

APPLICABLE STANDARD		UL, C-UL, TUV STANDARD (Appendix 1)			
RATING	Operating Temperature Range	-40 °C to +105 °C (Note 1) (Included temperature rise caused by current-carrying)	Storage Temperature Range	-40 °C to +60 °C (Note 2)	
	Voltage	Power: (Appendix 1) Signal: AC, DC 250 V	Current	Power: 150A (UL, C-UL, TUV) (Appendix 1) : 210A (Derating curve: 25°C) (Appendix 2) Signal: 1A ※The Rating Current for each applicable wire size can be found in table 3.	
	Applicable Wire	14sq to 50sq (AWG#5 to AWG#1/0)			
SPECIFICATIONS					
ITEM		TEST METHOD	REQUIREMENTS	QT	AT
CONSTRUCTION					
General Examination		Visually and by measuring instrument.	According to drawing.	X	X
Marking		Confirmed visually.		X	X
ELECTRICAL CHARACTEREISTICS					
Contact Resistance		Power: DC 1 A Signal: 100 mA (DC or 1000Hz) MAX.	Power: 0.3 mΩ MAX. Signal: 60 mΩ MAX. (Note 3) (Assurance test is only signal)	X	X
Insulation Resistance		250 V DC	5000 MΩ MIN.	X	—
Voltage Proof		Power: 2000 V AC. for 1 min. Signal: 650 V AC. for 1 min.	No flashover or breakdown. (Assurance test is only signal)	X	X
MECHANICAL CHARACTERISTICS					
Mating and Unmating Forces		Measured by applicable connector at a speed of 30 mm ± 3 mm/min.	Mating force : 137.2 N MAX. Unmating force : 137.2 N MAX.	X	—
Mechanical Operation		100 times insertions and extractions at a speed of 600 times/hour. (GT8E of signal part: 30 times insertions and extraction)	① Contact resistance change: Power 0.5 mΩ MAX. Signal 40 mΩ MAX. (Note 3) ② No damage, crack and looseness of parts.	X	—
Vibration		Frequency : 10 to 55 Hz, single amplitude 0.75 mm, at 5 min/cycle, 10 cycles each in 3 axial directions. 30 cycles in total.	① No electrical discontinuity of 10 μs. ② No damage, crack and looseness of parts.	X	—
Shock		490 m/s <sup>2</sup> , duration of pulse 11 ms, for 3 times in 3 both axial directions.		X	—
ENVIRONMENTAL CHARACTERISTICS					
Rapid Change of Temperature		Temperature -40 → 105 °C Time 30 → 30 min Chamber transfer time is 2 to 3 min. Conduct 5 cycles of above cycles (mated) and exposed in the room temperature for 1 to 2 hours.	① Contact resistance change: Power 0.5 mΩ MAX. Signal 40 mΩ MAX. (Note 3) ② Insulation resistance : 1000 MΩ MIN. ③ No damage, crack and looseness of parts.	X	—
Humidity Life		After exposure at temperature 40±2 °C, humidity 90 to 95 %, for 96 h (mated), exposed at room temperature for 1 to 2 hour.	① Contact resistance change: Power 0.5 mΩ MAX. Signal 40 mΩ MAX. (Note 3) ② Insulation resistance : 1000 MΩ MIN. ③ No damage, crack and looseness of parts.	X	—
Heat Resistance		After exposure at temperature 105±2 °C, humidity for 96 h (mated), exposed at room temperature for 1 to 2 hour.	① Contact resistance change: Power 0.5 mΩ MAX. Signal 40 mΩ MAX. (Note 3) ② Insulation resistance : 1000 MΩ MIN. ③ No damage, crack and looseness of parts.	X	—
COUNT	DESCRIPTION OF REVISIONS		DESIGNED	CHECKED	DATE
△	1	DIS-E-00000869	TA. TORIHARA	AH. KODAMA	17. 04. 14
REMARK (Note 1) The operation temperature includes the temperature rise by current carrying. (Note 2) Storage temperature range shows storage condition for unused products including packing materials. Follow the operating temperature range for storage condition after mounting. (Note 3) Contact resistance of signal parts are the value that contains GT8E connector.  Unless otherwise specified, refer to IEC 60512.			APPROVED	NM. NISHIMATSU	14. 10. 20
			CHECKED	NM. NISHIMATSU	14. 10. 20
			DESIGNED	WR. YAMADA	14. 10. 20
			DRAWN	WR. YAMADA	14. 10. 20
Note QT: Qualification Test AT: Assurance Test X: Applicable Test			DRAWING NO.	ELC4-128100-00	
HRS	SPECIFICATION SHEET		PART NO.	PS3-2UP/12P/16P	
	HIROSE ELECTRIC CO., LTD.		CODE NO	CL236-1044-8-00	△ 1/8

ITEM		TEST METHOD	REQUIREMENTS	QT	AT
ENVIRONMENTAL CHARACTERISTICS					
Cold Resistance	After exposure at -40±3 °C, 96 h (mated) exposed at room temperatrur for 1 to 2 hour.	① Contact resistance change:Power 0.5 mΩ MAX. Signal 40 mΩ MAX. (Note 3) ② Insulation resistance : 1000 MΩ MIN. ③ No damage, crack and looseness of parts.		X	—
Corrosion Salt Mist	After exposure in 35±2°C, 5±1% salt water spray for 48±4 h (mated), washed with water, dried at normal temperature and humidity for 24 hours.	No heavy corrosion that lose function.		X	—
Note QT:Qualification Test AT:Assurance Test X:Applicable Test		DRAWING NO	ELC4-128100-00		
HRS	SPECIFICATION SHEET	PART NO	PS3-2UP/12P/16P		
	HIROSE ELECTRIC CO., LTD.	CODE NO*	CL236-1044-8-00	△	2/8

## Accompanying drawing

### Appendix 1. Condition of safety standard(UL, C-UL, TUV STANDARD)

This item got approved by safety standard(UL, C-UL, TUV STANDARD)  
under the condition of table 1 and table 2.  
Safety standard is different up to the applied rated voltage and current  
please see the table 1 and table 2.

Table 1. UL, C-UL condition

	Condition 1	Condition 2
Current voltage(AC/DC)	600V	
Current rating	100A	150A
Cable	14 to 22sq AWG#5 to AWG#3 (*1)	38 to 50sq AWG#1 to AWG#1/0 (*1)
Creepage distance(*2)	MIN:3.2mm	
Clearance distance(*2)	MIN:3.2mm	

Table 2. TUV conditon

TYPE II-101 CONNECTION

	Condition I	Condition II	Condition III
Current voltage (AC/DC)	800V	600V	1000V
Current rating	100A(cable 14 to 22sq , AWG#5 to AWG#3 *1) 125A(cable 38sq , AWG#1 *1) 150A(cable 50sq , AWG#1/0 *1)		
Over voltage category	II	III	
Pollution degree	3		
Creepage distance(*2)	MIN:12.6mm	MIN:12.6mm	MIN:16mm
Clearance distance(*2)	MIN:6mm	MIN:6mm	MIN:8mm
Insulation system	Basic insulation(panel has the earth)		

\*1 : As screws and crimp terminal attached with power contact have an impact on the creepage distance and the clearance distance, please use recommended screws and crimp terminals.  
In case you use cables other than following recommended screws and contacts,  
please be careful that the creepage distance and the clearance distance meet the standard of UL, C-UL, TUV.

-Recommended screw : JIS B 1188 spring washer + cross recessed pan head screw with captive polished circular washer M6 X 12

-Recommended crimp terminal

Cable 14sq : JIS C 2805 R14-6

Cable 22sq : JIS C 2805 R22-6

Cable 38sq : Manufactured by NICHIFU CO.,LTD R38-6S

Cable 50sq : Manufactured by NICHIFU CO.,LTD R60-6S

\*2: The coverage of the creepage distance and the clearance distance is as follows.

-Between crimp terminals

-Between power contact and panel

-Between crimp terminal and panel

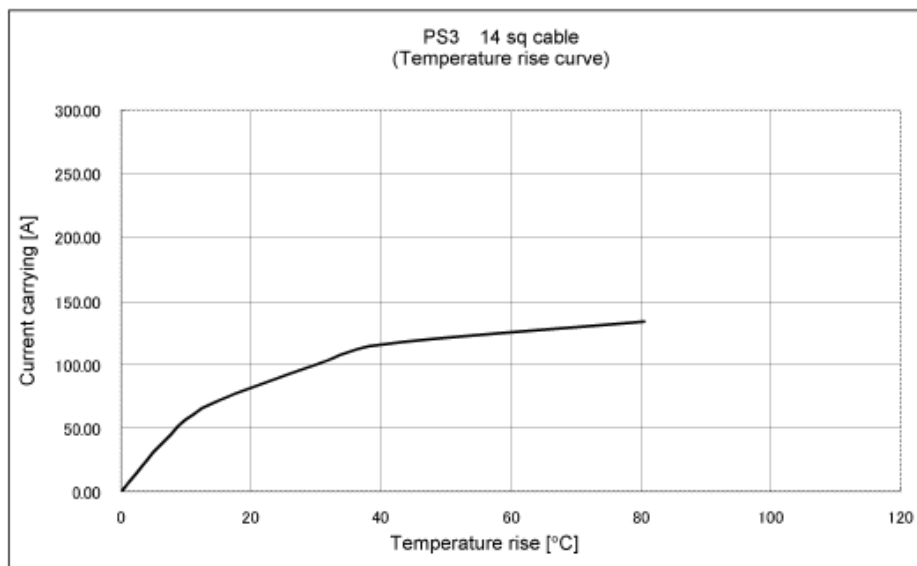
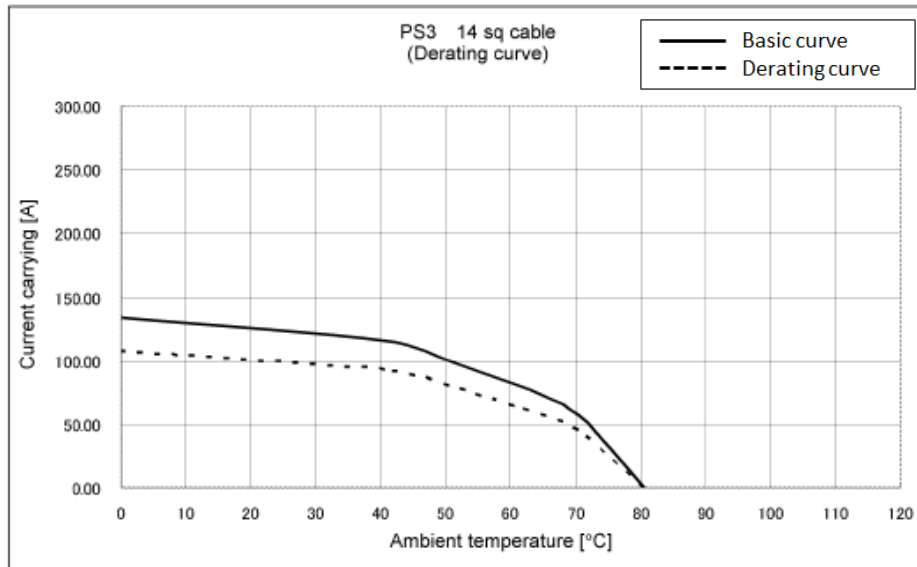
-Between screws (attacehd with power contact) and panel

Note QT:Qualification Test AT:Assurance Test X:Applicable Test		DRAWING NO	ELC4-128100-00		
<b>HRS</b>	SPECIFICATION SHEET		PART NO	PS3-2UP/12P/16P	
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Accompanying drawing

Appendix 2. Derating curve (reference)

i. 14 sq cable



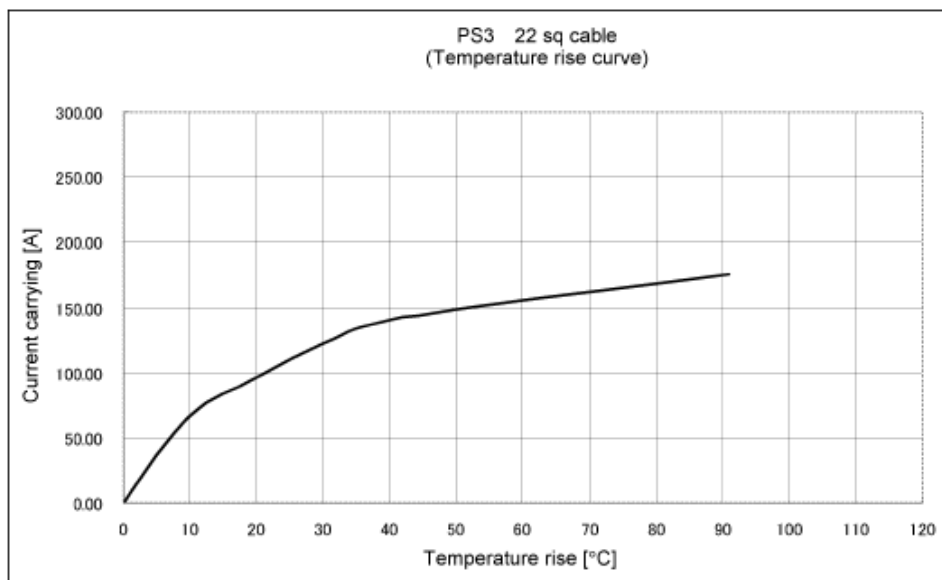
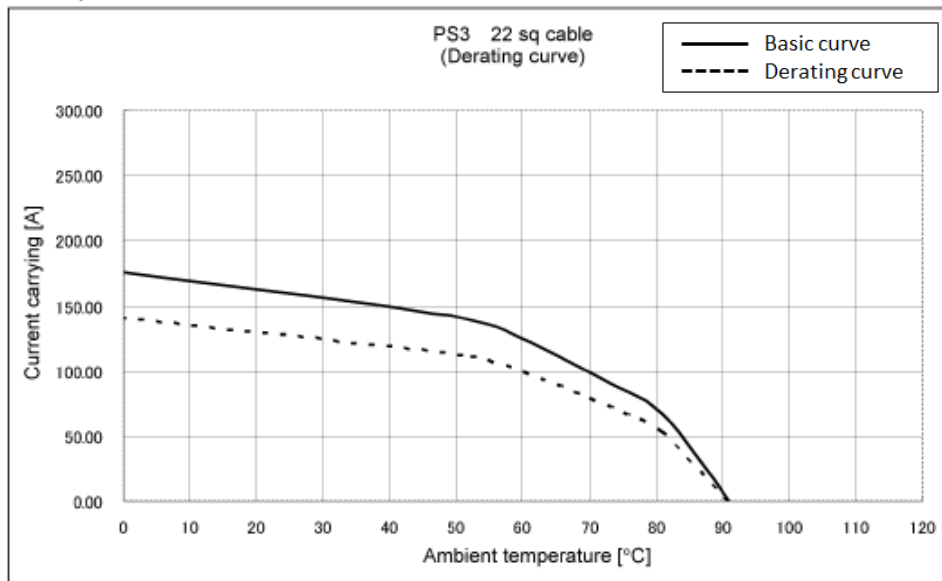
- Note 1 : Derating curve takes manufacturing tolerances into consideration as well as uncertainties in temperature measurement and the measuring set up and is derived from the base curve multiplied by 0.8 calculation.
- 2 : The value of rated current differs depending on the ambient temperature.  
It is recommended to use the product within the derating curve zone.  
If used under UL or TUV STANDARD, please refer to the appendix 1.
- 3 : Measurement method of derating curve is shown below.
- Test specimen : PS3-2UP (male contact side connector, using the same contacts as the here handled PS3-2UP/12P/16P)  
PS3-2US (female contact side connector)
  - Test cable spec : 14 mm<sup>2</sup> (AWG#5)
  - Test condition : Turn on electricity under the static state and measure.  
(Test report # TR0236E-20255)

Note QT:Qualification Test AT:Assurance Test X:Applicable Test		DRAWING NO	ELC4-128100-00		
	SPECIFICATION SHEET		PART NO	PS3-2UP/12P/16P	
	HIROSE ELECTRIC CO., LTD.		CODE NO*	CL236-1044-8-00	4/8

Accompanying drawing

Appendix 2. Derating curve (reference)

ii. 22 sq cable



Note 1 : Derating curve takes manufacturing tolerances into consideration as well as uncertainties in temperature measurement and the measuring set up and is derived from the base curve multiplied by 0.8 calculation.

2 : The value of rated current differs depending on the ambient temperature.  
It is recommended to use the product within the derating curve zone.  
If used under UL or TUV STANDARD, please refer to the appendix 1.

3 : Measurement method of derating curve is shown below.



-Test specimen : PS3-2UP (male contact side connector, using the same contacts as the here handled PS3-2UP/12P/16P)

PS3-2US (female contact side connector)

-Test cable spec : 22 mm<sup>2</sup> (AWG#3)

-Test condition : Turn on electricity under the static state and measure.

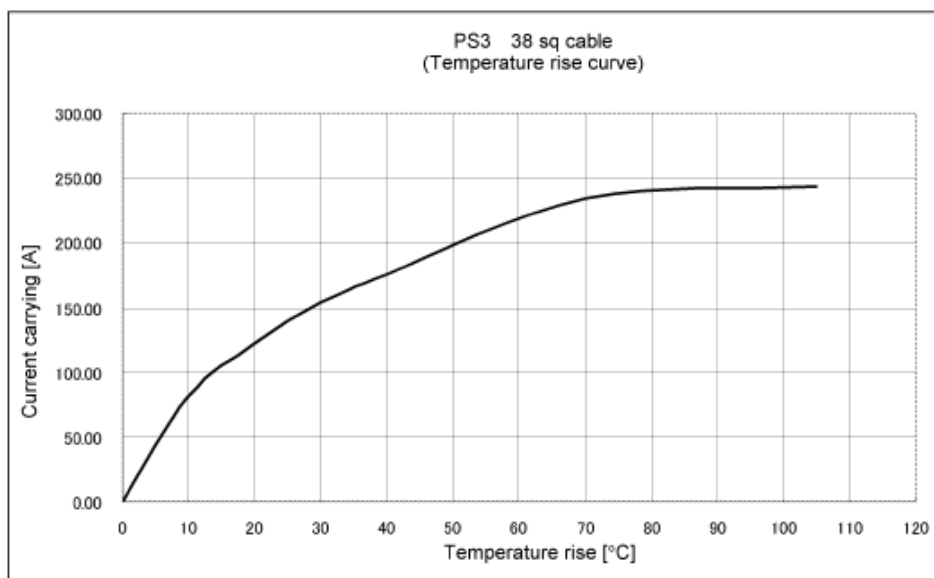
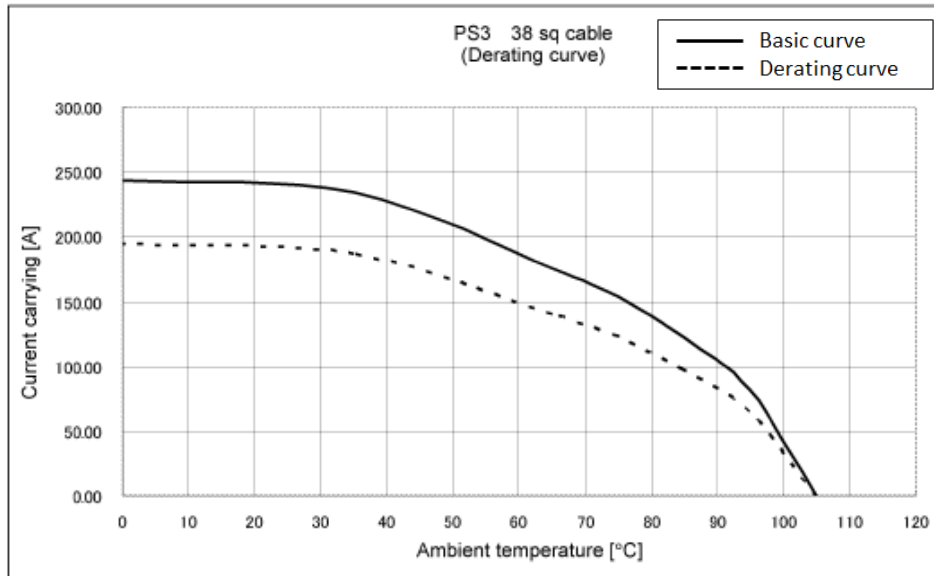
(Test report # TR0236E-20255)

Note QT:Qualification Test AT:Assurance Test X:Applicable Test		DRAWING NO	ELC4-128100-00		
	SPECIFICATION SHEET		PART NO	PS3-2UP/12P/16P	
	HIROSE ELECTRIC CO., LTD.		CODE NO*	CL236-1044-8-00	 5/8



Accompanying drawing

Appendix 2. Derating curve (reference)

iii. 38 sq cable



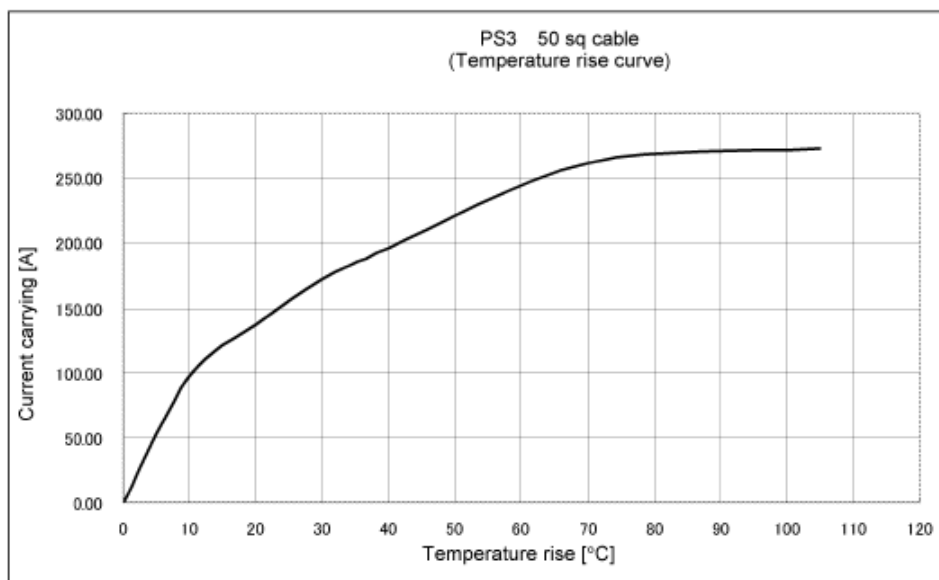
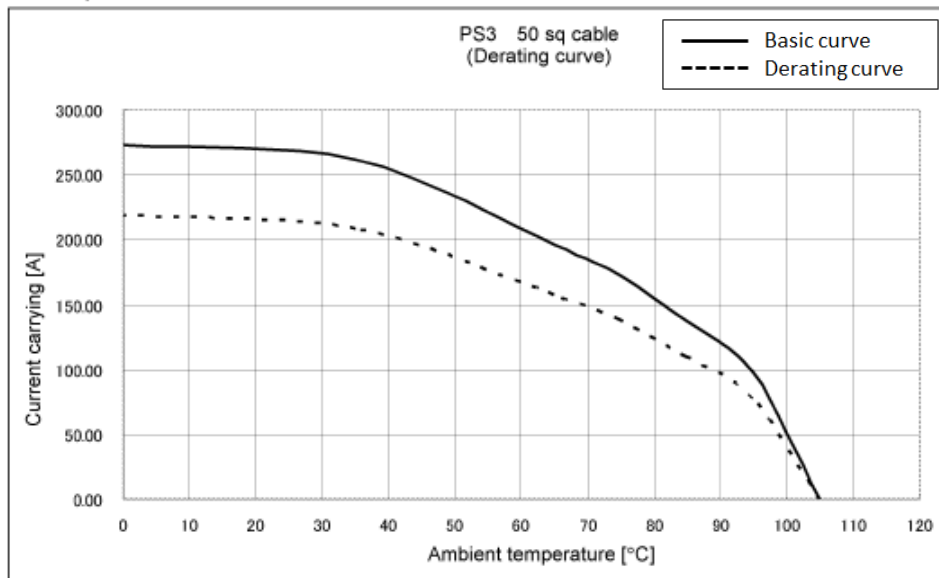
- Note 1 : Derating curve takes manufacturing tolerances into consideration as well as uncertainties in temperature measurement and the measuring set up and is derived from the base curve multiplied by 0.8 calculation.
- 2 : The value of rated current differs depending on the ambient temperature.  
It is recommended to use the product within the derating curve zone.  
If used under UL or TUV STANDARD, please refer to the appendix 1.
- 3 : Measurement method of derating curve is shown below.  
-Test specimen : PS3-2UP (male contact side connector, using the same contacts as the here handled PS3-2UP/12P/16P)  
PS3-2US (female contact side connector)  
-Test cable spec : 38 mm<sup>2</sup> (AWG#1)  
-Test condition : Turn on electricity under the static state and measure.  
(Test report # TR0236E-20255)

Note QT:Qualification Test AT:Assurance Test X:Applicable Test		DRAWING NO	ELC4-128100-00		
	SPECIFICATION SHEET		PART NO	PS3-2UP/12P/16P	
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Accompanying drawing

Appendix 2. Derating curve (reference)

iv. 50 sq cable



Note 1 : Derating curve takes manufacturing tolerances into consideration as well as uncertainties in temperature measurement and the measuring set up and is derived from the base curve multiplied by 0.8 calculation.

2 : The value of rated current differs depending on the ambient temperature.  
It is recommended to use the product within the derating curve zone.  
If used under UL or TUV STANDARD, please refer to the appendix 1.

3 : Measurement method of derating curve is shown below.



-Test specimen : PS3-2UP (male contact side connector, using the same contacts as the here handled PS3-2UP/12P/16P)

PS3-2US (female contact side connector)

-Test cable spec : 50 mm<sup>2</sup> (AWG#1/0)

-Test condition : Turn on electricity under the static state and measure.

(Test report # TR0236E-20255)



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Accompanying drawing

Table 3. List of the rated current for each applicable wire size.

<div>STANDARD</div> <div>Applicable wire</div>	UL/C-UL (Appendix 1)	TUV (Appendix 1)	Derataing curve Ambient temperature 25°C (Appendix 2)
14mm <sup>2</sup> , AWG#5	100A	100A	100A
22mm <sup>2</sup> , AWG#3	100A	100A	125A
38mm <sup>2</sup> , AWG#1	150A	125A	190A
50mm <sup>2</sup> , AWG#1/0	150A	150A	210A

Note QT:Qualification Test AT:Assurance Test X:Applicable Test		DRAWING NO	ELC4-128100-00		
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