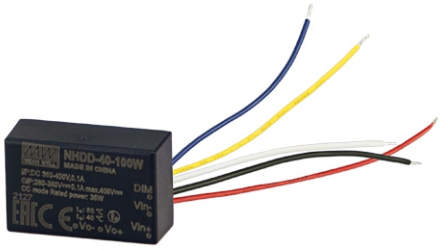
DC-DC Constant Current Driver With DC 380V Input

NHDD-40 series



TPTC004

Features

- Constant Current mode output
- For DC 380V Bus lighting application
- Driver on Board (DOB) Solution available
- Plastic housing and Fully encapsolated
- Built-in PWM and Remote ON/OFF control
- Protections: Short circuit/Over temperature
- 5 years warranty

Applications

- Panel lighting
- Indoor LED lighting
- Recessed lighting
- Linear lighting
- DC house lighting system
- Industrial lighting

GTIN CODE

MW Search: https://www.meanwell.com/serviceGTIN.aspx

Note: Driver on board (DOB) solution is available, including circuit diagram and key components such as Driver IC or choke,please contact MEANWELL for detail.

Description

NHDD-40 series is a DC/DC LED driver. It operates from 360 ~ 420VDC and offers constant current output. Thanks to the efficiency up to 95%, with the fanless design, the NHDD-40 is able to operate for -30℃~+90℃ case temperature under free air convection. In addition,NHDD is a particular design for DC 380V Bus lighting application which can be combination with storage. This coincides with the developing trend that countries around the world have begun to implement of energy saving and carbon neutrality, how to combine renewable energy sources, and effectively integrate DC power grid and energy storage systems. MEAN WELL will continue to provide products corresponding with this goal in order to reduce the loss in the power conversion and create new DC power grid lighting applications.

Model Encoding

NHDD - 40 -100 W

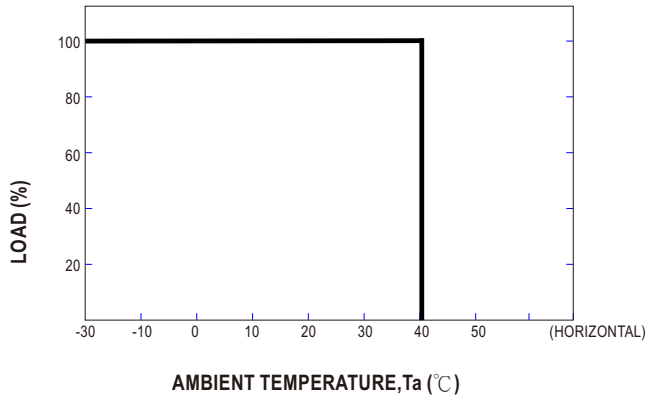
- W: Output style(Blank: Pin style; W:Wire style)
- 100: Output current(100mA)
- 40: Rated wattage
- NHDD: Series name

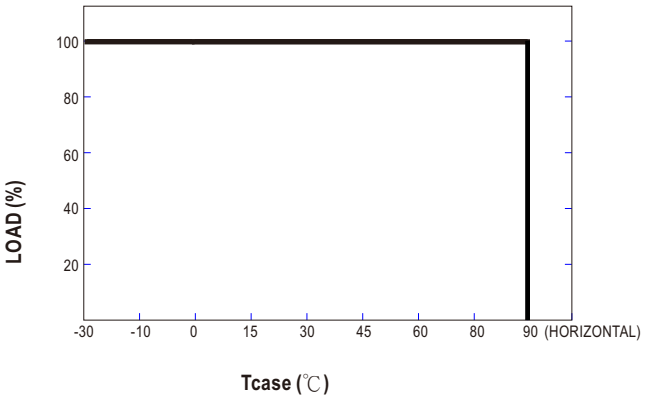
DC-DC Constant Current Driver With DC 380V Input NHDD-40 series

SPECIFICATION

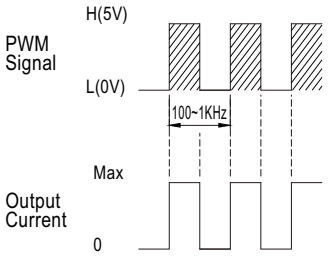
MODEL		NHDD-40-100 ☐
OUTPUT	CURRENT LEVEL	100mA
	RATED POWER	35W (typical)
	DC VOLTAGE RANGE Note.7	350V (typical)
	CURRENT RIPPLE	40% max. @rated current
	CURRENT TOLERANCE	±15%
	SETUP TIME Note.3	500ms / 380VDC
INPUT	VOLTAGE RANGE Note.7	360 ~ 420VDC(typical 380VDC) (Please refer to "STATIC CHARACTERISTIC" section)
	EFFICIENCY (Typ.) Note.4	95%
	DC CURRENT (Typ.)	0.1A/380VDC
PROTECTION	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed
	OVER TEMPERATURE	Tj 150℃ typically(IC1) detect on main control IC
		Protection type: Shut down, recovers automatically after temperature goes down
	REVERSE POLARITY	No damage
FUNCTION	PWM DIMMING	Please refer to "DIMMING OPERATION" section
	REMOTE ON/OFF	Power ON: Leave it open or PWM DIM PIN>1.5~5VDC, Power OFF: PWM DIM PIN <0.9VDC or short
	POWER FREQUENCY	100~1K Hz
	QUIESCENT INPUT CURRENT IN SHUTDOWN MODE(MAX.)	2mA at PWM dimming off at 380V input.
ENVIRONMENT	WORKING TEMP.	Tcase=-30 ~ +40℃ (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)
	MAX. CASE TEMP.	Tcase=+90℃
	WORKING HUMIDITY	20 ~ 90% RH non-condensing
	STORAGE TEMP., HUMIDITY	-40 ~ +80℃, 10 ~ 95% RH
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 50℃)
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes
	SOLDERING TEMPERATURE	Wave soldering: 265℃,5s (max.); Manual soldering: 390℃,3s (max.)
SAFETY & EMC	SAFETY STANDARDS	LVD BS EN/EN61347 and EAC TP TC004 approved
	EMC EMISSION Note.6	Compliance to BS EN/EN55015, EAC TP TC 020
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,6,8, light industry level, criteria A, EAC TP TC 020
OTHERS	MTBF	15362.0K hrs min. Telcordia SR-332 (Bellcore) 2779.1Khrs min. MIL-HDBK-217F (25℃)
	DIMENSION	32.1*20.5*12.5mm or 1.26"*0.8"*0.49" inch (L*W*H)
	WEIGHT	NHDD: 15.6g; NHDD-W: 18g
	POTTING MATERIAC	Expoxy(UL94-V0)
NOTE	1. All parameters NOT specially mentioned are measured at 380VDC input, rated current and 25℃ of ambient temperature. 2. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details. 3. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time. 4. Efficiency is measured at 100mA/380VDC. 5. The driver is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again. 6. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft). 7. Please evaluate this notice carefully to prevent high unexpected output current. Output voltage and total forward voltage of LED must step down at least 40VDC from input voltage. Maximum step down voltage should not exceed 80VDC. ※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx	

■ OUTPUT LOAD vs TEMPERATURE



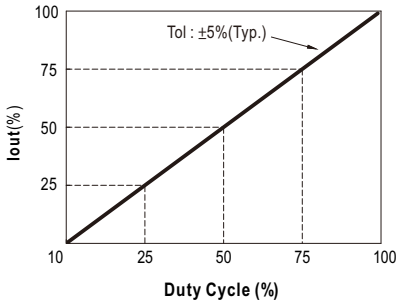


■ PWM Dimming Control

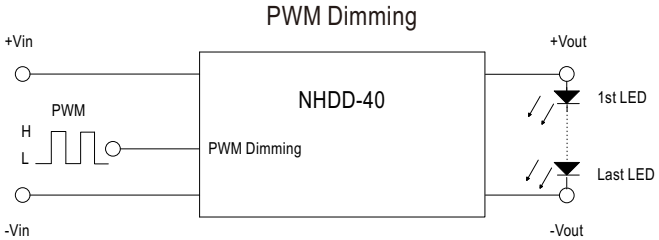


◎ Short circuit PWM PIN can realize dimming turn off.

◎ During PWM dimming operation, the output current will change to PWM style.

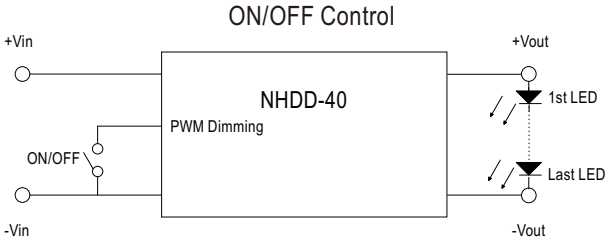


◎ Dimming and ON/OFF control diagram



H: >1.5~5VDC or open circuit

L: <0.9VDC or short

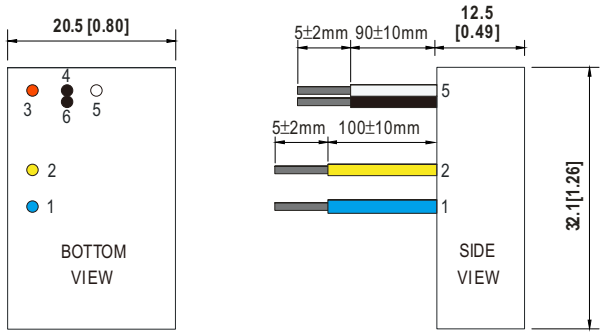


Switch open： DIM ON(100%)

Switch close： DIM OFF

■ Mechanical Specification

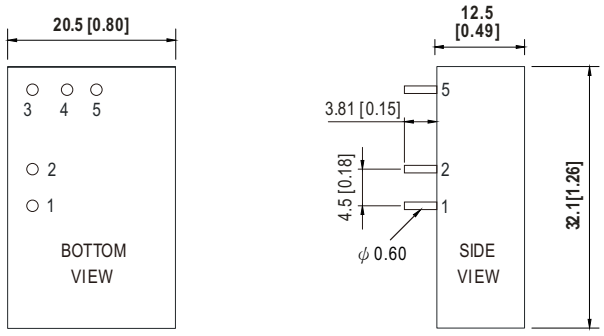
※ Wire style



NOTE: All wires UL1569 22AWG

Pin No.		Comment
1	-Vout (Blue)	LED - Connection
2	+Vout (Yellow)	LED + Connection
3	+Vin (Red)	DC Supply
4	-Vin (Black)	Don't connect to -Vout
5	PWM DIM+ (White)	ON/OFF and PWM Dimming (Leave open if not used)
6	PWM DIM- (Black)	DIM- connection
others	N.C	No connection

※ PIN style



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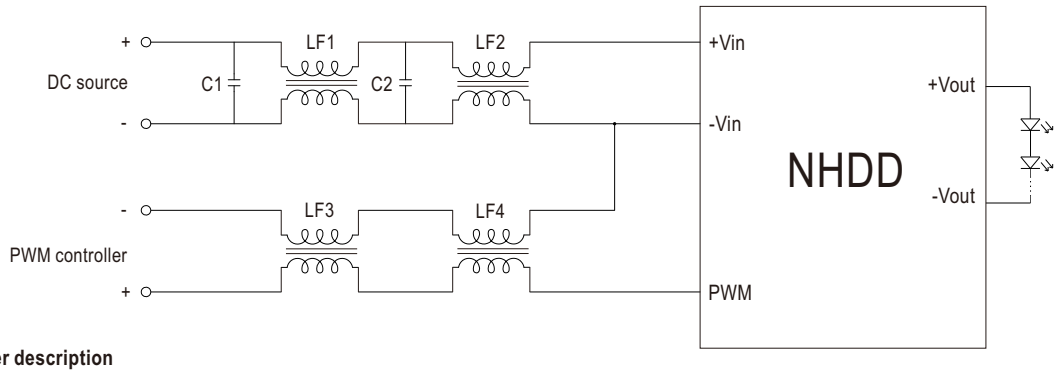
others	N.C	No connection

NOTE: 1. Pin tolerance ±0.05mm
2. PWM DIM- is better to use with a separating wire from -Vin

■ EMI Filter Suggestions

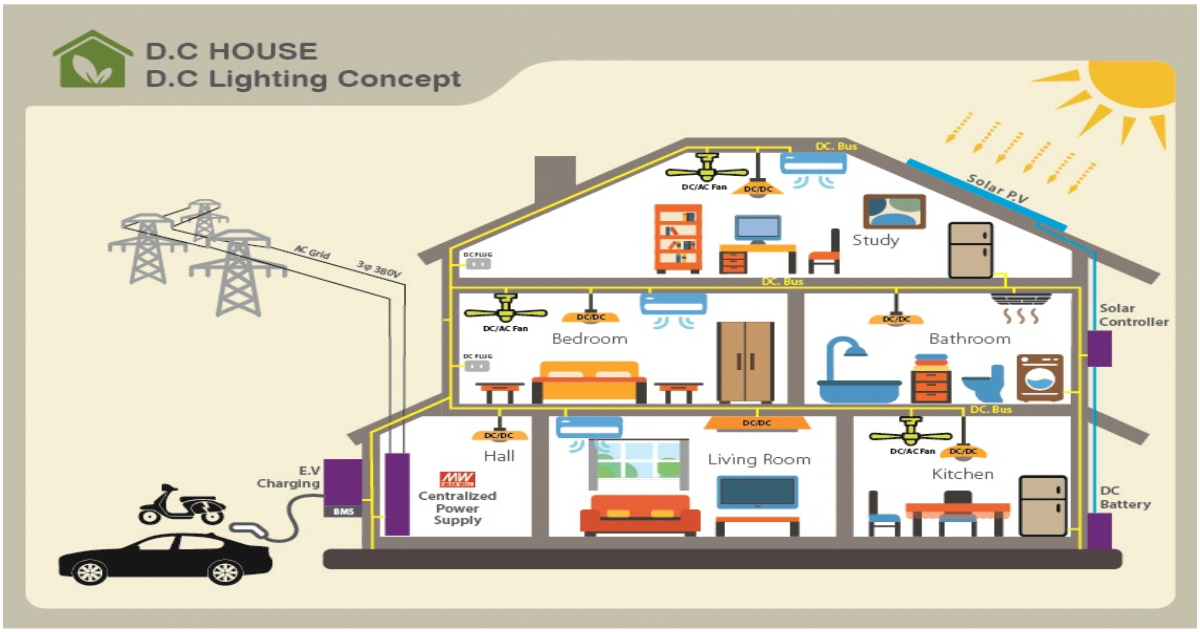
Input Filter to meet Class B Conducted Emissions



※ Parameter description

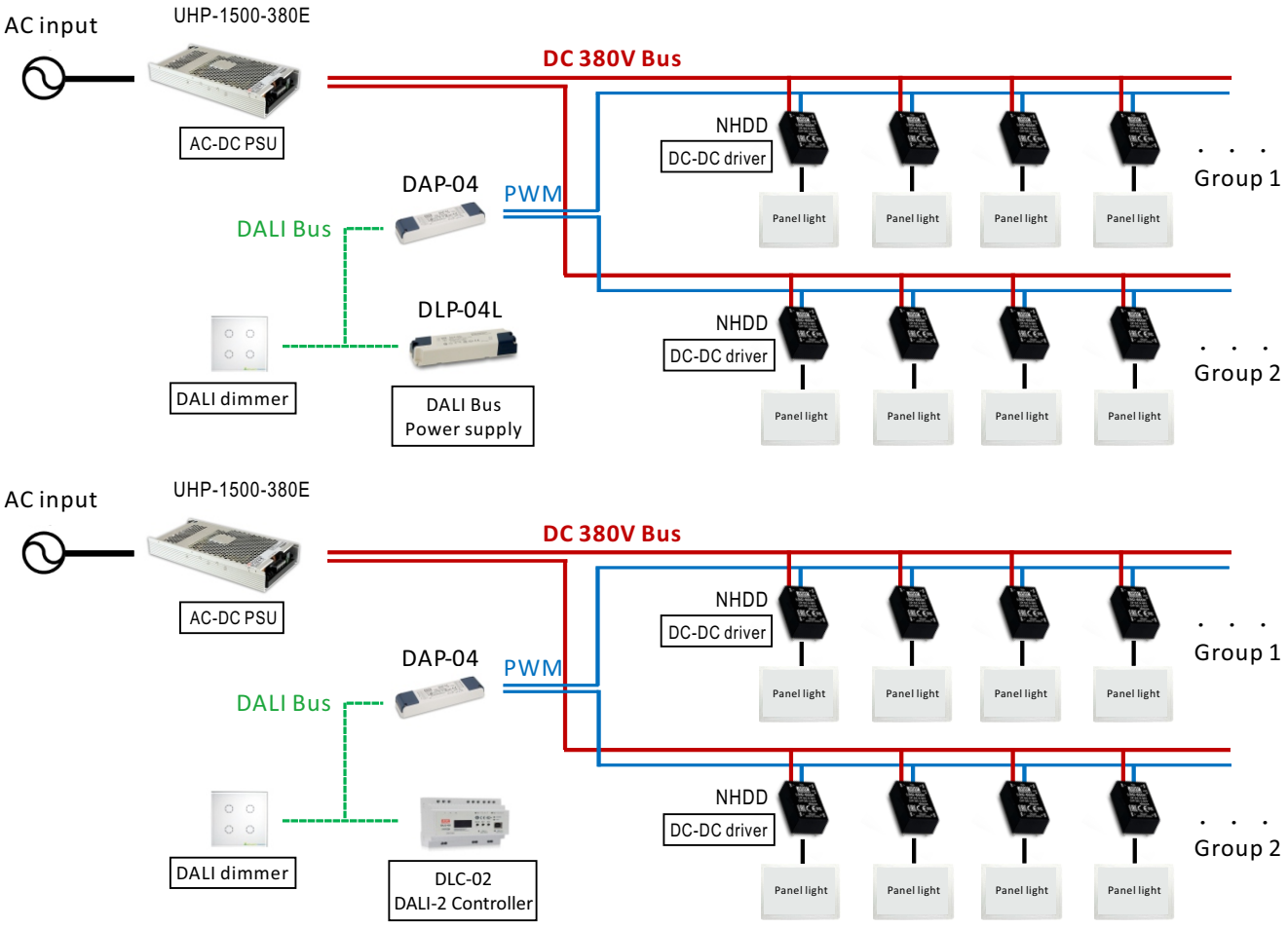
Parameter description	
LF1/LF2	Common Mode Choke(Separate) 11.5mH/Ring code(T22×14×8)/40Turns (Mn-Zn Ferrite/μi=10000±30%/AL=7230±30%nH/N²)
LF3	Common Mode Choke(Separate) 10mH/EE code(EE8.3)/wire(0.13mm×1)/70Turns (Mn-Zn Ferrite/μi=12000±25%/AL=3500±30%nH/N²)
LF4	Common Mode Choke(parallel) 10.4mH/Ring code(T6×3×3)/wire(0.1mm×1)61Turns (Mn-Zn Ferrite/μi=10000±25%/AL=4000±30%nH/N²)
C1/C2	MPP, Metalized polypropylene capacitors,2.2U/450V

■ DC House -DC lighting concept



■ Application diagram

Indoor lighting application with DC 380V Bus



Note: MEANWELL's PBM Partner can support with DC 380V LED Luminaires, please contact MEANWELL for detail.

■ Installation Manual

Please refer to : http://www.meanwell.com/manual.html