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Features
System/model conf
I/O cable/terminal
Controller
Setting software \cdots

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System GSK PLC-less control system

Feature (Simple sequence function (GFB) is incorporated)

GFB is regularly mounted on nut runner controller

Various actuators can be managed and the sequence-less configuration of device is enabled by mounting GFB on nut runner controller

> GFB (Giken Function Block) The behavior of cylinder etc. can be set without PLC by using the setting software of system GSK for GIKEN's original circuit block.



•Various signals of solenoid valve etc. are controlled from actuator







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Positioning GSK

Feature

Peripheral device/option

Number of I/O points per I/O board Input: 24 points Output: 24 points Two I/O boards can be attached to system GSK. * For the standard model, only one I/O board is attached. The second board is an option.

System GSK system configuration

Model configuration

Interface





Blank:	One	I/O	board	
2 :	Two	I/0	boards	

• M	odel	list
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Model	I/O board
GSK-IFSG-N1	One I/O board
GSK-IFSG2-N1	Two I/O boards

*The controller can use GSK · GKL and Positioning GSK that way.



System/model configuration



③Corresponding series symbol

N1 : Standard

G S $\overline{}$ G K L Positioning GSK Controller Peripheral device/option

System GSK PLC-less control system

Name of each section

Interface



Port NO.	Name	Connector model	Opponent's connector housing	Opponent's connector pin	Opponent's connector Accessories	Communication method	Remarks
CN2	Control power supply input port	734-144 (WAGO)	734-104 (WAGO)	-	0	DC24V	
CN4	Port for connecting setting PC	UBB-4R-D14T-4D (JST)	USB Type B	-	-	USB communication	Cable model:GK-SET-1.8M
CN5	Port for connecting controller	MSTB2.5/4-GF-5.08 (PHOENIX CONTACT)	MSTB2.5/4-STF-5.08 (PHOENIX CONTACT)	_	0	ARC-NET communication	
CN7	Port for connecting display	1-1827876-4 (TE Connectivity)	1-1827864-4 (TE Connectivity)	1827570-2 (TE Connectivity)	-	RS422 communication	Cable model:GSK-DIS-10M
CN8	Port for connecting ID controller	1-1827876-4 (TE Connectivity)	1-1827864-4 (TE Connectivity)	1827570-2 (TE Connectivity)	-	RS422 communication	
CN10	Port for connecting printer	1-1827876-2 (TE Connectivity)	1-1827864-2 (TE Connectivity)	1827570-2 (TE Connectivity)	-	RS232C communication	Cable model:GK-PRN-1.5M :GK-PRN-3.0M
CN11	Battery	-	_	_	0	-	Battery model:CR2450 / Panasonic Battery included
CN12	SD card slot	-	-	-	-	-	SD/SDHC to 32GB or less supported SD card model: GK-SD-32G
CN13	Port for connecting I/O cable	8830-060-170S-F (KEL)	_	_	0	_	Standard model is equipped with only one port
CN14	Port for connecting I/O cable	8830-060-170S-F (KEL)	_	_	_	_	For the second sheet, an optional IO port: SYS-IO24 is separately required

I/O cable/terminal model ■System GSK I/O cable ◆I/O cable model





Model	
SYS-FA60-0.5M	
SYS-FA60-1M	
SYS-FA60-2M	
SYS-FA60-3M	

%60-pin flat cable

System GSK I/O terminal I/O terminal model

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EE	

Model SYS-FA60-TB

%The shape will be changed without notice. For the latest shape and dimensions, please contact our company.

Name of each section





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System GSK PLC-less control system

Double shield Twisted pair wire

SIG+ 、

SIG-

DG

EG

TX+

TX-

RX+

RX-

TX+

TX- 🤇

RX+

RX-

DG

TX+

<u>_____</u>

RX+

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RXD

Interface

Controller





Connection diagram



Setting software

To carry out various settings of GSK, a PC in which setting software is installed is required Various settings, communication status with upper device, tightening result, and tightening waveform can be confirmed with setting software.

Setting software model

Setting cable model

GK-SET-1.8M



Cable for connecting F software of GSK is ins	PC in which setting stalled and interface.
Model	Cable length[m]

Supported OS win7/8/8.1/10

The setting cable is common to all setting software.

1.8m

Hierarchy of setting software



Setting screen

[Main menu]

MAIN MENU	2018/02/17/09/4240
Setting read (F1)	Quality control (F5)
Setting write (F2)	Print/Excel output (F6)
Setting (F3)	I/O monitor (F7)
Auto measurement (F4)	Exit (F12)

Initial screen that is displayed when the setting software is activated.

[Setting menu]

Common setting (FI)	Program setting (F4)
Position setting (F2)	
Nutrianas setting (63)	Return (F12)

Screen for carrying out various settings.

[Rate Setting]



Screen for setting the details of used nut runner.

[PRE.T Setting]

Fitting thread Turning angle Speed	360 * 80 rpm	Fast forwarding Angle of fast forwarding Speed Prevailant tylenning distormantion typesong	2100 * 1300 rpm 2.5 N.m
Fit on work surface Prelightening tomour Speed 1 firsh tomour Upper tomour limit Lower tomour limit Speed 1 Speed 2 Over time Sampling start tomour Judgament of erea size	25 Nm 05 Nm 20 Nm 20 Nm 80 pm 40 pm 60 sec 1.3 Nm 100 x10	 Charge of option set Involve and for measurement. Measurement angle Tans before predictering Upper time limit. Lower time limit. Upper angle limit. Lower angle limit. Lower angle limit. Monitoring time limit non-torque. Predictering cutting angle. 	0 * 99990 * 0 maac 99959 * 0 maac 99959 *

Screen for setting bolt setting status to seating. (temporary tightening)

(REA.T Setting)

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Anituring time	0	-			Speed 4 salest in	10 Na
Automation Inc.	#95cm	s10			Speed 4	50 rgs

Screen for setting the final tightening For the type of final tightening, two types; torque method and angle method are available. *For the final tightening setting, up to No. 50 can be set.

Setting software

[SOC.T Setting]

Rotation angle	360 *	· Change of optio	n setting	and a part of
Speed	100 rpm	Operation	Torque determ	mation OFF
Rotation direction	Loosening direction -	Time before socket fitting	0 maes.	
		Over time	5 sec.	

Screen for setting the rotation for matching a bolt with a socket.

[REV.T Setting]

everse ande	2880		Speed I finish angle	190	
peed 1	60	rpm	Speed 2	800	rpm
leasurement angle	180	*	Time before reverse rotation	0	M445.
atsing torque	00	Nm			
aking torque	58.3	Nm			
iver time	5	886			

Screen for setting seizure judgment after temporary tightening of bolt.

[Auto setting]



Setting screen that automatically creates the tightening setting by inputting necessary items in case of full auto setting With the sampling setting, detailed setting is enabled by actually tightening a workpiece.

G $\overline{\sim}$ Positioning GSK Setting software Peripheral device/option

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[Alarm history]



Screen for saving the tightening result in PC by making a connection to controller.

[Tightening history]



Screen for importing the data saved in the controller in PC.

*Maximum number of saved items in tightening historyper axis: 5,000items

[I/O monitor]



Screen for importing the alarm data saved in the controller in PC.

*Maximum number of saved items in alarm history per axis:16 items

[Torque sensor zero point adjustment]



Screen for checking the zero point of current torque sensor.

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Screen for checking the I/O status with upper link.

[Self diagnosis]



Screen for checking each version of currently configured parts.

[Screw No. array setting]



Screen for setting the screw No. array to be displayed on the display (GSK-D1/ GK-D1 series).

[Tightening waveform]



Screen for importing the tightening waveform in PC.

[GFB configuration]



Screen for setting the basic setting (ladder) of GFB.

[Program setting]



Screen for setting the combination of behaviors related to tightening(socket matching,temporary inversion,final tightening)for each axis tightening, final tightening) for each axis.

%Maximum number of programs

Max.number of axes	Number of programs	Number of steps
30	16	220
30	50	70
8	50	220

[Monitor]

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Screen for checking the input /output status with the I / O board of the I / F.

[GFB input condition configuration]

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Screen for setting the input conditions of GFB.

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GKL

Positioning GSK

Peripheral device/option