MT1800H200CQI780

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Datasheet

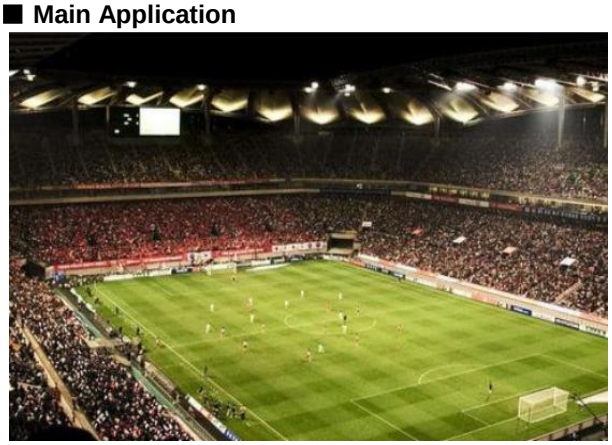
■ Description

MT1800H200CQI780 is an intelligent outdoor led driver with a flexible dimming method combine DALI-2(D4i Compatible) or DMX-RDM interface to control the output current from 30-2000mA. The driver can provide excellent lighting quality. The driver is also designed with thermal management and long lifetime. The driver can provide the stobe working mode to provide customized lighting shows cooperated with the flood light.

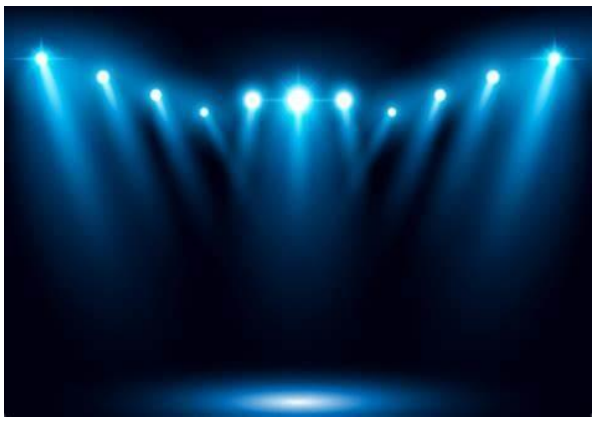
■ Main Characteristics

- Non-isolated , Class I
- Input voltage range:198-440VAC ; Built-in active PFC function; High efficiency: 95% Typ; Low inrush current
- Three channel outputs common anode independent control,they can be joined together in parallel.
- Max output power 600W per channel
- Rated output voltage, 170-500Vdc; Rated output current, 30-2000mA
- Dimming control method: DALI-2,DMX-RDM, D4i compatible
- Standby power<0.5W @230VAC-440VAC(DALI Mode), when dim off via control and DALI BUS power is disabled
- Standby power<0.5W @230VAC-347VAC(DMX Mode), when dim off via control
- Integrated 24VDC/3W auxiliary power supply
- Integrated highly accurate power metering
- Integrated 15Vdc-60mA (Max) DALI power supply
- Strobe function 40fps(Max)
- Output voltage, output current, output power sensing
- Output short circuit protection, overvoltage protection,overtemperature protection
- Surge level 10kV common mode and differential mode
- IP66 design for indoor or outdoor installation
- Max remote distance 300 meters(BELDEN CAT6 24AWG)
- All-around protection:IOVP,IUVP,OPP,OVP,SCP,OTP

■ Main Application



Stadium Lighting



Arena Lighting

■ Electrical Input Characteristics

Efficiency(Typ.)Note.1	95% @ 220Vac; 96% @ 415Vac
Voltage Range Note.2	198 ~ 440Vac
Rated Voltage and Freq.	220 ~ 415Vac ; 47~63 Hz
Power Factor	>0.9 at 220~415Vac input with 50% ~ 100% load conditions
THD	<5% at 220Vac input with full load; <10% at 347Vac input with full load;<14% at 400Vac input with full load
AC Current	9.5A MAX at 220Vac, 5A MAX at 415Vac
Inrush Current	Cold start 20A at 220Vac, 30A at 415Vac(twidth=680μs measured at 50% Ipeak)

■ Electrical Output Characteristics

Output Channel	Three Channel Output Common LED+
Output Voltage	Rated: 170Vdc ~ 500Vdc per channel ; Range: 160Vdc ~ 500Vdc (Three channels are all the same.)
Output Current	Rated:1200mA ~ 2000mA ; Range: 30mA - 2000mA (Three channels are all the same.)
Rated Power	600W per channel, 1800W total
Current Tolerance Note.3	± 5%
Regulation	Line Regulation ± 1% ; Load Regulation ± 2%
Turn-on Delay Time	450-1500ms @ 220Vac programmable
Output RippleCurrent	2% of Io_max. ((PK-AV)/AV) with LED default mode at full load, <3kHz) 15% of Io_max. ((PK-AV)/AV) with LED default mode at full load, >3kHz)
DALI power supply	12-18Vdc,60mA(Max)
Standby Power	＜0.5W @230VAC--440VAC(DALI Mode) , when dim off via control and DALI BUS power is disabled ＜0.5W @230VAC--347VAC(DMX Mode) , when dim off via control
24V Power supply	21.6V - 24V typ. - 26.4V; 3W-Max
Flicker	IEEE 1789 flicker recommended practice compliant
Output Peak Current	No Overshoot
Dimming Range	2.5% - 100%

■ Protection

Over Voltage (Typ.)	>520V, Protection type: Hiccup mode,recovers automatically after fault condition is removed
Short Circuit	Hiccup mode, recovers automatically after fault condition is removed
Over Temperature	Decreases output current,returning to normal after over temperature is removed

■ Environment

Operating Temperature	-40~+50℃, refer to the derating curve for detail
Operating Humidity	5~95%RH, non-condensing
Storage Temperature & Humidity	-40~+85℃, 5%-95%RH
Temperature Coefficient	0.03%/℃ (0~55℃)
Vibration	3G force or above at response Hz(5~30Hz), X,Y,Z axises, 100k cycles/axis / 30G 11ms 2 times, 50G 11ms 1 time, at X,Y,Z axis
Tc max	90℃

■ Safety & EMC

Safety Standard	IEC/EN 60598.1,IEC/EN 61347.1,IEC/EN 61347-2-13,IEC/EN 62384,AS/NZS 61347.1,AS/NZS IEC 61347.2.13, GB7000.1,GB 19510.1,GB 19510.14
Withstand Voltage	Mains VS Output/NTC:Non isolated; Mains VS DMX: Double isolated; Mains vs Housing:Basic isolated Output/NTC VS DMX: Double isolated; Output/NTC VS Housing: Basic isolated; Mains VS DALI: Basic isolated; Output/NTC VS DALI: Basic isolated
Isolation Resistance	I/P-FG, O/P-FG:100M Ohms/500VDC/25℃/70%RH
EMC Emission	CISPR 15,EN55015,IEC/EN 61000-3-2,IEC/EN 61000-3-3, AS/NZS CISPR 15,GB 17743,GB 17625.1
EMC Immunity	Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level (surge:L--N:±10KV,L,N--FG:±10KV)

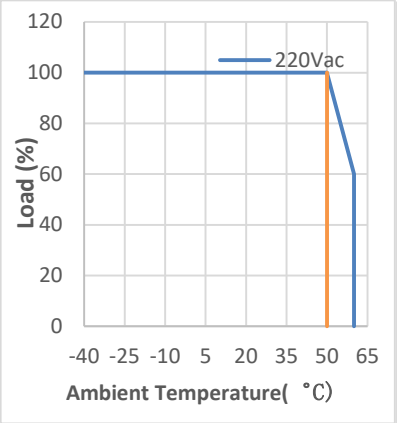
■ Others

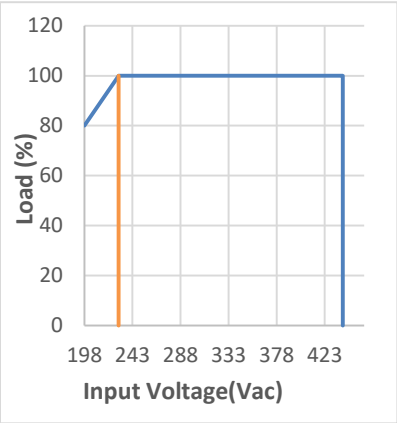
MTBF	250,000 hours, measured at full load, 25℃ ambient temperature MIL-HDBK-217F(25℃)
Dimension(L*W*H)	500mm*141mm*120mm
Weight	6.1Kg

■ Notes

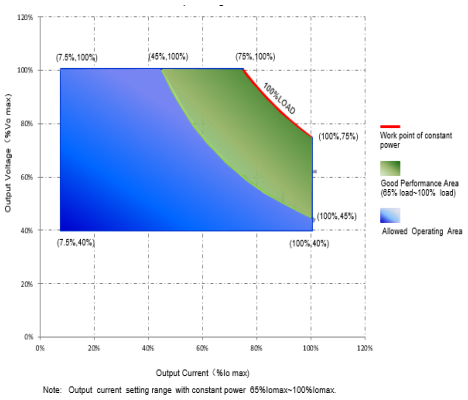
Note.1	Measured at full load and steady state, in 25℃ ambient temperature. Efficiency will be about 2% lower if measured immediately after startup.
Note.2	Derating may be needed under low input voltages. Please check the static characteristics for more details.
Note.3	Includes set up tolerance, line regulation and load regulation.

■ Derating Curve

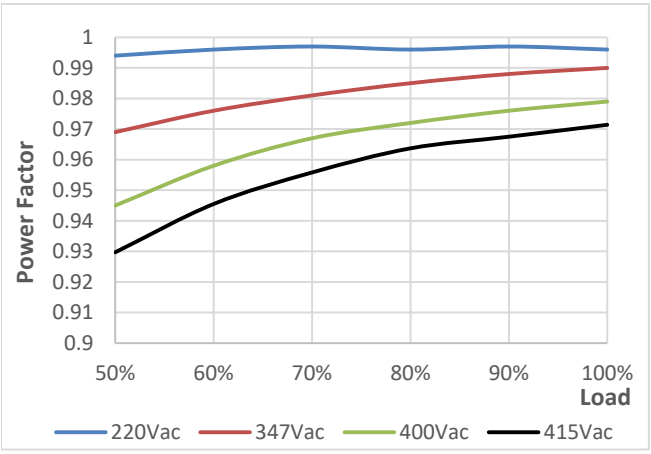




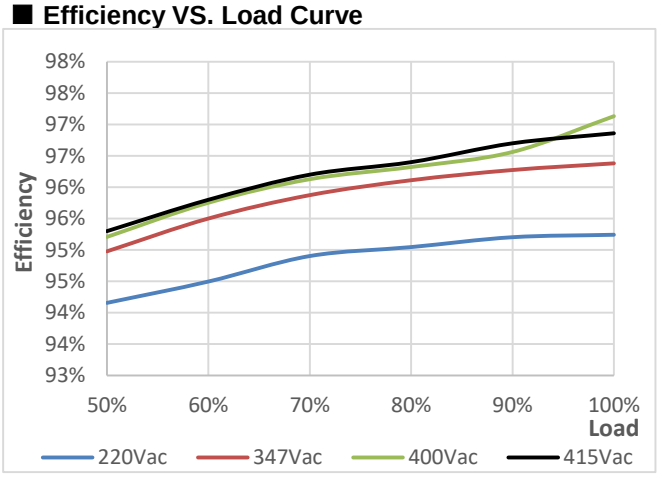
■ V/I Curve



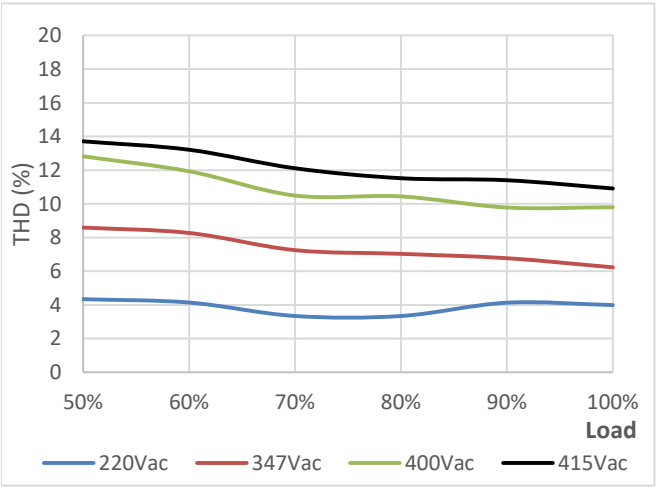
■ Power Factor VS. Load Curve



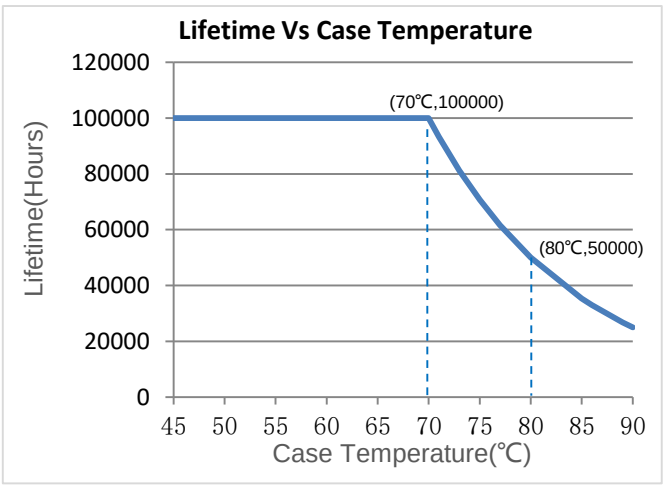
■ Efficiency VS. Load Curve



■ THD VS. Load Curve

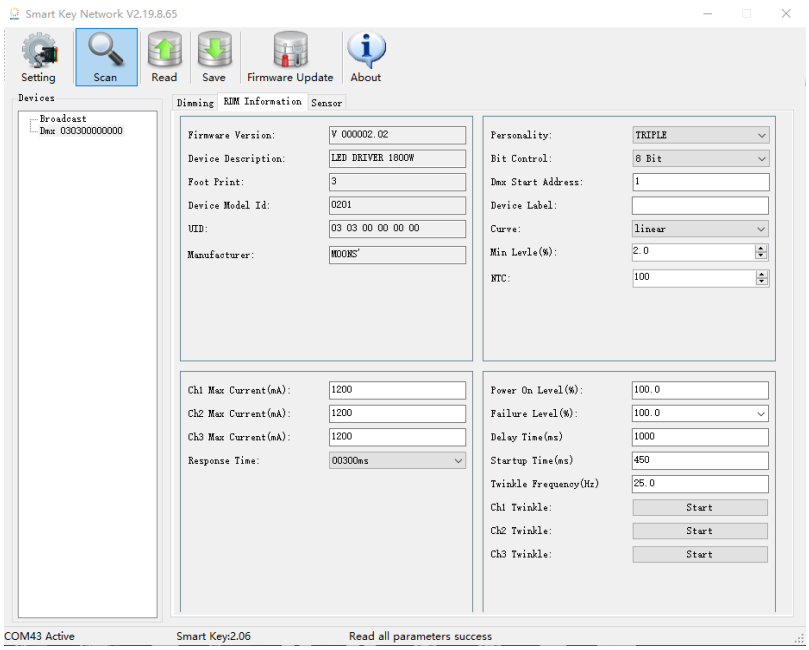


■ Life Time VS. Tcase

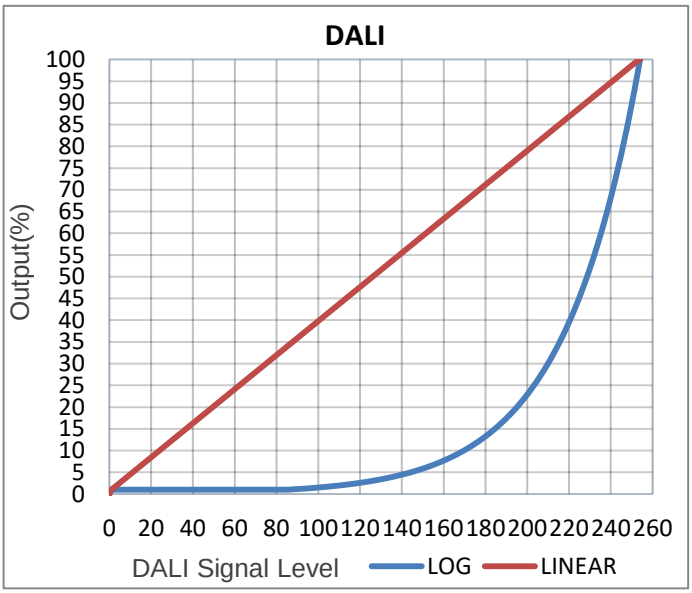


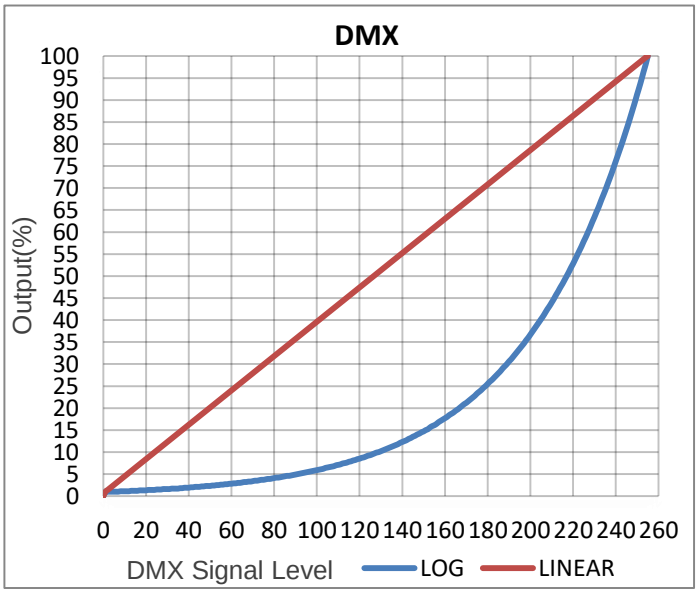
■ Programmable Performance

- Default Dimming Mode: DMX(RDM)
- Default Factory Setting:



■ Dimming Curve





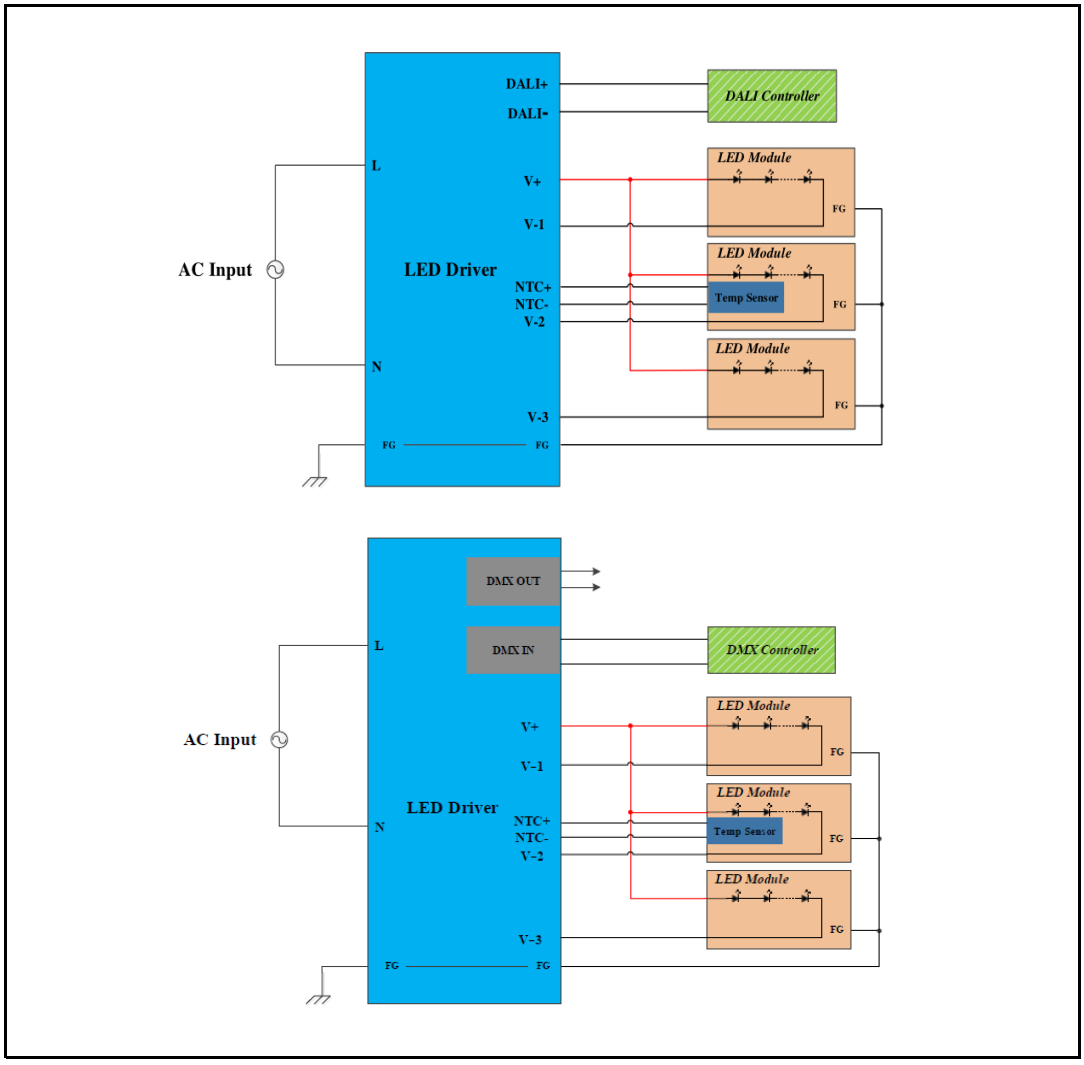
■ NTC Dimming

The external LED module temperature can be detected using an NTC thermistor and the default threshold is 100℃ that can be configurable. And the LED driver will check the external temperature every 5 minutes.If the over-temperature condition is detected, the output current will decrease to 50% of the previous current. And if the output current is less than 12.5% of the set output current, power off the LED driver that will be recovery when the temperature of the LED assembly bring back to safe value.

NTC Model: NCP15XH103F03RC

Note: This protection is an optional feature and user can connect nothing to NTC to ignore it.

■ Connection Schematic



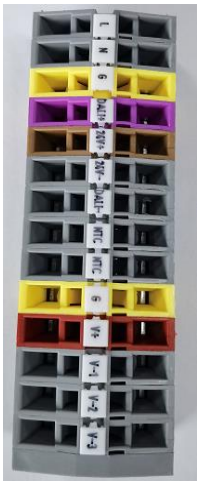
Note: FG is indicated as Protective Earth

■ Drivers for each circuit breaker

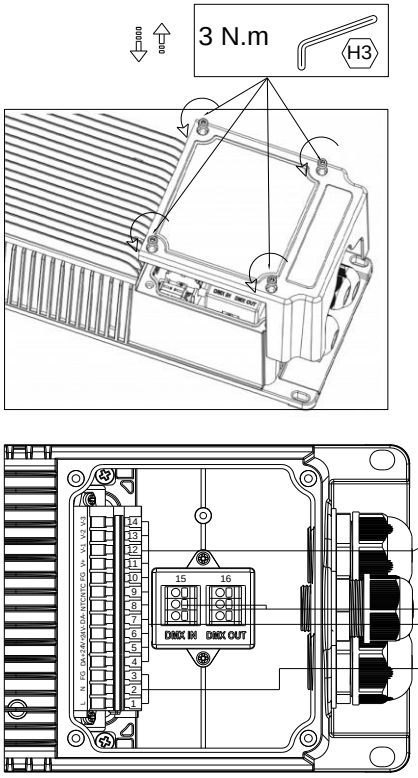
The maximum number for LED drivers connectable to a single MCB is recommended in the following table for maximum 1800W and each nominal input voltage.Due to the different kinds of circuit breakers available on the market,this table is just for reference.

Driver	Input	MCB Rated Current	MCB TYPE C Driver Number	MCB TYPE B Driver Number
MT1800HXXXCQIXXX	220Vac	10A	0	0
		16A	1	0
		25A	2	1
	415Vac	10A	1	1
		16A	2	2
		25A	4	3

■ Electrical Connection

	**Mains Section(AC Side)** Three input terminal blocks, for AC input L1/L, L2/N and FG. connections (M25 Cable Gland). Total number of mains connection is composed of 3 positions.
	DALI Control Section DA+,24V+,24V－,DA－, NTC , NTC
	Ouput connection FG , V+, V-1, V-2, V-3
	**DMX IN Control Section** DMX+, DMX－, DMX Shield **DMX OUT Control Section** DMX+, DMX－, DMX Shield

■ Wiring Connection

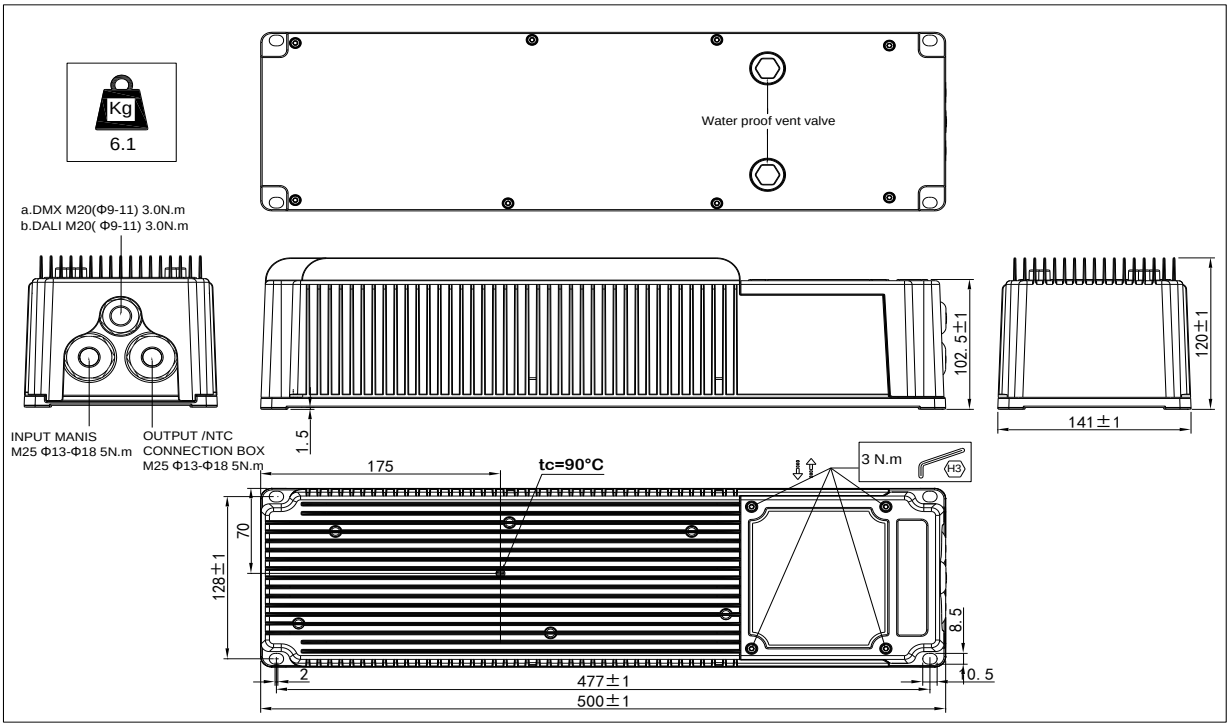


PIN #	RECOMMENDED CABLE TYPE	DMX INTERFACE	TERMINAL COLOR	FUNCTION
15	a. DMX (Φ9-Φ11mm) Wire Range:20-14AWG, 0.5-2.5mm^2 Srtipping length:10mm H07RN-F 600V	DMX IN	ORANGE	DMX data+
			BLACK	DMX data-
			GREEN	DMX shield
16		DMX OUT	ORANGE	DMX data+
			BLACK	DMX data-
			GREEN	DMX shield

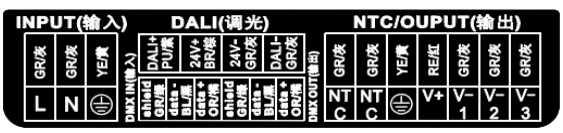
PIN#	RECOMMENDED CABLE TYPE	TERMINAL COLOR	FUNCTION
14	CONNECTION BOX (Φ13-Φ18) OUTPUT /NTC Wire Range:18-14AWG, 0.75-2.5mm^2 Srtipping length:9mm H07RN-F 450V/750V	GRAY	V-3
13		GRAY	V-2
12		GRAY	V-1
11		RED	V+
10		YELLOW	FG
9		GRAY	NTC
8		GRAY	NTC
7	b. DALI (Φ9-Φ11) Wire Range:20-14AWG, 0.5-2.5mm^2 Srtipping length:9mm H07RN-F 600V	GRAY	DALI-
6		GRAY	24V-
5		BROWN	24V+
4		PURPLE	DALI+
3	MAINS (Φ13-Φ18) INPUT Wire Range:16-14AWG, 1.5-2.5mm^2 Srtipping length:10-11mm H07RN-F 450V/750 or A11VV U-600/1000V	YELLOW	FG
2		GRAY	AC input L2/N
1		GRAY	AC input L1/L

#:Support both soild core and stranded wire.

■ Mechanical Specification (Unit: mm)



■ Label



RoHS Compliance:

Our products comply with the European Directive 2011/65/EU,
calling for the elimination of lead and other hazardous substances from electronic products.