

Data sheet

SM 022 (022-1BD20)

Technical data

Current consumption from backplane bus 75 mA Power loss 0.8 W Technical data digital outputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 20 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output daily of "0" to "1" 100 µS Output daily of "0" to "1" 100 µS Output daily of "1" to "0" 250 µS Minimum load current - Lamp load 10 W Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with inductive load max. 0.5 Hz Switching frequency on throws shur-off voltage L+ (-S V) Short-circuit protection of output yes, electronic Switching frequency on throws shur-off voltage L+ (-S V) Short-circuit protection of outputs - Switching frequency ou	Order no.	022-1BD20
Medule ID 0108 AFA0 General information - Note - Features 4x DO DC 24 V 2 A Current consumption from backplane bus 75 mA Power loss 0.8 W Technical data digital outputs 4 Cable length, unshielded 600 m Cable length, unshielded 600 m Cable length, unshielded 000 m Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Output current per group, horizontal configuration, 60°C 4 A Output delay of *0 *0 *1* 100 µs Output delay of *0 *0 *1* 100 µs Output delay of *1 *0 *0* 250 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with inductive load max. 1000 Hz Switchi	Туре	SM 022
Note - Features 42 AD 2A Current consumption/power loss 75 mA Current consumption from backplane bus 75 mA Power loss 0.8 W Technical data digital outputs 4 Cable length, shielded 1000 m Cable length, shielded 600 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 20 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, horizontal configuration, 60°C 4 A Output dugre of 1° 0° 1° 100 µs Output dugre of 1° 0° 1° 20 pus Signal logic output Sourcing output Output delay of 1° 0° 1° 20 pus Minimum load current - Lamp load not possible Parallel switching of outputs for includated max. 104 Hz Switching frequency with inductive lo	Module ID	0108 AFA0
Note - Features 42 AD 2A Current consumption/power loss 75 mA Current consumption from backplane bus 75 mA Power loss 0.8 W Technical data digital outputs 4 Cable length, shielded 1000 m Cable length, shielded 600 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 20 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, horizontal configuration, 60°C 4 A Output dugre of 1° 0° 1° 100 µs Output dugre of 1° 0° 1° 20 pus Signal logic output Sourcing output Output delay of 1° 0° 1° 20 pus Minimum load current - Lamp load not possible Parallel switching of outputs for includated max. 104 Hz Switching frequency with inductive lo	Conoral information	
Features 4× D0 DC 24 V 2 A Current consumption/power loss 75 mA Current consumption from backplane bus 75 mA Power loss 0.8 W Technical data digital outputs 4 Cable length, shielded 000 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 20 mA Total current per group, horizontal configuration, 60°C 4 A Total current per group, horizontal configuration, 60°C 4 A Output day of '0' to '1' 100 µs Parallel switching of outputs for increased power not possible Parallel switching of outputs for increased power not possible Switching frequency with inductive load max. 1000 Hz Switching frequency with inductive load max. 100 Hz Switching frequency with inductive load max. 100 Hz Switching frequency with inductive load max. 100 Hz Switching frequency with inductive load		
DC 24 V 2ACurrent consumption/power loss75 mAPower loss0.8 WTechnical data digital outputs4Cable length, shielded1000 mCable length, shielded600 mCable length, unshielded600 mCable length, unshielded000 mCable length, unshielded20 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, vertical configuration, 60°C4 ACutput current at signal "1", rated value2 ASignal logic cutputSourcing outputOutput delay of "0" to "1"100 µsOutput delay of "1" to "0"260 µsMinimun load current-Lamp load10 WParallel switching of outputs for increased powernot possibleParallel switching of outputs for increased powernot possibleSwitching frequency with resistive loadmax. 1000 HzSwitching frequency on lamp loadmax. 1000 HzSwitching frequency on lamp load-Internal limitation of inductive shurdff voltage+< {52 V}		-
Current consumption from backplane bus 75 mA Power loss 0.8 W Technical data digital outputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 20 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vortical configuration, 60°C 4 A Output current at signal *1", rated value 2 A Signal logic output Sourcing output Output day of *1* to *0* 250 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with inductive load max. 1000 Hz Switching frequency on lamp load max. 1000 Hz Switching requency explored outputs - Switching requency on lamp load max. 1000 Hz Switching requency on lamp load max. 1000 Hz Switching requency on lamp load max. 1000 Hz Switching requency o	reatures	DC 24 V
Power loss 0.8 W Technical data digital outputs 4 Number of outputs 4 Cable length, unshielded 600 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 20 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, horizontal configuration, 60°C 4 A Total current per group, vertical configuration 4 A Output current at signal "1", rated value 2 A Signal logic output Sourcing output Output delay of "0" to "1" 100 µs Output delay of "1" to "0" 250 µs Minimum load current - Lamp load 100 W Parallel switching of outputs for redundant control of a load not possible Parallel switching in pout system concreased power not possible Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 1000 Hz Switching frequency with inductive load max. 1000 Hz Switching frequency o	Current consumption/power loss	
Technical data digital outputs Number of outputs 4 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 20.428.8 V Current consumption from load voltage L+ (without load) 20 mA Total current per group, horizontal configuration, 40°C 4 A Total current per group, vertical configuration, 60°C 4 A Output current at signal "1", rated value 2 A Signal logic output Sourcing output Output delay of "0" to "1" 100 µs Output delay of "1" to "0" 250 µs Minimum load current - Lamp load 10 W Parallel switching of outputs for increased power not possible Parallel switching of outputs for increased power not possible Actuation of digital input yes Switching frequency with inductive load max. 1000 Hz Switching frequency on lamp load max. 100 Hz Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output yes, electronic Trigge level .7 A	Current consumption from backplane bus	75 mA
Number of outputs4Cable length, shielded1000 mCable length, unshielded600 mRated load voltageDC 20.428.8 VCurrent consumption from load voltage L+ (without load)20 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, vertical configuration, 60°C4 AOutput current per group, vertical configuration, 60°C4 AOutput durent at signal "1", rated value2 ASignal logic outputSourcing outputOutput delay of "0" to "1"100 μsOutput delay of "0" to "1"250 μsMinimum load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleSwitching frequency with inductive loadmax. 100 HzSwitching frequency on lamp loadmax. 0.5 HzSwitching frequency on lamp loadmax. 0.5 HzSwitching rotection of outputsyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching contacts-Output data size4 BitStatus displaygreen LED per channelInternal lintration, alarms, diagnosticsstatus display	Power loss	0.8 W
Cable length, shielded1000 mCable length, unshielded600 mRated load voltageDC 20.428.8 VCurrent consumption from load voltage L+ (without load)20 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, horizontal configuration, 60°C4 AOutput current at signal *1*, rated value2 ASignal logic outputSourcing outputOutput data of *1* or 0*250 µsMinimum load current-Lamp load100 WParallel switching of outputs for increased powernot possibleParallel switching frequency with inductive loadmax. 1000 HzSwitching frequency with inductive loadmax. 1000 HzSwitching frequency on lamp loadmax. 1000 HzSwitching requency of outputs-Switching requency of outputs-Switching requency of outputs-Switching requency of outputs-Switching requency output-Switching requency outputs-Switching requency outputs-Switching requency outputs-Switching requency outputs-Switching capacity of contacts-Switching capacity of outputs-Switching requency outputs-Switching capacity of contacts-Switching capacity of contacts-Switching capacity of contacts-Switching requency on lamp load-Switching requency of relay outputs-Switching capacity of contacts <td< td=""><td>Technical data digital outputs</td><td></td></td<>	Technical data digital outputs	
Cable length, unshielded600 mRated load voltageDC 20.428.8 VCurrent consumption from load voltage L+ (without load)20 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, horizontal configuration, 60°C4 AOutput current at signal "1", rated value2 ASignal logic outputSourcing outputOutput delay of "0" to "1"100 µsOutput delay of "1" to "0"250 µsMinimu load current-Lamp load10 WParallel switching of outputs for increased powernot possibleParallel switching of outputs for increased powernot possibleSwitching frequency with inductive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency with inductive loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputs-Trigger level2.7 ANumber of operating cycle of relay outputs-Switching frequency outputs-Status information, alarms, diagnostics-Status information, alarms, diagnostics-Status displaygreen LED per channelInterruptsno	Number of outputs	4
Rated load voltageDC 20.428.8 VCurrent consumption from load voltage L+ (without load)20 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, horizontal configuration4 ATotal current per group, vertical configuration4 AOutput current at signal "1", rated value2 ASignal logic outputSourcing outputOutput delay of "0" to "1"100 µsOutput delay of "0" to "1"250 µsMinimu load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleSwitching frequency with inductive loadmax. 1000 HzSwitching frequency with inductive loadmax. 1000 HzSwitching frequency on lamp loadmax. 101 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnostics-Status displaygreen LED per channelInterruptsno	Cable length, shielded	1000 m
Current consumption from load voltage L+ (without load)20 mATotal current per group, horizontal configuration, 40°C4 ATotal current per group, vertical configuration4 AOutput current at signal "1", rated value2 ASignal logic outputSourcing outputOutput delay of "0" to "1"100 µsOutput delay of "0" to "1"250 µsMinimun load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 100 HzSwitching frequency with inductive loadmax. 100 HzSwitching frequency on lamp loadmax. 100 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInternationgreen LED per channel	Cable length, unshielded	600 m
Total current per group, horizontal configuration, 60°C4 ATotal current per group, vertical configuration4 AOutput current at signal "1", rated value2 ASignal logic outputSourcing outputOutput delay of "0" to "1"100 μsOutput delay of "1" to "0"250 μsMinimum load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with inductive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Shot-circuit protection of outputs-Switching copacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInternaptsno	Rated load voltage	DC 20.428.8 V
Total current per group, horizontal configuration, 60°C4 ATotal current per group, vertical configuration4 AOutput current at signal "1", rated value2 ASignal logic outputSourcing outputOutput delay of "0" to "1"100 μsOutput delay of "0" to "1"250 μsMinimum load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with resistive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 0.10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInterruptsno	Current consumption from load voltage L+ (without load)	20 mA
Total current per group, vertical configuration4 AOutput current at signal *1*, rated value2 ASignal logic outputSourcing outputOutput delay of "0" to *1"100 μsOutput delay of "0" to *1"250 μsMinimum load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleParallel switching frequency with resistive loadmax. 1000 HzSwitching frequency with resistive loadmax. 0.05 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputs-Switching coperating cycle of relay outputs-Switching apacity of contacts-Suitching apacity of contacts-Status information, alarms, diagnostics-Status displaygreen LED per channelInterruptsno	Total current per group, horizontal configuration, 40°C	4 A
Output current at signal "1", rated value2 ASignal logic outputSourcing outputOutput delay of "0" to "1"100 µsOutput delay of "1" to "0"250 µsMinimum load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputs-Switching capacity of contacts-Output data size4 BitStatus displaygreen LED per channelInterruptsno	Total current per group, horizontal configuration, 60°C	4 A
Signal logic outputSourcing outputOutput delay of "0" to "1"100 µsOutput delay of "1" to "0"250 µsMinimun load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInterruptsno	Total current per group, vertical configuration	4 A
Output delay of "0" to "1"100 µsOutput delay of "1" to "0"250 µsMinimum load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency on lamp loadmax. 0.5 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputs-Switching capacity of contacts-Output data size4 BitStatus displaygreen LED per channelInterruptsno	Output current at signal "1", rated value	2 A
Output delay of "1" to "0"250 µsMinimum load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency on lamp loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputs-Trigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus displaygreen LED per channelInterruptsno	Signal logic output	Sourcing output
Minimum load current-Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus displaygreen LED per channelInterruptsno	Output delay of "0" to "1"	100 µs
Lamp load10 WParallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus displaygreen LED per channelInternytsno	Output delay of "1" to "0"	250 µs
Parallel switching of outputs for redundant control of a loadnot possibleParallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus displaygreen LED per channelInternalnot	Minimum load current	-
Parallel switching of outputs for increased powernot possibleActuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus displaygreen LED per channelInterruptsno	Lamp load	10 W
Actuation of digital inputyesSwitching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInterruptsno	Parallel switching of outputs for redundant control of a load	not possible
Switching frequency with resistive loadmax. 1000 HzSwitching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus displaygreen LED per channelInternal limitation, alarms, diagnosticsno	Parallel switching of outputs for increased power	not possible
Switching frequency with inductive loadmax. 0.5 HzSwitching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInterruptsno	Actuation of digital input	yes
Switching frequency on lamp loadmax. 10 HzInternal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInterruptsno	Switching frequency with resistive load	max. 1000 Hz
Internal limitation of inductive shut-off voltageL+ (-52 V)Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInterruptsno	Switching frequency with inductive load	max. 0.5 Hz
Short-circuit protection of outputyes, electronicTrigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInterruptsno	Switching frequency on lamp load	max. 10 Hz
Trigger level2.7 ANumber of operating cycle of relay outputs-Switching capacity of contacts-Output data size4 BitStatus information, alarms, diagnosticsgreen LED per channelInterruptsno	Internal limitation of inductive shut-off voltage	L+ (-52 V)
Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics - Status display green LED per channel Interrupts no	Short-circuit protection of output	yes, electronic
Switching capacity of contacts - Output data size 4 Bit Status information, alarms, diagnostics - Status display green LED per channel Interrupts no	Trigger level	2.7 A
Output data size 4 Bit Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Number of operating cycle of relay outputs	-
Status information, alarms, diagnostics Status display Interrupts no	Switching capacity of contacts	-
Status display green LED per channel Interrupts no	Output data size	4 Bit
Interrupts no	Status information, alarms, diagnostics	
· · · · · · · · · · · · · · · · · · ·	Status display	green LED per channel
Process alarm no	Interrupts	no
	Process alarm	no

YASKAWA

Diagnostic interrupt	no
Diagnostic functions	no
Diagnostics information read-out	none
Supply voltage display	green LED
Group error display	red LED
Channel error display	none
Isolation	
Between channels	-
Between channels of groups to	-
Between channels and backplane bus	yes
Insulation tested with	DC 500 V
PWM data	
PWM channels	-
PWM time basis	-
Period length	-
Minimum pulse width	
Type of output	-
Safety	
Safety protocol	-
Safety requirements	-
Secure user address	-
Watchdog	-
Two channels	-
Test pulse length	-
Circuit monitoring	-
Datasizes	
Input bytes	0
Output bytes	1
Parameter bytes	0
Diagnostic bytes	0
Housing	
Material	PPE / PPE GF10
Mounting	Profile rail 35 mm
Mechanical data	
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm
Net weight	58 g
Weight including accessories	58 g
Gross weight	73 g
Environmental conditions	-
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL certification	yes
KC certification	yes