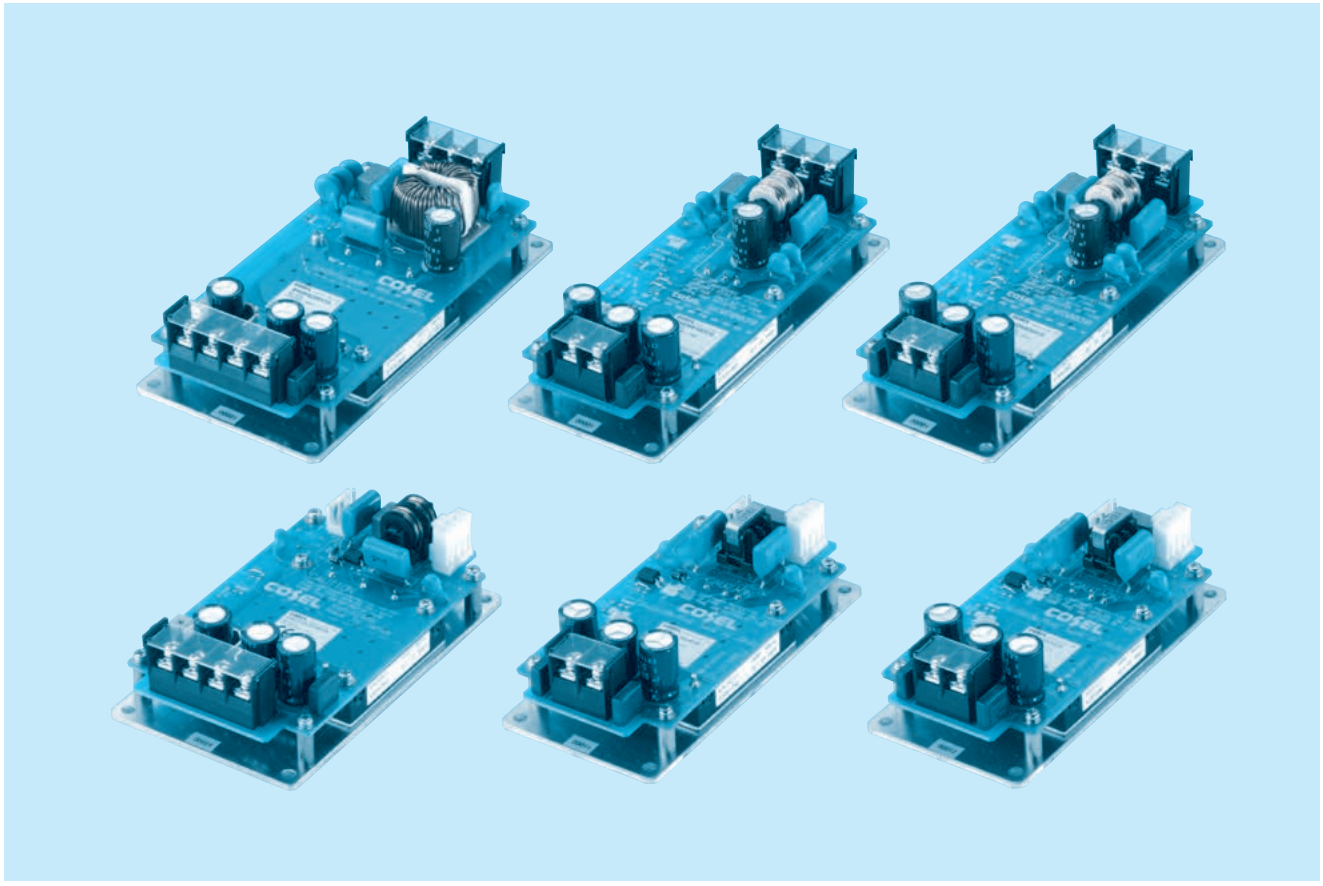
Isolated OCP OVP Remote ON/OFF

SNDHS-series



Features

Compact DC-DC Converter, SNDHS series includes DHS series
High efficiency
Built-in overcurrent, overvoltage and thermal protection circuits
Built-in remote ON/OFF (secondary is an optional)
Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)
AC-DC Converter can be constituted in combination with SNDPG series (only SNDHS50B/SNDHS100B/SNDHS250B)

CE marking

Low Voltage Directive
RoHS Directive

UKCA marking

Electrical Equipment Safety Regulations
RoHS Regulations

Safety agency approvals

UL60950-1, C-UL and EN62368-1

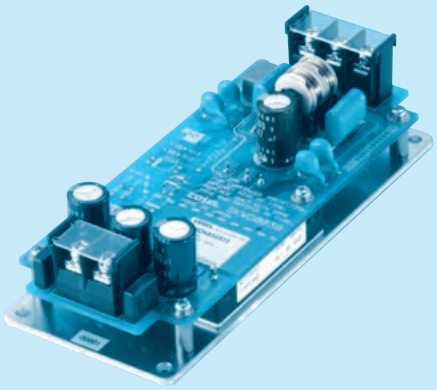
3-year warranty

COSEL DC-DC Converters Bus Converter・Power Module Value-added Type

SNDHS50A

Ordering information

SNDH ① S ② 50 ③ A ④ 05 ⑤ -□ ⑥



①Series name
②Single output
③Output wattage
④A : DC60-160V
⑤Output voltage
⑥Optional
C : with Coating
R : with Remote ON/OFF

Please refer to Instruction manual 7.

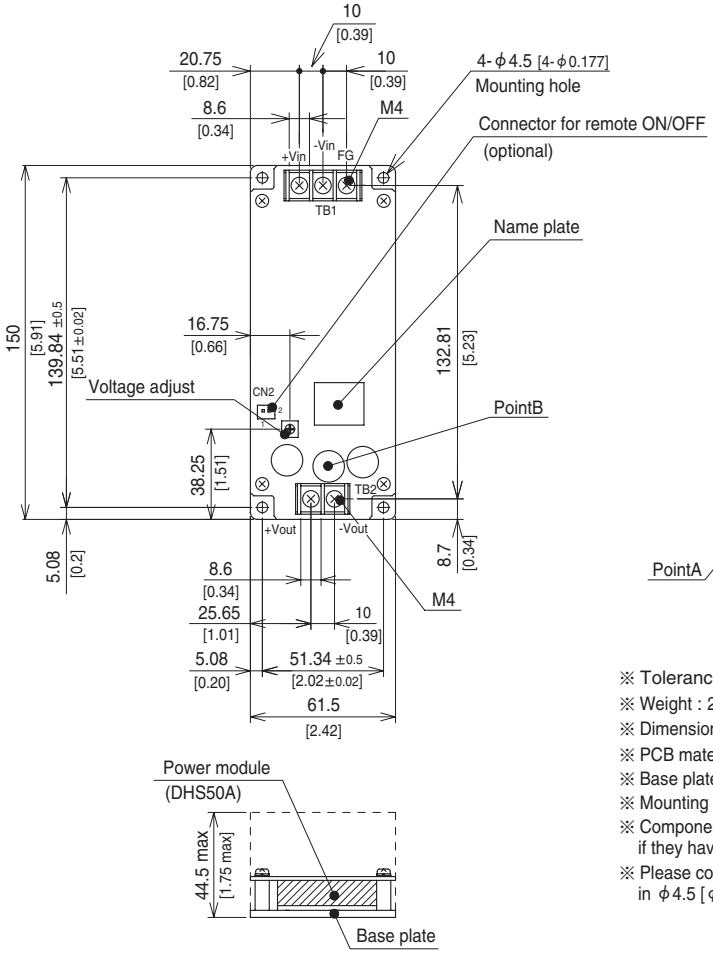
MODEL	SNDHS50A05	SNDHS50A12	SNDHS50A15	SNDHS50A24
MAX OUTPUT WATTAGE[W]	50.0	50.4	51.0	50.4
DC OUTPUT	5V 10A	12V 4.2A	15V 3.4A	24V 2.1A

SPECIFICATIONS

	MODEL		SNDHS50A05	SNDHS50A12	SNDHS50A15	SNDHS50A24
INPUT	VOLTAGE[V]		DC60 - 160			
	CURRENT[A]	*1	0.55typ	0.55typ	0.55typ	0.55typ
	EFFICIENCY[%]	*1	83.0typ	85.0typ	85.0typ	85.0typ
OUTPUT	VOLTAGE[V]		5	12	15	24
	CURRENT[A]		10	4.2	3.4	2.1
	LINE REGULATION[mV]		10max	24max	30max	48max
	LOAD REGULATION[mV]		150max	100max	100max	100max
	RIPPLE[mVp-p]	0 to +95℃ *2	80max	120max	120max	120max
		-20 to 0℃ *2	120max	150max	150max	150max
		0 to 15% Load *2	160max	240max	240max	240max
	RIPPLE NOISE[mVp-p]	0 to +95℃ *2	160max	200max	200max	200max
		-20 to 0℃ *2	250max	280max	280max	280max
		0 to 15% Load *2	300max	300max	300max	300max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	120max	150max	240max
		-20 to +95℃	100max	240max	300max	480max
	DRIFT[mV]	*3	20max	40max	60max	90max
	START-UP TIME[ms]		200max (DCIN 110V, Io=100%)			
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	*4	4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40
	OUTPUT VOLTAGE SETTING[V]		5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically			
	OVERVOLTAGE PROTECTION[V]		6.30 - 7.60	13.90 - 17.55	17.25 - 21.75	27.60 - 34.80
	REMOTE SENSING		None			
	REMOTE ON/OFF (RC)		Optional (Required external power source)			
ISOLATION	INPUT-OUTPUT, RC	*5	AC3,000V 1minute, Cutoff current = 15mA, DC500V 50MΩ min (20±15℃)			
	INPUT-FG		AC2,000V 1minute, Cutoff current = 15mA, DC500V 50MΩ min (20±15℃)			
	OUTPUT, RC-FG	*5	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (20±15℃)			
	OUTPUT-RC	*5	AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (20±15℃)			
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	*6	-20 to +95℃ (Aluminum base plate of the power module), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max			
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +95℃, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max			
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis			
	IMPACT		196.1m/s² (20G), 11ms, once each along X, Y and Z axis			
SAFETY	AGENCY APPROVALS		UL60950-1, C-UL, EN62368-1			
	CONDUCTED NOISE (at only DC input)		Complies with FCC-A, VCCI-A, CISPR22-A, EN55011-A, EN55022-A			
OTHERS	CASE SIZE/WEIGHT		61.5×44.5×150mm [2.42×1.75×5.91 inches] (W×H×D) / 270g max			
	COOLING METHOD		Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)			

*1 At rated input(DC110V) and rated load.
*2 Ripple and ripple noise is measured by using measuring board with capacitor of 22μF at 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2.
*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
*4 Refer to the instruction manual 4.6.
*5 Applicable when remote control (optional) is added.
*6 Refer to the instruction manual 6.2.

External view



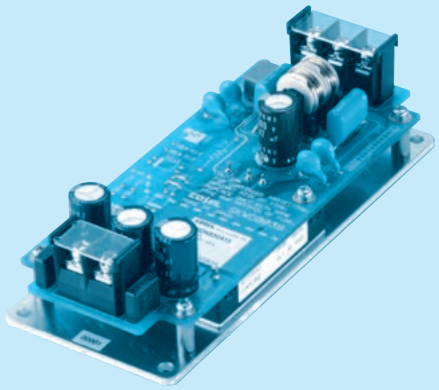
※ Tolerance : ±1 [±0.04]
※ Weight : 270g max
※ Dimensions in mm, [ ]=inches
※ PCB material/thickness : FR-4 / 1.6mm [0.06]
※ Base plate material/thickness : Alminum / 3.0mm[0.12]
※ Mounting torque : 1.6N · m (16.9kgf · cm) max
※ Component positions and sizes are for your reference if they have no dimensions.
※ Please connect safety ground to the base plate in φ4.5 [φ0.177] hole.

COSEL DC-DC Converters Bus Converter・Power Module Value-added Type

SNDHS100A

Ordering information

SNDH ① S ② 100 ③ A ④ 05 ⑤ -□ ⑥



①Series name
②Single output
③Output wattage
④A : DC60-160V
⑤Output voltage
⑥Optional
C : with Coating
R : with Remote ON/OFF

Please refer to Instruction manual 7.

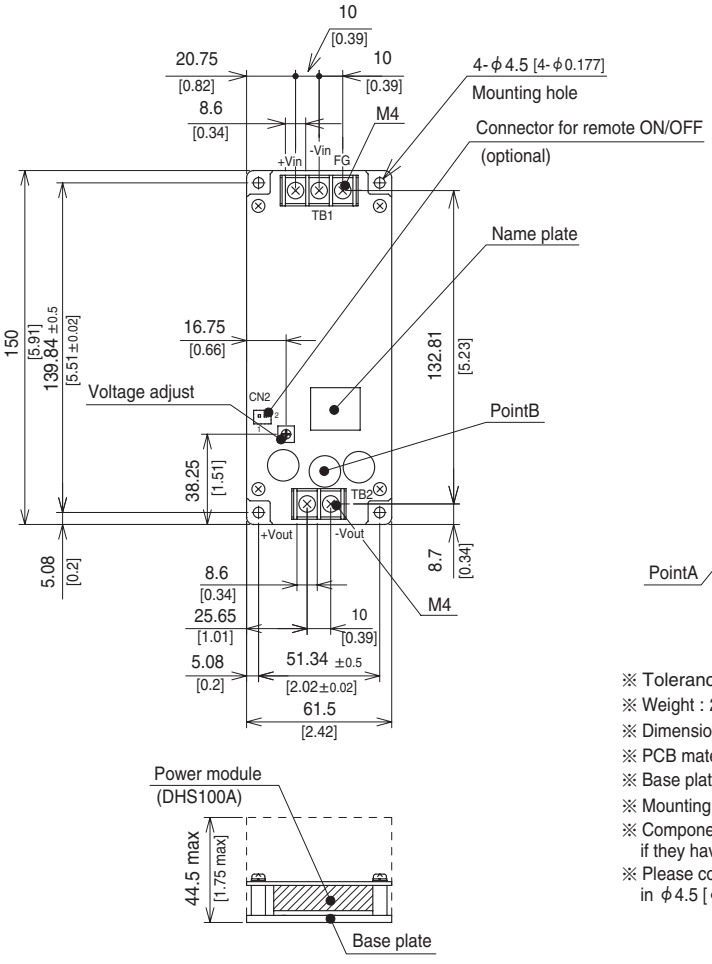
MODEL	SNDHS100A05	SNDHS100A12	SNDHS100A15	SNDHS100A24
MAX OUTPUT WATTAGE[W]	100.0	100.8	100.5	100.8
DC OUTPUT	5V 20A	12V 8.4A	15V 6.7A	24V 4.2A

SPECIFICATIONS

	MODEL		SNDHS100A05	SNDHS100A12	SNDHS100A15	SNDHS100A24
INPUT	VOLTAGE[V]		DC60 - 160			
	CURRENT[A]	*1	1.1typ	1.1typ	1.1typ	1.1typ
	EFFICIENCY[%]	*1	84.0typ	87.0typ	87.0typ	87.0typ
OUTPUT	VOLTAGE[V]		5	12	15	24
	CURRENT[A]		20	8.4	6.7	4.2
	LINE REGULATION[mV]		10max	24max	30max	48max
	LOAD REGULATION[mV]		150max	100max	100max	100max
	RIPPLE[mVp-p]	0 to +95℃ *2	80max	120max	120max	120max
		-20 to 0℃ *2	120max	150max	150max	150max
		0 to 15% Load *2	160max	240max	240max	240max
	RIPPLE NOISE[mVp-p]	0 to +95℃ *2	160max	200max	200max	200max
		-20 to 0℃ *2	250max	280max	280max	280max
		0 to 15% Load *2	300max	300max	300max	300max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	120max	150max	240max
		-20 to +95℃	100max	240max	300max	480max
	DRIFT[mV]	*3	20max	40max	60max	90max
	START-UP TIME[ms]		200max (DCIN 110V, Io=100%)			
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	*4	4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40
	OUTPUT VOLTAGE SETTING[V]		5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically			
	OVERVOLTAGE PROTECTION[V]		6.30 - 7.60	13.90 - 17.55	17.25 - 21.75	27.60 - 34.80
	REMOTE SENSING		None			
	REMOTE ON/OFF (RC)		Optional (Required external power source)			
ISOLATION	INPUT-OUTPUT, RC	*5	AC3,000V 1minute, Cutoff current = 15mA, DC500V 50MΩ min (20±15℃)			
	INPUT-FG		AC2,000V 1minute, Cutoff current = 15mA, DC500V 50MΩ min (20±15℃)			
	OUTPUT, RC-FG	*5	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (20±15℃)			
	OUTPUT-RC	*5	AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (20±15℃)			
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	*6	-20 to +95℃ (Aluminum base plate of the power module), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max			
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +95℃, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max			
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis			
	IMPACT		196.1m/s² (20G), 11ms, once each along X, Y and Z axis			
SAFETY	AGENCY APPROVALS		UL60950-1, C-UL, EN62368-1			
	CONDUCTED NOISE (at only DC input)		Complies with FCC-A, VCCI-A, CISPR22-A, EN55011-A, EN55022-A			
OTHERS	CASE SIZE/WEIGHT		61.5×44.5×150mm [2.42×1.75×5.91 inches] (W×H×D) / 270g max			
	COOLING METHOD		Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)			

*1 At rated input(DC110V) and rated load.
*2 Ripple and ripple noise is measured by using measuring board with capacitor of 22μF at 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2.
*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
*4 Refer to the instruction manual 4.6.
*5 Applicable when remote control (optional) is added.
*6 Refer to the instruction manual 6.2.

External view



※ Tolerance : ±1 [±0.04]
※ Weight : 270g max
※ Dimensions in mm, [ ]=inches
※ PCB material/thickness : FR-4 / 1.6mm [0.06]
※ Base plate material/thickness : Alminum / 3.0mm[0.12]
※ Mounting torque : 1.6N · m (16.9kgf · cm) max
※ Component positions and sizes are for your reference if they have no dimensions.
※ Please connect safety ground to the base plate in φ4.5 [φ0.177] hole.

COSEL DC-DC Converters Bus Converter・Power Module Value-added Type

SNDHS200A

Ordering information

SNDH ① S ② 200 ③ A ④ 05 ⑤ -□ ⑥

①Series name
②Single output
③Output wattage
④A : DC60-160V
⑤Output voltage
⑥Optional
C : with Coating
R : with Remote ON/OFF

Please refer to Instruction manual 7.

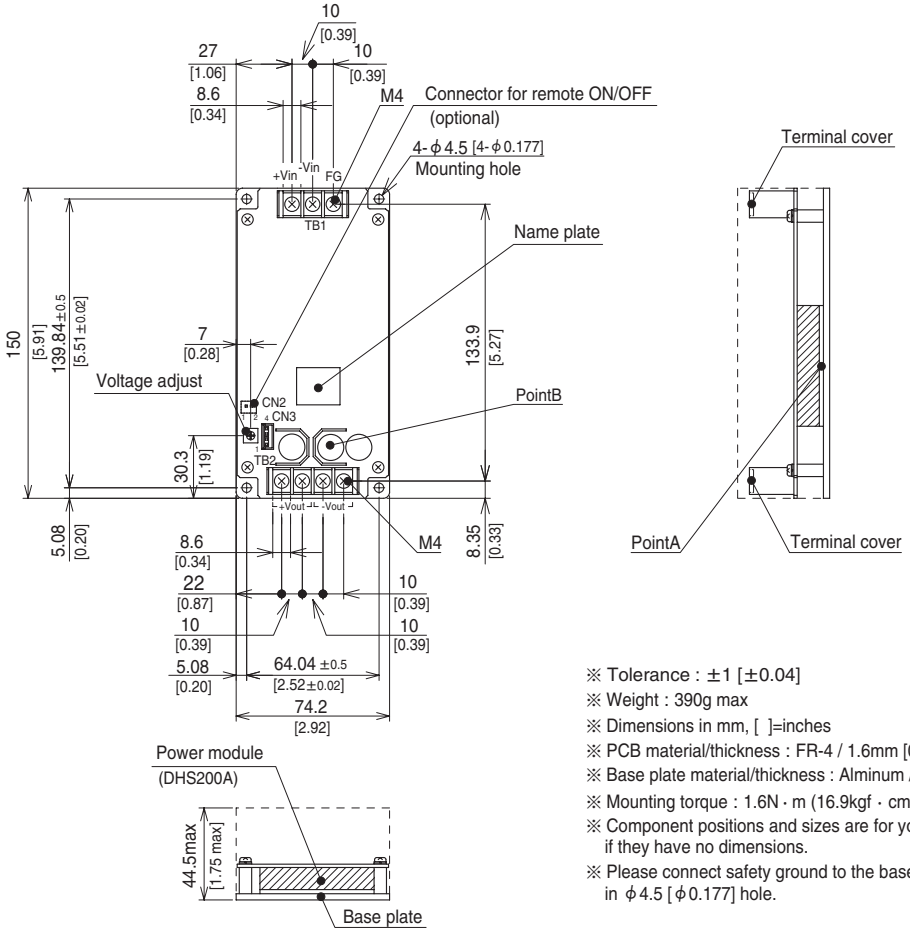
MODEL	SNDHS200A05	SNDHS200A12	SNDHS200A15	SNDHS200A24
MAX OUTPUT WATTAGE[W]	200.0	200.4	201.0	201.6
DC OUTPUT	5V 40A	12V 16.7A	15V 13.4A	24V 8.4A

SPECIFICATIONS

	MODEL		SNDHS200A05	SNDHS200A12	SNDHS200A15	SNDHS200A24
INPUT	VOLTAGE[V]		DC60 - 160			
	CURRENT[A]	*1	2.1typ	2.1typ	2.1typ	2.1typ
	EFFICIENCY[%]	*1	87.0typ	87.0typ	87.0typ	87.0typ
OUTPUT	VOLTAGE[V]		5	12	15	24
	CURRENT[A]		40	16.7	13.4	8.4
	LINE REGULATION[mV]		10max	24max	30max	48max
	LOAD REGULATION[mV]		150max	100max	100max	100max
	RIPPLE[mVp-p]	0 to +95℃ *2	80max	120max	120max	120max
		-20 to 0℃ *2	120max	150max	150max	150max
		0 to 15% Load *2	160max	240max	240max	240max
	RIPPLE NOISE[mVp-p]	0 to +95℃ *2	160max	200max	200max	200max
		-20 to 0℃ *2	250max	280max	280max	280max
		0 to 15% Load *2	300max	300max	300max	300max
	TEMPERATURE REGULATION[mV]	0 to +50℃	50max	120max	150max	240max
		-20 to +95℃	100max	240max	300max	480max
	DRIFT[mV]	*3	20max	40max	60max	90max
	START-UP TIME[ms]		200max (DCIN 110V, Io=100%)			
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	*4	4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40
	OUTPUT VOLTAGE SETTING[V]		5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically			
	OVERVOLTAGE PROTECTION[V]		6.30 - 7.60	13.90 - 16.35	17.25 - 20.25	27.60 - 32.40
	REMOTE SENSING		Provided			
	REMOTE ON/OFF (RC)		Optional (Required external power source)			
ISOLATION	INPUT-OUTPUT, RC	*5	AC3,000V 1minute, Cutoff current = 15mA, DC500V 50MΩ min (20±15℃)			
	INPUT-FG		AC2,000V 1minute, Cutoff current = 15mA, DC500V 50MΩ min (20±15℃)			
	OUTPUT, RC-FG	*5	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (20±15℃)			
	OUTPUT-RC	*5	AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (20±15℃)			
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	*6	-20 to +95℃ (Aluminum base plate of the power module), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max			
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +95℃, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max			
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis			
	IMPACT		196.1m/s² (20G), 11ms, once each along X, Y and Z axis			
SAFETY	AGENCY APPROVALS		UL60950-1, C-UL, EN62368-1			
	CONDUCTED NOISE (at only DC input)		Complies with FCC-A, VCCI-A, CISPR22-A, EN55011-A, EN55022-A			
OTHERS	CASE SIZE/WEIGHT		74.2×44.5×150mm [2.92×1.75×5.91 inches](W×H×D) / 390g max			
	COOLING METHOD		Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)			

*1 At rated input(DC110V) and rated load.
*2 Ripple and ripple noise is measured by using measuring board with capacitor of 22μF at 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2.
*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
*4 Refer to the instruction manual 4.6.
*5 Applicable when remote control (optional) is added.
*6 Refer to the instruction manual 6.2.

External view



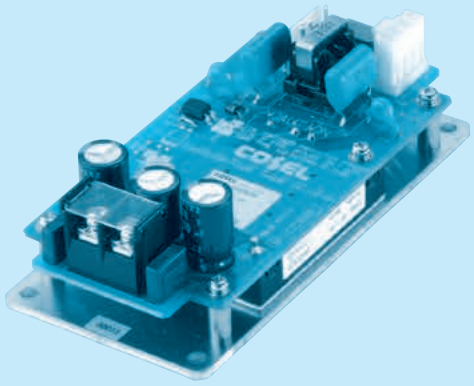
※ Tolerance : ±1 [±0.04]
※ Weight : 390g max
※ Dimensions in mm, [ ]=inches
※ PCB material/thickness : FR-4 / 1.6mm [0.06]
※ Base plate material/thickness : Alminum / 3.0mm[0.12]
※ Mounting torque : 1.6N・m (16.9kgf・cm) max
※ Component positions and sizes are for your reference if they have no dimensions.
※ Please connect safety ground to the base plate in φ4.5 [φ0.177] hole.

COSEL DC-DC Converters Bus Converter・Power Module Value-added Type

SNDHS50B

Ordering information

SNDH S 50 B 05 -□
① ② ③ ④ ⑤ ⑥



①Series name
②Single output
③Output wattage
④B : DC200-400V
⑤Output voltage
⑥Optional
C : with Coating
R : with a function not to need external power source

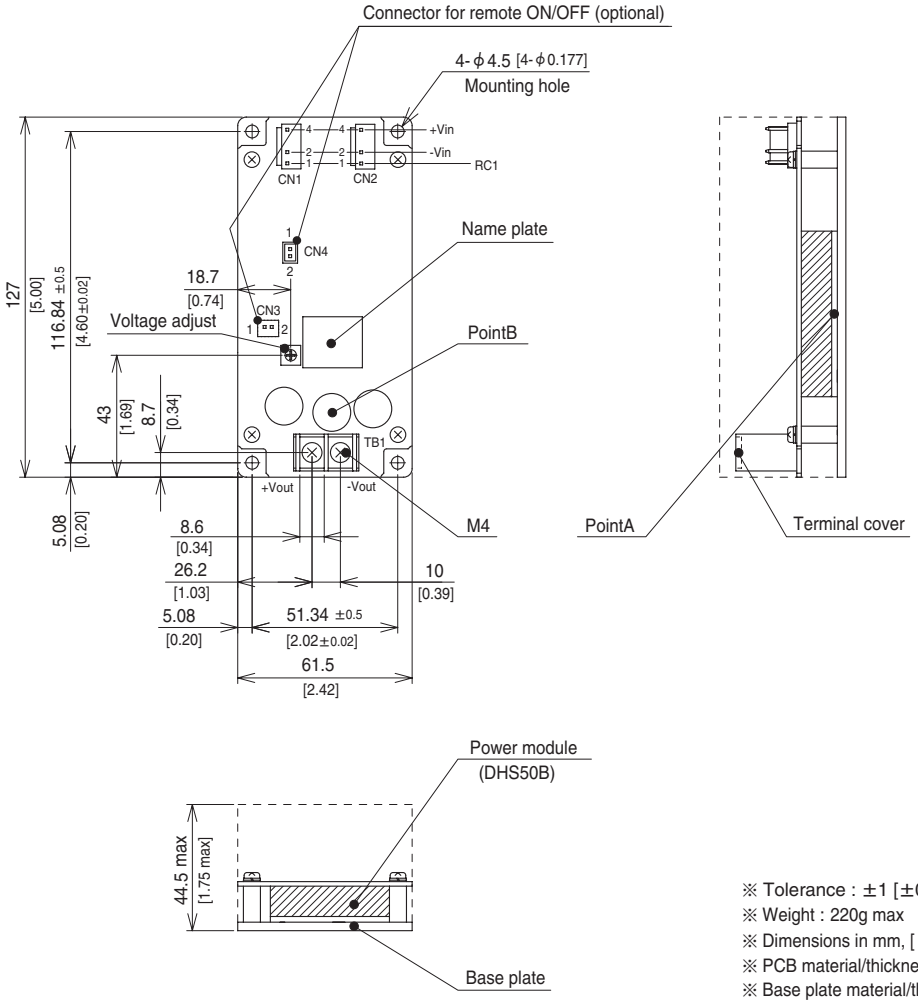
MODEL	SNDHS50B03	SNDHS50B05	SNDHS50B12	SNDHS50B15	SNDHS50B24	SNDHS50B28
MAX OUTPUT WATTAGE[W]	33.0	50.0	50.4	51.0	50.4	50.4
DC OUTPUT	3.3V 10A	5V 10A	12V 4.2A	15V 3.4A	24V 2.1A	28V 1.8A

SPECIFICATIONS

	MODEL		SNDHS50B03	SNDHS50B05	SNDHS50B12	SNDHS50B15	SNDHS50B24	SNDHS50B28
INPUT	VOLTAGE[V]		DC200 - 400 (Prepare another power supply to the RC1 terminal ＊5)					
	CURRENT[A]	＊1	0.15typ	0.22typ	0.22typ	0.22typ	0.22typ	0.22typ
	EFFICIENCY[%]	＊1	76.0typ	79.0typ	82.0typ	82.0typ	82.0typ	82.0typ
OUTPUT	VOLTAGE[V]		3.3	5	12	15	24	28
	CURRENT[A]		10	10	4.2	3.4	2.1	1.8
	LINE REGULATION[mV]		10max	10max	24max	30max	48max	56max
	LOAD REGULATION[mV]		150max	150max	100max	100max	100max	100max
	RIPPLE[mVp-p]	0 to +95℃ ＊2	80max	80max	120max	120max	120max	120max
		-20 to 0℃ ＊2	120max	120max	150max	150max	150max	150max
		0 to 15% Load ＊2	160max	160max	240max	240max	240max	240max
	RIPPLE NOISE[mVp-p]	0 to +95℃ ＊2	160max	160max	200max	200max	200max	200max
		-20 to 0℃ ＊2	250max	250max	280max	280max	280max	280max
		0 to 15% Load ＊2	300max	300max	300max	300max	300max	300max
	TEMPERATURE REGULATION[mV]	0 to +50℃	35max	50max	120max	150max	240max	280max
		-20 to +95℃	66max	100max	240max	300max	480max	560max
	DRIFT[mV]	＊3	16max	20max	40max	60max	90max	90max
	START-UP TIME[ms]		200max (DCIN 280V, Io=100%)					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	＊4	2.97 - 3.63	4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40	25.20 - 30.80
	OUTPUT VOLTAGE SETTING[V]		3.30 - 3.40	5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	28.00 - 29.12
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically					
	OVERVOLTAGE PROTECTION[V]		4.20 - 5.70	6.30 - 7.60	13.90 - 17.55	17.25 - 21.75	27.60 - 34.80	32.20 - 40.60
	REMOTE SENSING		None					
	REMOTE ON/OFF (RC1)	＊6	Provided (Logic H : ON, L :OFF) Required external power source					
ISOLATION	INPUT-OUTPUT, RC2	＊8	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)					
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)					
	OUTPUT, RC2-FG	＊8	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (20±15℃)					
	OUTPUT-RC2	＊8	AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (20±15℃)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	＊7	-20 to +95℃ (Aluminum base plate of the power module), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max					
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +95℃, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max					
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT		196.1m/s² (20G), 11ms, once each along X, Y and Z axis					
SAFETY	AGENCY APPROVALS		UL60950-1, C-UL, EN62368-1					
OTHERS	CASE SIZE/WEIGHT		61.5×44.5×127mm [2.42×1.75×5.0 inches] (W×H×D) / 220g max					
	COOLING METHOD		Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)					

＊1 At rated input(DC280V) and rated load.
＊2 Ripple and ripple noise is measured by using measuring board with capacitor of 22μF at 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2.
＊3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
＊4 Refer to the instruction manual 4.6.
＊5 Refer to the instruction manual 2, 4.4
＊6 Refer to the instruction manual 4.4
＊7 Refer to the instruction manual 6.2
＊8 "RC2" is applicable to an option not to need external power source.

External view



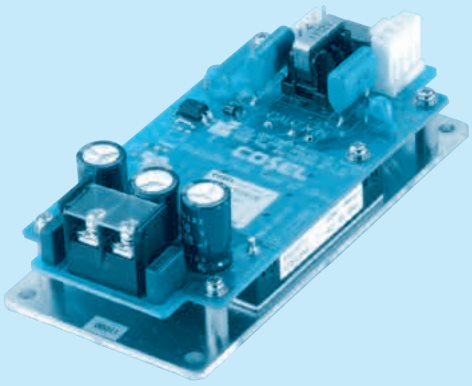
※ Tolerance : ±1 [±0.04]
※ Weight : 220g max
※ Dimensions in mm, [ ]=inches
※ PCB material/thickness : FR-4 / 1.6mm [0.06]
※ Base plate material/thickness : Alminum / 3.0mm[0.12]
※ Screw tightening torque : 1.6N・m (16.9kgf・cm) max
※ Component positions and sizes are for your reference if they have no dimensions.
※ Please connect safety ground to the base plate in φ4.5 [φ0.177] hole.

COSEL DC-DC Converters Bus Converter・Power Module Value-added Type

SNDHS100B

Ordering information

SNDH S 100 B 05 -□
① ② ③ ④ ⑤ ⑥



①Series name
②Single output
③Output wattage
④B : DC200-400V
⑤Output voltage
⑥Optional
C : with Coating
R : with a function not to need external power source

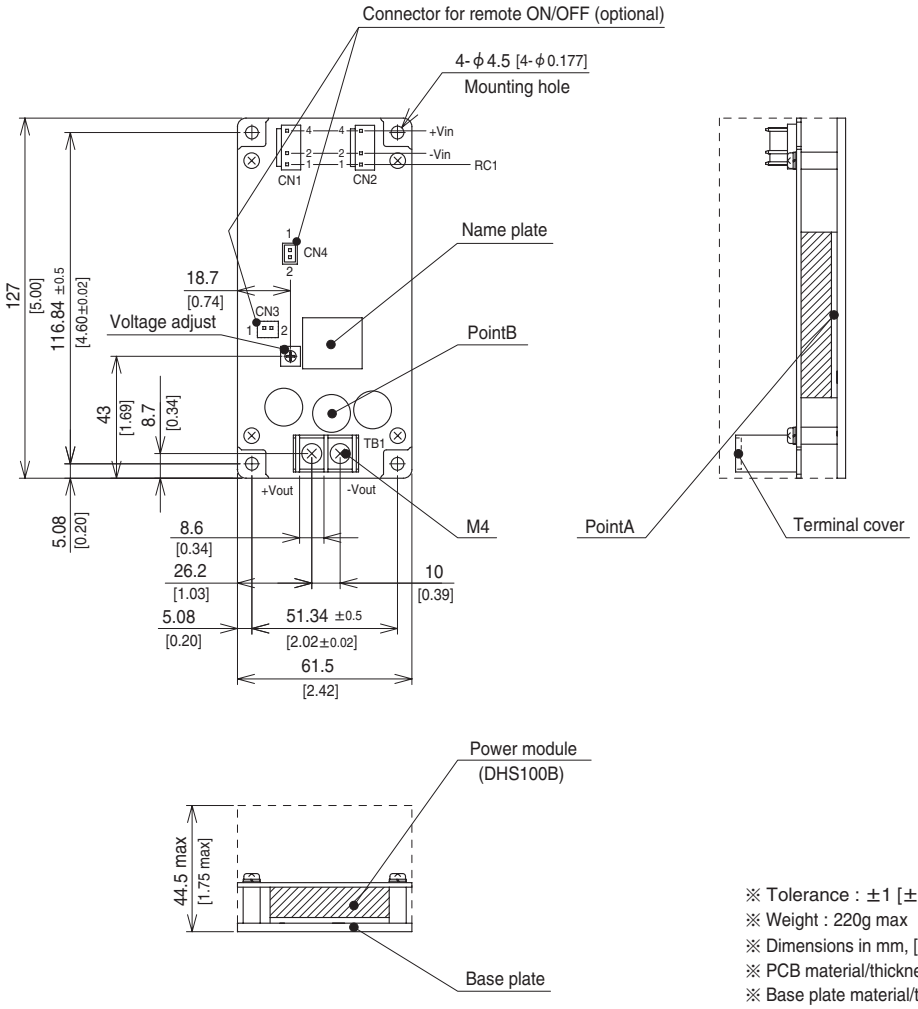
MODEL	SNDHS100B03	SNDHS100B05	SNDHS100B12	SNDHS100B15	SNDHS100B24	SNDHS100B28
MAX OUTPUT WATTAGE[W]	66.0	100.0	100.8	100.5	100.8	100.8
DC OUTPUT	3.3V 20A	5V 20A	12V 8.4A	15V 6.7A	24V 4.2A	28V 3.6A

SPECIFICATIONS

	MODEL		SNDHS100B03	SNDHS100B05	SNDHS100B12	SNDHS100B15	SNDHS100B24	SNDHS100B28
INPUT	VOLTAGE[V]		DC200 - 400 (Prepare another power supply to the RC1 terminal *5)					
	CURRENT[A]	*1	0.30typ	0.44typ	0.42typ	0.42typ	0.42typ	0.42typ
	EFFICIENCY[%]	*1	78.0typ	81.0typ	84.0typ	85.0typ	85.0typ	85.0typ
OUTPUT	VOLTAGE[V]		3.3	5	12	15	24	28
	CURRENT[A]		20	20	8.4	6.7	4.2	3.6
	LINE REGULATION[mV]		10max	10max	24max	30max	48max	56max
	LOAD REGULATION[mV]		150max	150max	100max	100max	100max	100max
	RIPPLE[mVp-p]	0 to +95℃ *2	80max	80max	120max	120max	120max	120max
		-20 to 0℃ *2	120max	120max	150max	150max	150max	150max
		0 to 15% Load *2	160max	160max	240max	240max	240max	240max
	RIPPLE NOISE[mVp-p]	0 to +95℃ *2	160max	160max	200max	200max	200max	200max
		-20 to 0℃ *2	250max	250max	280max	280max	280max	280max
		0 to 15% Load *2	300max	300max	300max	300max	300max	300max
	TEMPERATURE REGULATION[mV]	0 to +50℃	35max	50max	120max	150max	240max	280max
		-20 to +95℃	66max	100max	240max	300max	480max	560max
	DRIFT[mV]	*3	16max	20max	40max	60max	90max	90max
	START-UP TIME[ms]		200max (DCIN 280V, Io=100%)					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	*4	2.97 - 3.63	4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40	25.20 - 30.80
	OUTPUT VOLTAGE SETTING[V]		3.30 - 3.40	5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	28.00 - 29.12
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically					
	OVERVOLTAGE PROTECTION[V]		4.20 - 5.70	6.30 - 7.60	13.90 - 17.55	17.25 - 21.75	27.60 - 34.80	32.20 - 40.60
	REMOTE SENSING		None					
	REMOTE ON/OFF (RC1)	*6	Provided (Logic H : ON, L :OFF) Required external power source					
ISOLATION	INPUT-OUTPUT, RC2	*8	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)					
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)					
	OUTPUT, RC2-FG	*8	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (20±15℃)					
	OUTPUT-RC2	*8	AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (20±15℃)					
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	*7	-20 to +95℃ (Aluminum base plate of the power module), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max					
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +95℃, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max					
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis					
	IMPACT		196.1m/s² (20G), 11ms, once each along X, Y and Z axis					
SAFETY	AGENCY APPROVALS		UL60950-1, C-UL, EN62368-1					
OTHERS	CASE SIZE/WEIGHT		61.5×44.5×127mm [2.42×1.75×5.0 inches] (W×H×D) / 220g max					
	COOLING METHOD		Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)					

*1 At rated input(DC280V) and rated load.
*2 Ripple and ripple noise is measured by using measuring board with capacitor of 22μF at 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2.
*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
*4 Refer to the instruction manual 4.6.
*5 Refer to the instruction manual 2, 4.4
*6 Refer to the instruction manual 4.4
*7 Refer to the instruction manual 6.2
*8 "RC2" is applicable to an option not to need external power source.

External view



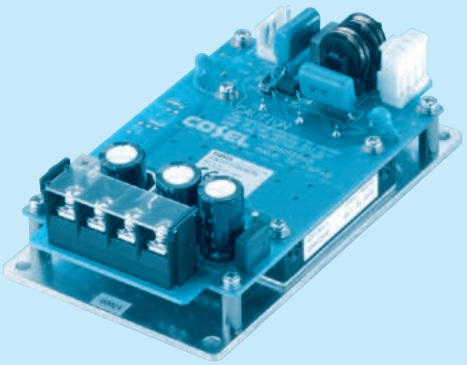
※ Tolerance : ±1 [±0.04]
※ Weight : 220g max
※ Dimensions in mm, [ ]=inches
※ PCB material/thickness : FR-4 / 1.6mm [0.06]
※ Base plate material/thickness : Alminum / 3.0mm[0.12]
※ Screw tightening torque : 1.6N · m (16.9kgf · cm) max
※ Component positions and sizes are for your reference if they have no dimensions.
※ Please connect safety ground to the base plate in φ4.5 [φ0.177] hole.

COSEL DC-DC Converters Bus Converter・Power Module Value-added Type

SNDHS250B

Ordering information

SNDH S 250 B 05 -□
① ② ③ ④ ⑤ ⑥



①Series name
②Single output
③Output wattage
④B : DC200-400V
⑤Output voltage
⑥Optional
C : with Coating
R : with a function not to need external power source

MODEL	SNDHS250B03	SNDHS250B05	SNDHS250B07	SNDHS250B12	SNDHS250B15	SNDHS250B24	SNDHS250B28	SNDHS250B48
MAX OUTPUT WATTAGE[W]	165.0	250.0	247.5	252.0	247.5	252.0	252.0	249.6
DC OUTPUT	3.3V 50A	5V 50A	7.5V 33A	12V 21A	15V 16.5A	24V 10.5A	28V 9.0A	48V 5.2A

SPECIFICATIONS

	MODEL		SNDHS250B03	SNDHS250B05	SNDHS250B07	SNDHS250B12	SNDHS250B15	SNDHS250B24	SNDHS250B28	SNDHS250B48
INPUT	VOLTAGE[V]		DC200 - 400 (Prepare another power supply to the RC1 terminal ＊5)							
	CURRENT[A]	＊1	0.67typ	1.0typ	1.0typ	1.0typ	1.0typ	1.0typ	1.0typ	1.0typ
	EFFICIENCY[%]	＊1	86.0typ	88.0typ	86.0typ	86.0typ	86.0typ	86.0typ	86.0typ	87.0typ
OUTPUT	VOLTAGE[V]		3.3	5	7.5	12	15	24	28	48
	CURRENT[A]		50	50	33	21	16.5	10.5	9.0	5.2
	LINE REGULATION[mV]		10max	10max	20max	24max	30max	48max	56max	96max
	LOAD REGULATION[mV]		150max	150max	150max	100max	100max	100max	100max	100max
	RIPPLE[mVp-p]	0 to +95℃ ＊2	80max	80max	100max	120max	120max	120max	120max	200max
		-20 to 0℃ ＊2	120max	120max	130max	150max	150max	150max	150max	250max
		0 to 15% Load ＊2	160max	160max	200max	240max	240max	240max	240max	400max
	RIPPLE NOISE[mVp-p]	0 to +95℃ ＊2	160max	160max	200max	200max	200max	200max	200max	250max
		-20 to 0℃ ＊2	250max	250max	280max	280max	280max	280max	280max	400max
		0 to 15% Load ＊2	300max	300max	300max	300max	300max	300max	300max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃	35max	50max	70max	120max	150max	240max	280max	480max
		-20 to +95℃	66max	100max	140max	240max	300max	480max	560max	960max
	DRIFT[mV]	＊3	16max	20max	30max	40max	60max	90max	90max	180max
	START-UP TIME[ms]		200max (DCIN 280V, Io=100%)							
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V]	＊4	2.97 - 3.63	4.50 - 5.50	6.75 - 8.25	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40	25.20 - 30.80	43.20 - 52.80
	OUTPUT VOLTAGE SETTING[V]		3.30 - 3.40	5.00 - 5.15	7.50 - 7.80	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	28.00 - 29.12	48.00 - 49.92
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically							
	OVERVOLTAGE PROTECTION[V]		4.20 - 4.85	6.30 - 7.30	8.70 - 10.20	13.90 - 16.35	17.25 - 20.25	27.60 - 32.40	32.20 - 37.80	55.20 - 64.80
	REMOTE SENSING		Provided							
	REMOTE ON/OFF (RC1)	＊6	Provided (Logic H : ON, L :OFF) Required external power source							
ISOLATION	INPUT-OUTPUT, RC2	＊8	AC3,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)							
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50MΩ min (20±15℃)							
	OUTPUT, RC2-FG	＊8	AC500V 1minute, Cutoff current = 100mA, DC500V 50MΩ min (20±15℃)							
	OUTPUT-RC2	＊8	AC100V 1minute, Cutoff current = 25mA, DC100V 10MΩ min (20±15℃)							
ENVIRONMENT	OPERATING TEMP.,HUMID.AND ALTITUDE	＊7	-20 to +95℃ (Aluminum base plate of the power module), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max							
	STORAGE TEMP.,HUMID.AND ALTITUDE		-20 to +95℃, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max							
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT		196.1m/s² (20G), 11ms, once each along X, Y and Z axis							
SAFETY	AGENCY APPROVALS		UL60950-1, C-UL, EN62368-1							
OTHERS	CASE SIZE/WEIGHT		74.2×44.5×127mm [2.92×1.75×5.0 inches](W×H×D) / 310g max							
	COOLING METHOD		Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)							

＊1 At rated input(DC280V) and rated load.
＊2 Ripple and ripple noise is measured by using measuring board with capacitor of 22μF at 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2.
＊3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25℃, with the input voltage held constant at the rated input/output.
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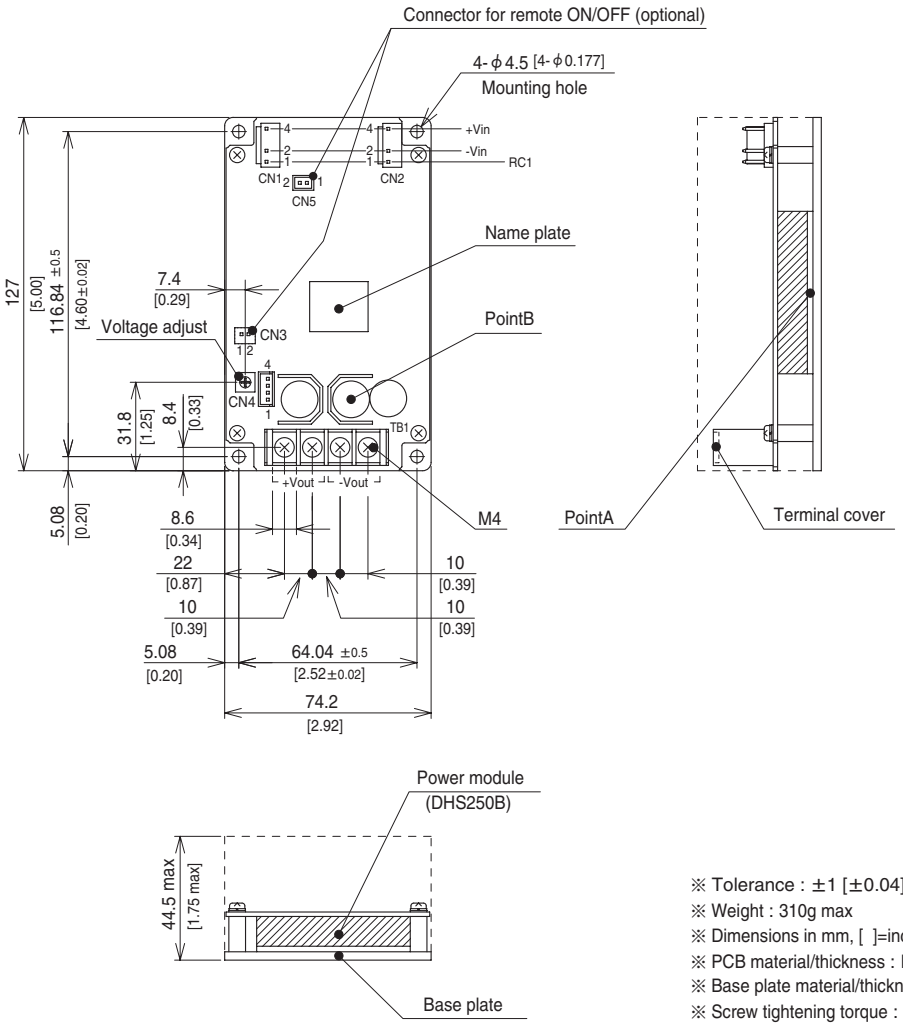
External view



※ Tolerance : ±1 [±0.04]
※ Weight : 310g max
※ Dimensions in mm, [ ]=inches
※ PCB material/thickness : FR-4 / 1.6mm [0.06]
※ Base plate material/thickness : Alminum / 3.0mm[0.12]
※ Screw tightening torque : 1.6N・m (16.9kgf・cm) max
※ Component positions and sizes are for your reference if they have no dimensions.
※ Please connect safety ground to the base plate in φ4.5 [φ0.177] hole.