

2.2

Main circuit terminal layout and wiring to power supply and motor

Thank you for choosing Mitsubishi Electric inverter. This Inverter

Safety Guideline provides handling information and precautions for

Details on the main circuit terminals and the control circuit terminals

2.5

nai pol	Common	Terminal name	Terminal function description						
2,	-	AC power input	Connected to the commercial power supply.						
	-	Inverter output	Connected to a three-phase squirrel cage motor or a PM motor.						
	-	DC reactor connection	Remove the jumper across terminals P/+ and P1, and connect a DC reactor. When a DC reactor is not connected, the jumper across terminals P/+ and P1 should not be removed.						
	_	Earth (ground)	For earthing (grounding) the inverter chassis. Be sure	e to earth (ground) the inverter.					
	SD (sink	Forward rotation start	Turn ON the STF signal to start forward rotation and turn it OFF to stop.	Input resistance: 4.7 kΩ Voltage when					
	common))	Reverse rotation start	Turn ON the STR signal to start reverse rotation and turn it OFF to stop.	urn ON the STR signal to start reverse rotation and urn it OFF to stop.					
RL*1	PC (source (positive common))	Multi-speed selection	Multi-speed can be selected according to the combine	ation of RH, RM and RL signals.	Current when contacts are short- circuited: 4 to 6 mADC				
	5	Power supply for a frequency setting potentiometer	Used as the power supply for an external frequency s potentiometer.	setting (speed setting)	5 ±0.5 VDC, Permissible load current: 10 mA				
	5	Frequency setting (voltage)	Inputting 0 to 5 VDC (or 0 to 10 VDC) provides the m (or 10 V) and makes input and output proportional. U: to 5 VDC (initial setting), 0 to 10 VDC, and 0 to 20 m/ Set the voltage/current input switch to the "t" position mA).	For voltage input, Input resistance: 10 to 11 kΩ Maximum permissible voltage: 20 VDC For current input, Input resistance: 245 ±5 Ω Permissible maximum current: 30 mA					
	—	Relay output (fault output)	1 changeover contact output indicates that the inverter activated and the outputs are stopped. Fault: discontinuity across B and C (continuity across across B and C (discontinuity across A and C)	30 VDC 1 A					
	SE	Inverter running	The output is in LOW state when the inverter output f than the starting frequency (initial value: 0.5 Hz). The stop or DC injection brake operation.*2	Permissible load 24 VDC (maximum 27 VDC) 0.1 A (The voltage drop is 3.4 V at maximum while the signal is ON.)					
	5	Analog voltage output	Among several monitor items such as output frequency, select one to output it via this terminals. (The signal is not output during an inverter reset.) The size of output signal is proportional to the magnitude of the corresponding monitor item.	ong several monitor items such as output juency, select one to output it via this terminals. e signal is not output during an inverter reset.) size of output signal is proportional to the gnitude of the corresponding monitor item.					
		Contact input common (sink	Common terminal for the contact input terminal (sink	logic).					
	_	External transistor common (source (positive common))	Connect this terminal to the power supply common te device, such as a programmable controller, in the source	rminal of a transistor output (open urce logic to avoid malfunction by u	collector output) undesirable current.				
		common	Common output terminal for 24 VDC 0.1 A power sup	oply (terminal PC). Isolated from te	erminals 5 and SE.				
		External transistor common (sink (negative common))	Connect this terminal to the power supply common te (open collector output) device, such as a programmal avoid malfunction by undesirable current.	rminal of a transistor output ble controller, in the sink logic to	Power supply voltage range: 22 to 26 5 VDC				
		Contact input common (source (positive common))	Common terminal for the contact input terminal (sour	ce logic).	Permissible load current: 100 mA				
	SD	24 VDC power supply	Can be used as a 24 VDC 0.1 A power supply.	10) D 11/ (
	_	Frequency setting common	Common terminal for the frequency setting signal (ter	minai 2) . Do not earth (ground).					
	-	output common	Common terminal for terminal RUN.						
		Inverter transmission terminal	RS-485 communication can be made through the RS	-485 terminals.					
			Conforming standard: EIA-485 (RS-485)						
	-	Inverter reception terminal	Communication speed: 300 to 115200 bps						
		Earthing (grounding)	Wiring length: 500 m						
	_	USB connector*3	Use the USB connector to communicate with a perso · Interface: conforms to USB 1.1· Transmission speed · Connector: USB mini B connector (receptacle mini fi	nal computer. d: 12 Mbps 3 type)					

Starting/stopping the inverter on the operation panel =67)= 8888 External operation mode PU operation mode LD) Change the setting 5*8.8 8* SET Stop = STOP Start RUN Applied to the set frequency Parameter setting (Example) Change the setting The present setting Parameter setting complete 4 Differences in the functions 5 PARAMETERS from the standard inverter For details, refer to the FR-E800 Instruction Manual (Function The PDF manual can also be downloaded from the Mitsubishi Electric FA Glob For details, refer to the FR-E860-HVC Instruction Manual (Connection). The PDF manual can also be downloaded from the Mitsubishi Electric FA Global rmation on the product Website 6 LIST OF FAULT DISPLAYS For details, refer to the FR-E800 Instruction Manual (Maintenance The PDF manual can also be downloaded from the Mitsubishi Electric FA Globa For more information on the product 7 SPECIFICATIONS 7.1 Inverter rating Three-phase 575 V power supply

	Model: FR-E86	0-[]-HVC		0021	1 0030 0048 0070 0090				0136
Арр	olicable motor capac	1.5	2.2	3.7	5.5	7.5	11.0		
	Rated capaci	LD	2.1	3.0	4.8	7.0	9.0	13.5	
Output	Rated curre	ent (A)*3	LD	2.1	3.0	4.8	7.0	9.0	13.6
	Overload current rating*4 LD			120% 60 s, 150% 3 s (inverse-time characteristics) at surrounding air temperature of 50°C					
	Voltage*5			Three-pha	ise 525 to 6	00 V			
Rated input AC (DC) voltage/frequency				Three-pha	ise 575 V 60) Hz			
	Permissible AC (D	490 to 632	2 V, 60 Hz						
	Permissible fre	±5%							
	Rated input current (A)*7	Without DC reactor	LD	4.3	5.9	8.9	12.4	15.9	22.4
supply		With D reactor		2.5	3.6	5.6	8.2	11.0	16.0
	Power supply	Without DC reactor	- 5	4.3	5.9	8.9	12.0	16.0	23.0
	capacity (kVA)*6	With DC reactor		2.5	3.6	5.6	8.2	11.0	16.0
Protective structure		UL Type 1	(Enclosed	Type*8)(UL5	i0)/IP20 (for	IEC 60529 0	only)		
Cooling system		Natural	I Forced air						
	Approx. mas	ss (kg)		2.3	2.3	2.3	3.3	3.3	3.3
	-					•			

- limit level). Pr.874 OLT level setting. Pr.150 Output rei
- Model: FR-E860-[]-HVC 0021 0030 0048 0070 0090 0136 Current value (A) 2.5 3.6 5.6 8.2 11.0 16.0
- The percentage of the overload current rating is the ratio of the overload current to the inverter's rated output current. For repeated duty, allow time for the inverter and motor to return to or below temperat not exceed the power supply voltage. The maximum output voltage can be changed within the setting range. The maximum poin
- the inverter is approximately the power supply voltage multiplied by $\sqrt{2}$, oply capacity varies with the value of the input power impedance (includ it current is the value at a rated output current. The input power impedan ding those of the input reactor and cables

Inverter installation environment 7.2

Item	Description					
Surrounding air temperature*1	-10°C to +50°C	Enclosure				
Ambient humidity	95% RH or less (non-condensing)	Inverter Measurement				
Storage temperature	-40°C to +70°C	5 cm 5				
Atmosphere	Indoors (free from corrosive gas, flammable gas, oil mist, dust and dirt)					
Altitude/vibration	Maximum 2000 m, 5.9 m/s ² or less (For installation at an altitude above 1000 m, consider a 3% reduction in the rated current per 500 m increase in altitude.)					

Surrounding air temperature is a temperature measured at a measurement position in an enclosure. Ambient temperature is a temperature outside an enclose

Control circuit terminals (connector) layout



Viewed from the bottom of the inverter 22 21 20 19 18 17 16 15 14 13 11 10 9 8 7 6 5 4

nctions can be selected using Pr.178 to Pr.182 (Input terminal function selection). (Refer to the FR-E800 Instruction Manual (Fund sollector transistor is ON (conductive) in LOW state. The transistor is OFF (not conductive) in HIGH state.

19 B		
Terminal symbol	Pin number	Terminal symbol
SDA (RS-485)	12	RDB (RS-485)
SDB (RS-485)	13	RDA (RS-485)
SG (RS-485)	14	2
5	15	AM
10	16	PC
RH	17	RL
RM	18	STF
STR	19	SD
RUN	20	SE
-	21	С
A	22	В

It is recommended to use a cable of 0.2 to 0.8 mm² for the connection to the control circuit terminals.

lable products (as of July 2021

ne	Model	Manufacturer
	2-1586019-2	TE Connectivity
	1586315-1	TE CONNECTIVITY

Connecting the cable to the connector
Connect the cable to the connector of the control circuit terminal on the inverter

BASIC OPERATION

Components of the operation panel

	Name	Description
	HAND/AUTO key	Switches between the PU operation mode, the PUJOG operation mode, and the External operation mode.
	MODE key	Switches the operation panel to a different mode.
Δ = NET = PRUN	SET key	Used to confirm each selection. Switches the monitor screen in the monitor mode.
MODE SET	RUN key	Start command The direction of motor rotation depends on the Pr.40 setting.
	STOP/RESET key	Used to stop operation commands. Used to reset the inverter when the protective function is activated.
	Setting dial	The setting dial of the Mitsubishi Electric inverters. Turn the setting dial to change the setting of frequency or parameter.

8 APPENDIX

For information on other applicable standards not found in this document, refer to the FR-E860-HVC Instruction Manual (Connection).

8.1 Instructions for compliance with the EU Directives

The authorized representative in the EU The authorized representative in the EU is shown below

Name: Mitsubishi Electric Europe B.V.

Address: Mitsubishi-Electric-Platz 1, 40882 Ratingen, Germany

Compliance with EN 60730-1 This product is compliant with EN 60730-1 under the following conditions.

To support the compliance, use the product in applications other than Industrial process application.

Automatic action:Type 1 action Control function: Class A

Control purpose:Operating Control onstruction:Incorporated control Use the product in applications other than Industrial process application.

 EMC Directive
We declare that this inverter conforms with the EMC Directive and affix the CE marking on the inverter. EMC Directive: 2014/30/EU

- Standard: IEC 61800-3 Category "C3" / Second environment This inverter is not intended to be used on a low-voltage public network which supplies domestic premises. When using the inverter in a residential area, take appropriate measures and ensure the conformity of the inverter used in the residential area.
- Radio frequency interference is expected if used on such a network Notes
- Set the EMC Directive compliant EMC filter to the inverter. Insert line noise filters and ferrite cores to the power and control cables as required.
- Set the EMC Directive compliant EMC line to the inverter. Insert the holes liners and leftite cores to the power and control cables as required. Connect the inverter to an earthed power supply. Install the motor and controller cable found in the EMC Installation Guidelines (BCN-A21041-204) and Technical News (MF-S-192) according to the instructions. (Contact your sales representative for the manual.) To make full use of the EMC Directive compliant noise filter, motor cable lengths should not exceed 20 m. Ensure that the finalized system which includes an inverter complies with the EMC Directive.
- Low Voltage Directive
 We have self-confirmed our inverters as products compliant to the Low Voltage Directive and affix the CE marking on the inverters.
- Low Voltage Directive: 2014/35/EU Standard: EN 61800-5-1

Outline of instructions

- · Do not use an earth leakage circuit breaker as an electric shock protector without connecting the equipment to the earth. Connect the equipment to the earth (ground)
- securely. Wire the earth terminal independently. (Do not connect two or more cables to one terminal.) Select appropriate wire according to EN 60204-1 or IEC 60364-5-52. (Refer to the selection examples of cable sizes in 2.3 Recommended cables and wiring length.) Use a tinned (plating should not include zinc) crimping terminal to connect the earth (ground) cable. When tightening the screw, be careful not to damage the threads. For use as a product compliant with the Low Voltage Directive, use PVC cables. Use PVC cables for I/O wiring. Use the molded case circuit breaker and magnetic contactor which conform to the EN or IEC Standard. If an earth theraker and magnetic contactor which conform to the EN or IEC Standard.
- Use the inverter under the conditions of overvoltage category III specified in IEC 60664. To use the inverter under the conditions of pollution degree 3, install it in the enclosure of IP54 or higher for protection against electric shock and fire.

• Fuse selection for branch circuit protection For details, refer to 8.2 Instructions for UL and cUL: Fuse selection

Motor overload protection
For details, refer to 8.2 Instructions for UL and cUL: Motor overload protection

EU RoHS Directive

We have declared that our inverters are compliant to the EU RoHS Directive and affix the CE marking on the inverters.

For other information, refer to the FR-E860-HVC Instruction Manual (Connection).

8.2 Instructions for UL and cUL

(Standard to comply with: UL 61800-5-1, CSA C22.2 No. 274UL 60730-1, CAN/CSA E 60730-1)

Product handling information / Informations sur la manipulation du product

WARNING- Operation of this product requires detailed installation and operation instructions provided in this Safety Guideline and the Instruction Manual (Connection) intended for use with this product. Please forward relevant manuals to the end user. The manuals can also be downloaded in PDF form from the Mitsubishi Electric FA Global Website. To order manuals, please contact your sales repr

-AVERTISSEMENT L'utilisation de ce produit nécessite des instructions détaillées d'installation et d'utilisation fournies dans le présent document de la Directive de sécurité et le Manuel d'instructions (Connexion) destiné à être utilisé avec ce produit. Veuillez transmettre les manuels correspondants à l'utilisateur final. Les manuels peuvent également être téléchargés au format PDF sur Mitsubishi Electric FA Global Website. Pour commander des manuels, veuillez contacter votre représentant commercial.

Branch circuit protection For installation in the United States, branch circuit protection must be provided in accordance with the National Electrical Code and any applicable local codes.

For installation in Canada, branch circuit protection must be provided in accordance with the Canadian Electrical Code and any applicable local codes. For installation in Canada, branch circuit protection must be provided in accordance with the Canadian Electrical Code and any applicable local codes. Integral solid state short circuit protection does not provide branch circuit protection. Branch circuit protection must be provided in accordance with the National Electrical Code and any applicable local codes.

Precautions for opening the branch-circuit protective device / Précautions pour ouvrir le dispositif de protection du circuit de dérivation
 WARNING- If the fuse melts down or the breaker trips on the input side of this product, check for wiring faults (such as short circuits). Identify and remove the cause of melting down or the trip before replacing the fuse or resetting the tripped breaker (or before applying the power to the inverter again).

-AVERTISSEMENT-Si le fusible fond ou si le disjoncteur se déclenche du côté entrée de ce produit, vérifier les défauts de câblage (tels que les courts-circuits). Identifier et éliminer la cause de la fonte ou du déclenchement avant de remplacer le fusible ou de réinitialiser le disjoncteur déclenché (ou avant de remettre sous tension l'onduleur).

Fuse selection Fuses are selected based on IEC/EN/UL 61800-5-1 and CSA C22.2 No. 274.

For installation in the United States, the semiconductor fuses shown in the following table must be provided, in accordance with the National Electrical Code and any applicable local codes. Always install the following semiconductor fuses for branch circuit protection.

				_				
Inverter model	Cat. No	Manufacturer	Rating		Inverter model	Cat. No	Manufacturer	Rating
FR-E860-0021(1.5K)	170M1409, 170M1309, or 170M1359	Bussmann	700 V, 16 A		FR-E860-0070(5.5K)	170M1413, 170M1313, or 170M1363	Bussmann	700 V, 40 A
FR-E860-0030(2.2K)	170M1410, 170M1310, or 170M1360	Bussmann	700 V, 20 A		FR-E860-0090(7.5K)	170M1414, 170M1314, or 170M1364	Bussmann	700 V, 50 A
FR-E860-0048(3.7K)	170M1312, 170M1362, or 170M1412	Bussmann	700 V, 32 A		FR-E860-0136(11K)	170M1415, 170M1315, or 170M1365	Bussmann	700 V, 63 A

• Capacitor discharge time / Temps de décharge du condensateur

CAUTION - Risk of Electric Shock Before wiring or inspection, check that the LED display of the operation panel is OFF. Any person who is involved in wiring or inspection shall wait for 10 minutes or longer after power OFF, and theck that there are no residual voltage using a digital multimeter or the like. The capacitor is charged with high voltage for some time after power OFF, and it is dangerous.

ATTENTION - Risque de choc électrique

Avant le câblage ou l'inspection, vérifier que le témoin LED s'éteint. Toute personne impliquée dans le câblage ou l'inspection doit attendre 10 minutes ou plus après la mise hors tension et vérifier l'absence de tension résiduelle à l'aide d'un multimètre numérique ou similaire. Le condensateur est chargé avec une haute tension pendant un certain temps après la mise hors tension, ce qui est dangereux. Précautions pour ouvrir le dispositif de protection du circuit de dérivation

Wiring to the power supply and the motor
 Refer to the National Electrical Code (Article 310) regarding the allowable current of the cable. Select the cable size for 125% of the rated current according to the National Electrical Code (Article 430). For wiring the input (R/L1, S/L2, T/L3) and output (U, V, W) terminals of the inverter, use the UL listed copper, stranded wires (rated at 75°C) and round crimp terminals. Crimp the terminals with the crimping tool recommended by the terminal manufacturer.

The following table shows examples when the inverter rating is the LD rating, when the cable is the THHW cable with continuous maximum permissible temperature of 75°C, when the surrounding air temperature is 30°C or less, and the wiring length is 20 m or shorter.

			Crimp tormi	nal	Cable gauge			
Inverter model	Terminal screw	Tightening torque (N⋅m)	Chillip termi	IIdi	AWG			
inverter moder	size*1		R/L1, S/L2, T/L3	U, V, W	R/L1, S/L2, T/L3	U, V, W	Input / Output Signal	
FR-E860-0021(1.5K) to 0048(3.7K)	M4(M3.5)	1.5	2-4	2-4	14	14		
FR-E860-0070(5.5K) to 0090(7.5K)	M4	1.5	3.5-4	2-4	12	14	22 to 18	
FR-E860-0136(11K)	M4	1.5	5.5-4	3.5-4	10	12		

Short circuit ratings

*1 The screw size for terminals R/L1, S/L2, T/L3, U, V, W, P/+, N/-, and P1, and the earthing (grounding) terminal are shown 600 V class: Suitable for use in a circuit capable of delivering not more than 100 kA rms symmetrical amperes. 575 V maximum

 Motor overload protection The following explains the details of the motor overload protection.

When using the electronic thermal relay function as motor overload protection, set the rated motor current in Pr.9 Electronic thermal O/L relay.



This function detects the overload (overheat) of the motor and shut off the inverter output by stopping the operation of the transistor at the inverter output side. (The operation characteristic is shown on the left.)

- When using the constant-forque motor 1) Set one of "10, 13, 15, or 16" in **Pr.71**. (This setting enables the 100% constant-torque characteristic in the
- low-speed range.) Set the rated motor current in Pr.9.
- - When setting **Pr.9** to a value (current value) of 50% of the inverter rated output current. The % value denotes the percentage to the inverter rated output current. It is not the percentage to the rated motor current. When the electronic thermal relay function dedicated to the constant-forque motor is set, this characteristic curve applies to operation at 6 Hz or higher. *2 *3 6 Hz or higher.
- · The internal accumulated heat value of the electronic thermal O/L relay is reset to the initial value by the inverter's power reset or reset signal input. Avoid
- unnecessary reset and power-OFF. Install an external thermal relay (OCR) between the inverter and motors to operate several motors, a multi-pole motor or a dedicated motor with one inverter When configuring an external thermal relay, note that the current indicated on the motor rating plate is affected by the line-to-line leakage current. (Refer to the When comparing an external treatment ready, note that the current indicated on the motor range plate is an external treatment ready current. (refer to the Instruction Manual (Function).) The cooling effect of the motor drops plating low-speed operation. Use a motor with built in thermal protector. When the difference between the inverter and motor capacities is large and the set value is small, the protective characteristics of the electronic thermal relay function will be deteriorated. Use an external thermal relay in such cases.
- The cooling effect of the motor drops during low-speed operation. Use a motor with built-in thermal protector.
 A dedicated motor cannot be protected by the electronic thermal relay. Use an external thermal relay.
- Motor over temperature sensing is not provided by the drive.
- The electronic thermal memory retention function is not provided by the drive
 The electronic thermal relay function is not a speed sensing function.

Instruction for UL 60730-1 The controls were evaluated for mitigating inherit fire and shock hazards. The reliability of the firmware relied upon for lock rotor and thermal motor protection is outside

the scope of this evaluation.

8.3 SERIAL number check

The SERIAL number can be checked on the inverter rating plate or package. Rating plate example

aung plate example			
Inverter model —— Input rating —— Output rating ——	MDEL :FR-E860-0021-5-60HVC INPUT :XXXXX OUTPUT :XXXXX	PASSED	
SERIAL	► SERIAL:XXXXXXXXXX		_
Country of origin ——	MADE IN XXXXX		The SERIAL c and month, an

Symbol Year Month Control number

SERIAL consists of two symbol, three characters indicating the production year d six characters indicating the control number

digits of the production year are indicated as the Year, and the Month is indicated by 1 to 9, X (October), Y (November), or Z (Decemb

8.4 The power loss data according to Ecodesign Directive

Based on the EU ErP Directive (Ecodesign Directive), the loss data of the inverters are shown in the following table. The regulation covers 3-phase variable speed drives from 0.12 kW \leq Pn \leq 1.000 kW

Model name	Apparent power (kVA)	Stand by loss (W)	load point 1 (90;100) (%)	load point 2 (50;100) (%)	load point 3 (0;100) (%)	load point 4 (90;50) (%)	load point 5 (50;50) (%)	load point 6 (0;50) (%)	load point 7 (50;25) (%)	load point 8 (0;25) (%)	IE class
FR-E860-0021(1.5K)	2.5	5.7	1.7	1.7	1.7	1.2	1.2	1.2	1.0	1.0	IE2
FR-E860-0030(2.2K)	3.6	9.8	1.4	1.4	1.4	1.1	1.1	1.1	0.9	0.9	IE2
FR-E860-0048(3.7K)	5.6	9.8	1.3	1.3	1.3	1.0	1.0	1.0	0.8	0.8	IE2
FR-E860-0070(5.5K)	8.2	14.5	1.3	1.3	1.3	0.9	0.9	0.9	0.8	0.8	IE2
FR-E860-0090(7.5K)	11	14.5	1.2	1.2	1.2	0.7	0.7	0.7	0.6	0.6	IE2
FR-E860-0136(11K)	16	14.5	1.2	1.1	1.1	0.7	0.7	0.7	0.5	0.5	IE2

8.5 Restricted Use of Hazardous Substances in Electronic and Electrical

Products The mark of restricted use of hazardous substances in electronic and electrical products is applied to the product as follows based on the "Management Methods for the Restriction of the Use of Hazardous Substances in Electrical and Electronic Products" of the People's Republic of China. 电器电子产品有害物质限制使用标识要求



	有害物质 *1							
部件名称 *2	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr (VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)		
电路板组件 (包括印刷电路板及其构成的零部件, 如电阻、电容、集成电路、连接器等)、电子部件	×	0	×	0	0	0		
金属壳体、金属部件	×	0	0	0	0	0		
树脂壳体、树脂部件	0	0	0	0	0	0		
螺丝、电线	0	0	0	0	0	0		

上表依据 SJ/T11364 的规定编制。

):表示该有害物质在该部件所有均质材料中的含量均在 GB/T26572 规定的限量要求以下。

×:表示该有害物质在该部件的至少一种均质材料中的含量超出 GB/T26572 规定的限量要求

即使表中记载为 X, 根据产品型号, 也可能会有有害物质的含量为限制 根据产品型号, 一部分部件可能不包含在产品中。 Warranty 9

Exclusion of loss in opportunity and secondary loss from warranty liability Regardless of the gratis warranty term, Mitsubishi shall not be liable for compensation to: (1) Damages caused by any cause found not to be the responsibility of Mitsubishi. (2) Loss in opportunity, lost profits incurred to the user by Failures of Mitsubishi products. (3) Special damages and secondary damages whether foreseeable or not, compensation for accidents, and compensation for damages to products other than Mitsubishi products Mitsubishi products Replacement by the user, maintenance of on-site equipment, start-up test run and other tasks.



• 产品中所含有害物质的名称及含量

本产品中所含有的有害物质的名称、含量、含有部件如下表所示