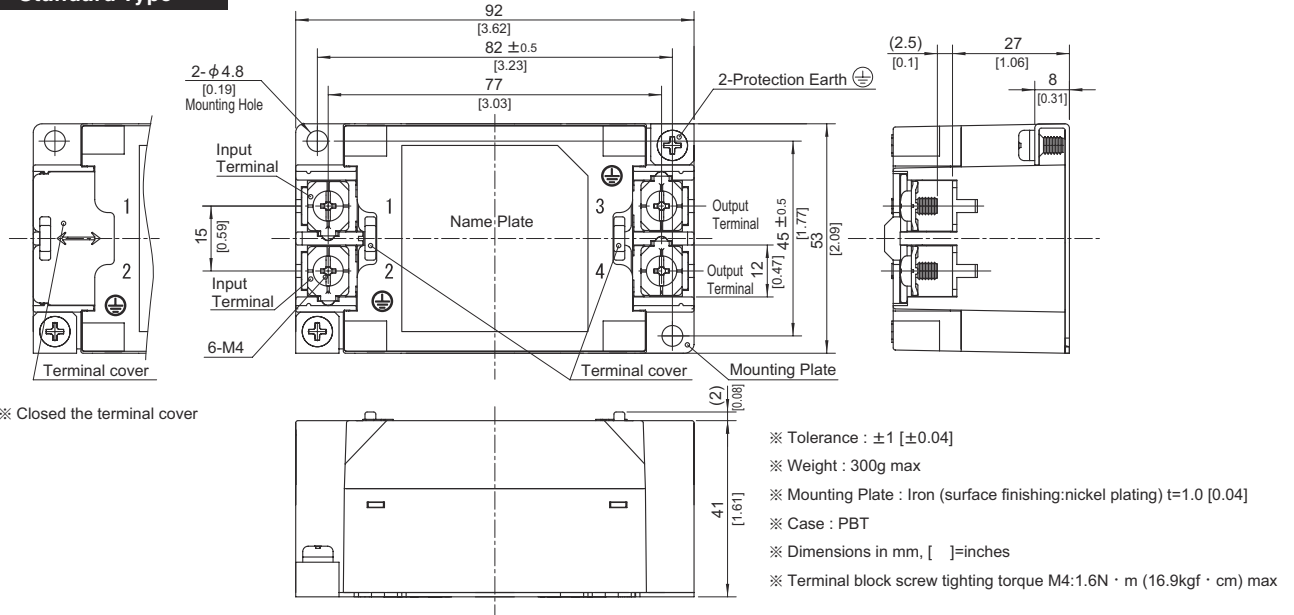


External view

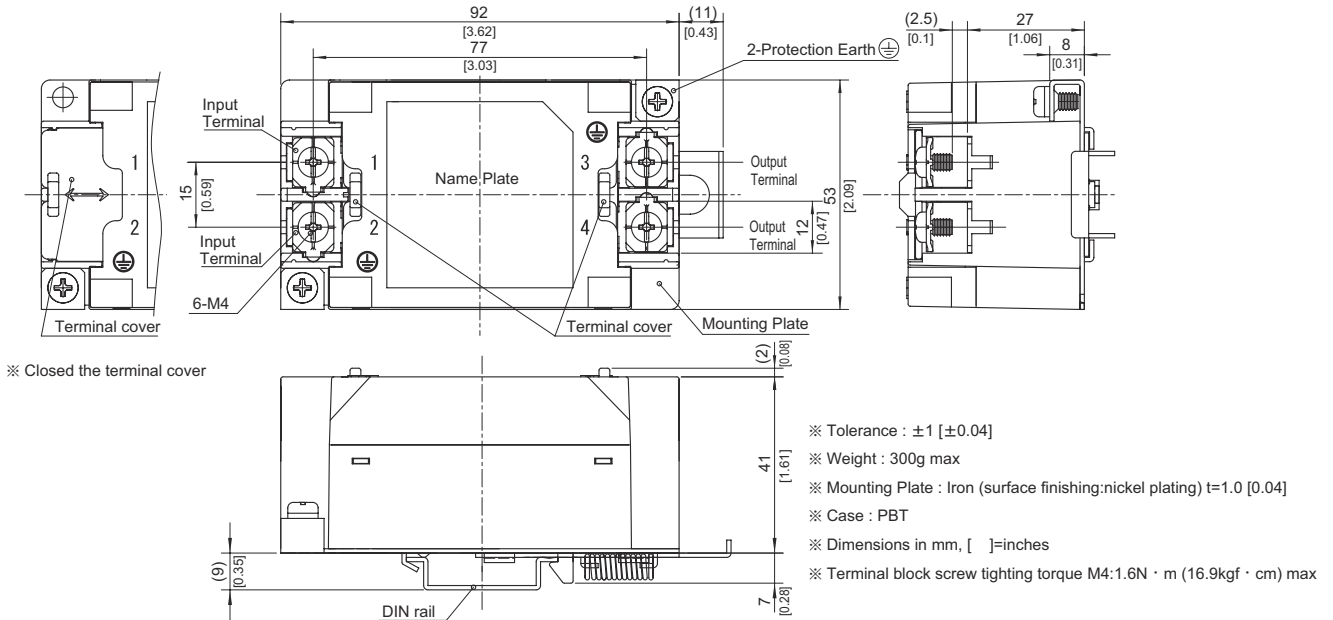
This product is shipped in the following condition, because it is equipped with push-down terminals.

- ① The terminal cover is retracted inside the unit.
- ② The screws for connecting the terminals are held in the up right position.

Standard Type



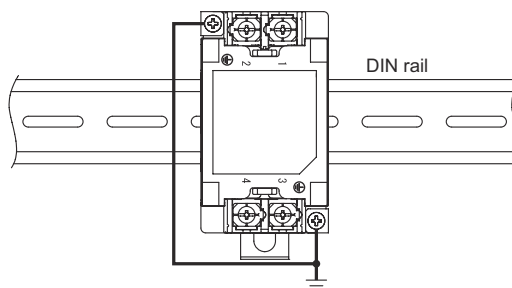
DIN rail installation Type



■Note when installing the EMI/EMC Filter on a DIN rail.

When the EMI/EMC Filter is grounded through the DIN rail, the proper noise attenuation may not be achieved.

Be sure to connect the protection earth (PE) of the EMI/EMC Filter body to the earth. At least one PE connection is required.



NAC/NAM/NAH/NAP series (40,50,60A)

NAC -50 -472 -□

① ② ③ ④

- ① Series Name
- ② Rated Current
- ③ Line to ground capacitor code: Refer to table 1.1 and table 1.2.
- ④ Option
F: High input voltage (500VAC/600VDC)

table 1.1 Line to ground capacitor code (Standard)

| Code | N A C | N A M | N A H | N A P | Leakage Current (Input 125/250V 60Hz) | Line to ground capacitor (nominal value) |
|------|-------------|-------------|-------------|-------------|--|--|
| 000 | ● | ● | ● | ● | 5 μ A/ 10 μ A max | Not Provided |
| 471 | ● | ● | ● | ● | 50 μ A/ 100 μ A max | 470pF |
| 222 | ● | ● | ● | ● | 0.25 mA/ 0.5 mA max | 2,200pF |
| 472 | ● | ● | ● | ● | 0.5 mA/ 1.0 mA max | 4,700pF |
| 223 | ● | ● | ● | ● | 1.25 mA/ 2.5 mA max | 0.022 μ F |
| 683 | ● | ● | ● | ● | 1.75 mA/ 3.5 mA max | 0.068 μ F |
| 224 | ● | ● | ● | ● | 6.0 mA/ 12.0 mA max | 0.22 μ F |
| 155 | ● | ● | ● | ● | 27.5 mA/ 55.0 mA max | 1.5 μ F |

table 1.2 Line to ground capacitor code (Option: F)

| Code | N A C | N A M | N A H | N A P | Leakage Current (Input 250/500V 60Hz) | Line to ground capacitor (nominal value) |
|------|-------------|-------------|-------------|-------------|--|--|
| 103 | ● | ● | ● | ● | 0.5 mA/ 1.0 mA max | 0.01 μ F |
| 223 | ● | ● | ● | ● | 1.0 mA/ 2.0 mA max | 0.022 μ F |
| 683 | ● | ● | ● | ● | 2.5 mA/ 5.0 mA max | 0.068 μ F |

* When the line to ground capacitor code is different, the attenuation characteristic is different.



Features of NAC/NAM/NAH/NAP series

- Single Phase 277VAC/300VDC (1-stage filter)
This product is available 277VAC equipment in factory switchboards and building equipment
- Withstand voltage 4,000 VAC (Line to ground capacitor code -000 to -472)

- NAC : High-attenuation type from 150kHz to 1MHz
- NAM : Low leakage current type
- NAH : Ultra high-attenuation type from 9kHz to 1MHz
- NAP : Outside impulse high-attenuation type

Specifications

| No. | Items | NAC-40-472 | | NAC-50-472 | | NAC-60-472 | | |
|-----|--|---|--|-------------------|--|-------------------|--|--|
| | | NAM-40-000 | | NAM-50-000 | | NAM-60-000 | | |
| | | NAH-40-472 | | NAH-50-472 | | NAH-60-472 | | |
| | | NAP-40-472 | | NAP-50-472 | | NAP-60-472 | | |
| 1 | Rated Voltage | [VAC] | 277 (voltage range : 305 max) 1 ϕ 50/60Hz [Option : F 500 (voltage range : 528 max) 1 ϕ 50/60Hz] | | | | | |
| | | [VDC] | 300 (voltage range:400 max) [Option : F 600] | | | | | |
| 2 | Rated Current[A] | 40 | | 50 | | 60 | | |
| 3 | Test Voltage (Terminal-Mounting Plate) | 4,000 VAC (Cutoff Current = 25mA), 1minute at room temperature and humidity *1 *2 | | | | | | |
| 4 | Isolation Resistance (Terminal-Mounting Plate) | 500 VDC 100M Ω min at room temperature and humidity *3 | | | | | | |
| 5 | Leakage current | Refer to table 1.1 and table 1.2 | | | | | | |
| 6 | DC resistance | 10m Ω max | | 6.0m Ω max | | 4.5m Ω max | | |
| 7 | Safety agency approval temperatures | -25 to +85°C (Refer to Derating Curve) | | | | | | |
| 8 | Operating temperature | -40 to +85°C (Refer to Derating Curve) | | | | | | |
| 9 | Operating humidity | 20 to 95%RH (Non condensing) | | | | | | |
| 10 | Storage temperature/humidity | -40 to +85°C/20 to 95%RH (Non condensing) | | | | | | |
| 11 | Vibration | 10 to 55Hz, 19.6m/s ² (2G), 3min. Period, 1hour each X, Y and Z axis | | | | | | |
| 12 | Impact | 196.1m/s ² (20G), 11ms Once each X, Y and Z axis | | | | | | |
| 13 | Safety agency approvals | UL60939 [Overvoltage Category : III Altitude:3000m], CSA C22.2 No.8 (C-UL) EN60939 (DEMKO) [Overvoltage Category: III Altitude:3000m] , ENEC | | | | | | |
| 14 | Case size (without projection) /Weight | 65x54x153mm [2.56x2.13x6.02 inches] (WxHxD) / 750g max | | | | | | |

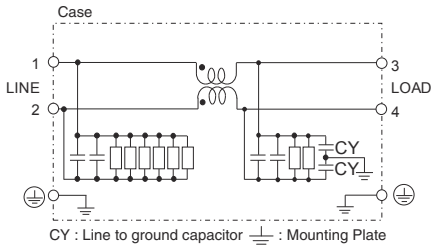
*1 "NA□-□□-□□□-F" : 2,500 VAC (Cutoff Current = 100mA) , 1 minute at room temperature and humidity.

*2 Capacitor code "223", "683", "224" and "155" of "NA□-□□-□□□" : 2,800VDC (Cutoff Current = 10mA) , 1 minute at room temperature and humidity.

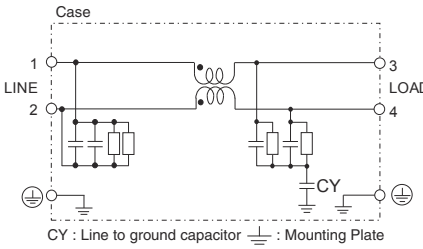
*3 Capacitor code "224" and "155" : isolation resistance specification is deleted.

Circuit Diagram

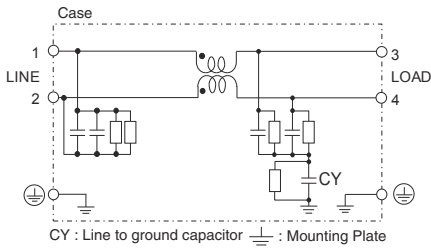
(1) Line to ground capacitor code :000,471,222,472,223



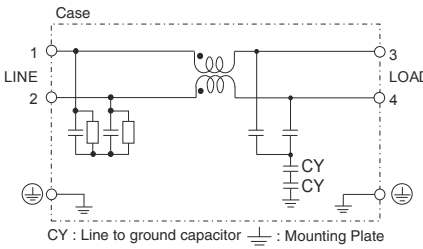
(2) Line to ground capacitor code :683



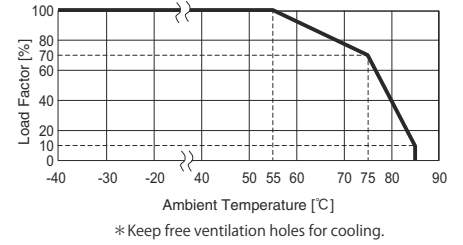
(3) Line to ground capacitor code :224,155



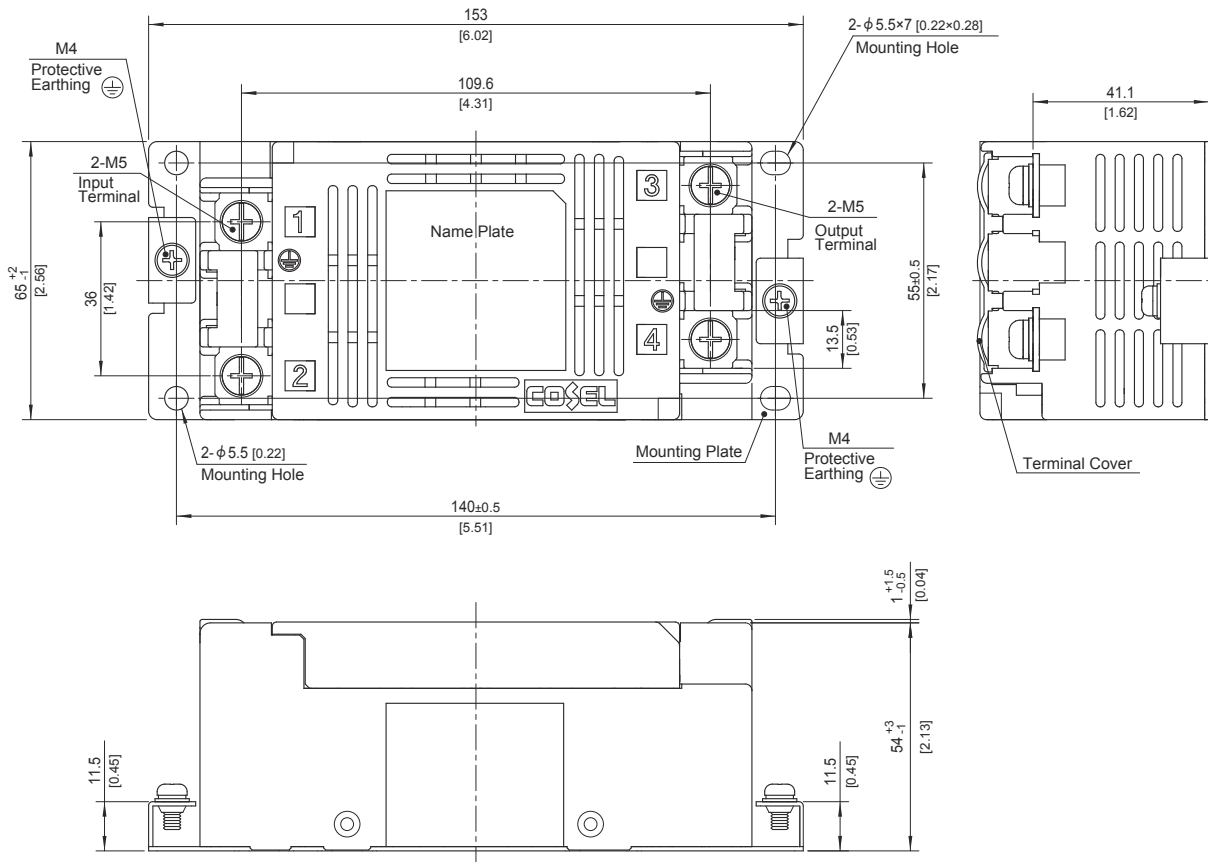
(4) Line to ground capacitor code :103,223,683
Option : F



Derating Curve



External view



- ※ Dimensions in mm, []=inches
- ※ Tolerance: ± 1 [± 0.04]
- ※ Weight: 750g max
- ※ Mounting Plate: Hot-dip Galvanized Steel board $t=1.0$ [0.04]
- ※ Case Material: PBT
- ※ Terminal block screw tightening torque M5: 3.0N·m max
- ※ Protective Earthing (PE) screw tightening torque M4 : 1.6N·m max
- ※ Can not be mounted upside-down. (mounted the top surface)
- ※ Keep free ventilation holes for cooling.
- ※ Can be mounted using the 2 corner mounting holes.