Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
R 50303364

Blatt *Page*
0005

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue (day/mo/yr)*
K.S.	ZJL-MAS- 50002802 003	19.07.2021	

Genehmigungsinhaber *License Holder*
Hirose Electric Co., Ltd.
2-6-3 Nakagawa-Chuo, Tsuzuki-ku
Yokohama-shi, Kanagawa
224-8540 Japan

Fertigungsstätte Manufacturing Plant
Koriyama Hirose Electric Co., Ltd.
87-3 Okawara
Koriyama-shi, Fukushima
963-8828 Japan

Prüfzeichen *Test Mark*

TÜVRheinland® CERTIFIED
Type Approved
Safety
Regular Production
Surveillance
www.tuv.com
ID 2000000000

Geprüft nach *Tested acc. to*
EN 61984:2009

Zertifiziertes Produkt *Certified Product* **(Geräteidentifikation)** *(Product Identification)* **Lizenzentgelte - Einheit** *License Fee - Unit*

Connector Connector without breaking capacity, as page 0001

Addition

Type Designation:	*Plug Case: PQ50S-48P-PCMA(xx)	1
	*Plug Case: PQ50S-48P-PCLMA(xx)	1
	*Panel Case: PQ50S-48S-FLMA(xx)	1
	(xx) = (01) to (99), or blank	

(*For use associated with the parts indicated on page 1, and See Appendix 1.2 for details.)

Classification:	COC (Non-CBC)
Number of Poles:	48 poles
Rated Voltage:	AC/DC 300V
Rated Current:	(see Appendix 1.2)
Overvoltage Category:	III
Pollution Degree:	3
IP-degree:	IP20
Max Ambient Temperature:	+45°C
Upper Limit Temperature:	+75°C
Lower Limit Temperature:	-40°C

TÜV Rheinland LGA Products GmbH Zertifizierungsstelle

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ANLAGE (Appendix): 1.2

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

Zertifizierungsstelle

Vilmos Sztaroveczki

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

Constructional Data Form for Connector

License holder: Hirose Electric Co., Ltd.

2-6-3 Nakagawa-Chuo, Tsuzuki-ku, Yokohama-shi, Kanagawa 224-8540 Japan

Factory: Koriyama Hirose Electric Co., Ltd.

(Full address) 87-3, Ohkawara, Koriyama-shi, Fukushima 963-8828 Japan

Type or Model Number: **PQ50S Series**

Kind of device: **Connectors**

Specifications	
Type designation	See Nomenclature
Contact material	Copper alloy
Number of poles	48, 36
Rated voltage	300V AC/DC
Rated current	See table 1
Mechanical endurance	500 times
Classification	☐ CBC ☒ COC (Non CBC) ☐ other
Number of bendings (non-rewirable terminals only)	N/A
Upper limit temperature	+75℃
Lower limit temperature	-40℃
Maximum ambient temperature at rated current	+45℃

TÜV Rheinland

13 July 2021 (Date) (Signature)

Yokohama, Japan (Place)

13 July 2021 (Date)

Hirose Electric Co., Ltd. Kenichi Sato

(Stamp and Signature of Applicant)

Constructional Data Form for Connector

Classification of Connectors ☒ COC ☐ CBC						
Type of connector	Style	Enclosure		Cable Clamp		Function
Receptacle PQ50S-48-FL PQ50S-48S PQ50S-36S PQ50-20S-FL	☐ Free Connector ☒ Fixed Connector	☒ Enclosed ☐ Un-enclosed	☒ Hand Back Safety mated ☒ Hand Back Safety unmated ☒ Finger Safety mated ☒ Finger Safety unmated ☐ IP67 mated ☒ IP20 unmated	☐ with ☐ with additional insulation bushing	Applicable Cable Size Range: N/A	☐ with PE ☒ without PE
		*1) Protection class mated: ☐ Class I ☐ Class II ☒ built in type		☒ without		☐ with interlock ☒ without interlock
Plug PQ50S-48P-PCM PQ50S-48P PQ50S-36P PQ50-20P-PC PQ50-CM(22.0) PQ50-CM(15.0)	☒ Free Connector ☐ Fixed Connector	☒ Enclosed ☐ Un-enclosed	☒ Hand Back Safety mated ☒ Hand Back Safety unmated ☒ Finger Safety mated ☒ Finger Safety unmated ☐ IP67 mated ☒ IP20 unmated	☒ with ☐ with additional insulation bushing	Applicable Cable Size Range: ϕ 22mm (PQ50-CM(22.0)) ϕ 15mm (PQ50-CM(15.0))	☐ with PE ☒ without PE
		*1) Protection class mated: ☐ Class I ☐ Class II ☒ built in type		☐ without		☐ with interlock ☒ without interlock
Remark: *1)The protection class of components is dependent upon the equipment in which they are used, these connectors are intended for class I equipment normally.						

Insulation Coordination	
Overvoltage category	Ⅲ
Pollution degree	3
Insulation voltage	300V AC/DC
Test voltages	Contact – Contact: 2210 Vrms Contact – Body case: 2210 Vrms
Minimum creepage distances (mated)	Live Contact – Live Contact: 11.71 mm Case – Live Contacts: 7.66 mm

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Constructional Data Form for Connector

Minimum clearance distances (mated)	Live Contact – Live Contact: 5.58 mm Case – Live Contacts: 5.79 mm
Insulation system (IEC 60664-1)	Contact – Contact : ☒ basic ☐ reinforced ☐ NA Case – Contact : ☒ basic ☐ reinforced ☐ NA

Specifications of Terminals / Connection _ ☐Rewirable ☒Non-rewirable

Type of terminals	☒ Crimping terminal
Terminal designation	

Display	Part No.	Applicable wire size
–	PQ50S-1618SCFA(xx)	AWG#16-#18
1822S	PQ50S-1822SCFA(xx)	AWG#18-#22
2428S	PQ50S-2428SCFA(xx)	AWG#24-#28

Display	Part No.	Applicable wire size
–	PQ50S-1618PCFA(xx)	AWG#16-#18
–	PQ50SA-1618PCFA(xx)	AWG#16-#18
1822P	PQ50S-1822PCFA(xx)	AWG#18-#22
A1822P	PQ50SA-1822PCFA(xx)	AWG#18-#22
2428P	PQ50S-2428PCFA(xx)	AWG#24-#28
A2428P	PQ50SA-2428PCFA(xx)	AWG#24-#28

Spec. Tightening torque	N/A
Rated cross section of conductor	1.38 mm^2(AWG16), 0.86 mm^2 (AWG18), 0.53 mm^2 (AWG20), 0.34 mm^2 (AWG22), 0.22 mm^2 (AWG24), 0.14 mm^2 (AWG26) , 0.09 mm^2 (AWG28)
Type of conductor	Stranded wire
Required preparation of the conductor	Original crimping tool
Max. Stripping length	4.0mm
Max. Number of conductors per terminal	1

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Constructional Data Form for Connector

Materials		
Type designation		See Nomenclature
Contact material		Copper Alloy(Au 0.2 Plating)
Contact block (housing)		PBT MITSUBISHI ENGINEERING-PLASTICS CORP. MODEL: 5810GN2-30-BK8E or MODEL: 5010GN1-30AM2
Body(Enclosure)		PPS DIC COPR. MODEL:FZ-1130-D5 (Ni 5 plating), PBT TORAY INDUSTRIES, INC MODEL 1184GA30 (Ni 5 plating), or Zn Diecast
*2) Cord Anchorage	Insulation Bushing	N/A
	End Bell Cap	N/A

***2) Parts for Secure Cord Anchorage:**

Table 1 Rated current

Housing	Applicable contact	Rated current	Applicable cable
PQ50S-48S(xx) PQ50S-36S(xx)	PQ50S-1618SCFA(xx) PQ50S-1618SCA(xx)	5A	AWG#16
		5A	AWG#18
	PQ50S-1822SCFA(xx) PQ50S-1822SCA(xx)	5A	AWG#18
		3.5A	AWG#20
		3A	AWG#22
	PQ50S-2428SCFA(xx) PQ50S-2428SCA(xx)	2A	AWG#24
		1.5A	AWG#26
		1A	AWG#28
PQ50S-48P(xx) PQ50S-36P(xx)	PQ50S-1618PCFA(xx) PQ50S-1618PCA(xx) PQ50SA-1618PCFA(xx) PQ50SA-1618PCA(xx)	5A	AWG#16
		5A	AWG#18
	PQ50S-1822PCFA(xx) PQ50S-1822PCA(xx) PQ50SA-1822PCFA(xx) PQ50SA-1822PCA(xx)	5A	AWG#18
		3.5A	AWG#20
		3A	AWG#22
	PQ50S-2428PCFA(xx) PQ50S-2428PCA(xx) PQ50SA-2428PCFA(xx) PQ50SA-2428PCA(xx)	2A	AWG#24
		1.5A	AWG#26
		1A	AWG#28

TÜV Rheinland

13 July 2021 In Masuda

(Date) (Signature)

Yokohama, Japan

(Place)

Hirose Electric Co., Ltd. Kenichi Sato

13 July 2021

(Date)

(Stamp and Signature of Applicant)

TYPE NOMENCLATURE:

Housing
PQ50S-yz (xx)
y : pole
48, 36

z : type
S(Female), P(Male)

(xx) :customer specifications
none or (01) to (99)

Plug Case
PQ50S-48P-PCM (xx)
PQ50S-48P-PCMA (xx)
PQ50S-48P-PCLM (xx)
PQ50S-48P-PCLMA (xx)
PQ50-20P-PC (xx)
(xx) :customer specifications
none or (01) to (99)

Panel Case
PQ50S-48S-FLM (xx)
PQ50S-48S-FLMA (xx)
PQ50-20S-FL (xx)
(xx) :customer specifications
none or (01) to (99)

Clamp
PQ-CM(22.0) (xx)
PQ-CM(15.0) (xx)
PQ-CML(17.5) (xx)
(xx) :customer specifications
none or (01) to (99)

Contact
PQ50Sw-yz (xx)
w : type of connection area
A (long), non (normal)

y : wire size
1618(AWG#16 – AWG#18) , 1822(AWG#18 – AWG#22) , 2428(AWG#24 – AWG#28)

z : terminal type
SCFA (female : reel), SCA (female : bag), PCFA (male : reel), PCA (male : bag)

(xx) :customer specifications
none or (01) to (99)PQ50