

*Changes for the Better*



Open Field Network CC-Link

2002 No.179E

**NEW PRODUCT RELEASE**

**CC-Link**

**AJ65MBTL1N-16DT, AJ65MBTL1N-16D, AJ65MBTL1N-16T**  
**Embedded I/O Adapters**

**New!**

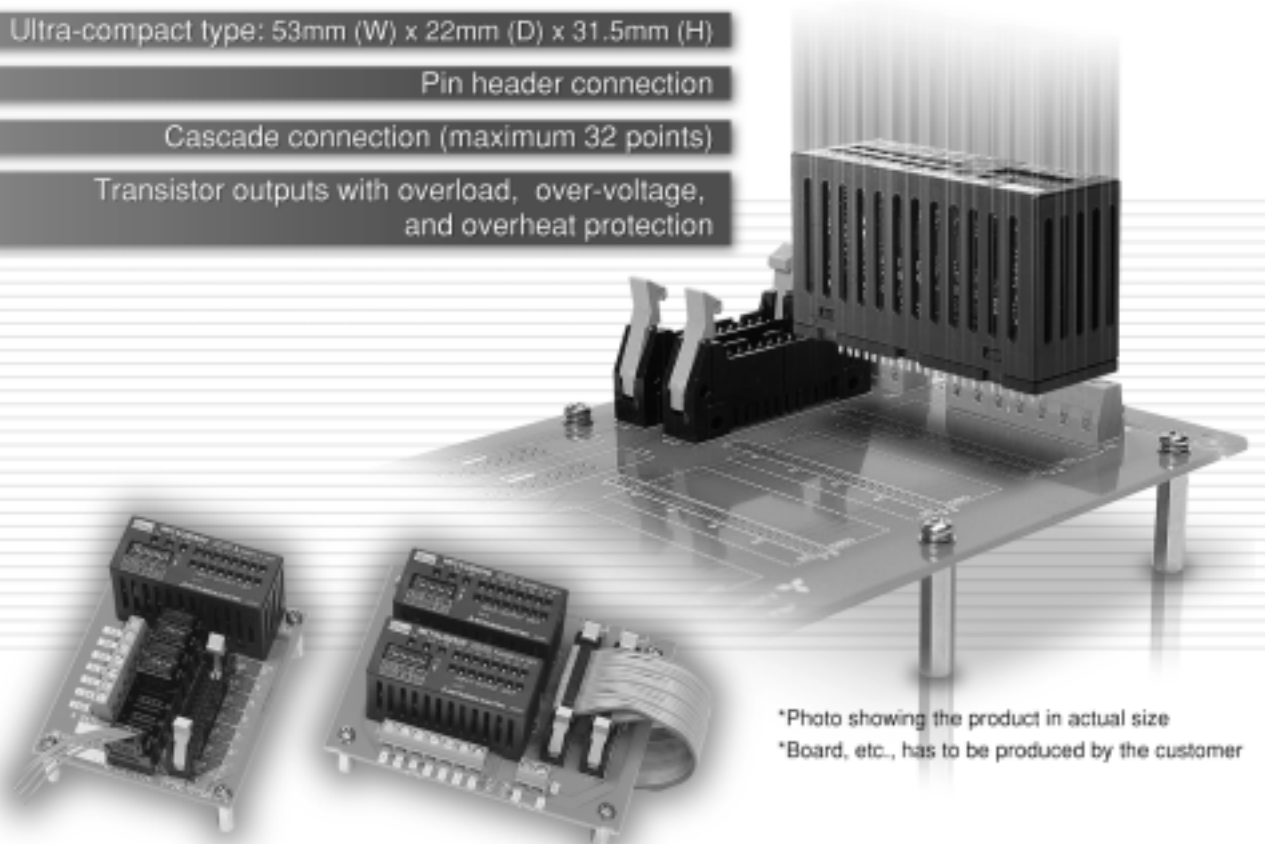
**"Ultra-compact direct mountable adapter"  
remote I/O realizing free, efficient design!**

Ultra-compact type: 53mm (W) x 22mm (D) x 31.5mm (H)

Pin header connection

Cascade connection (maximum 32 points)

Transistor outputs with overload, over-voltage,  
and overheat protection



\*Photo showing the product in actual size

\*Board, etc., has to be produced by the customer

Cascade connection example

## [Features]

Remote I/O adapter that works by being embedded into a device.

- **Ultra-compact type!!**  
15% smaller than the conventional AJ65SBTC4-16DT compact remote I/O module.
- **Pin header connection**  
Directly mountable onto the customer produced board.
- **Cascade connection!**  
Two adapters can be mounted on one board.  
(Up to 32 points are supported.)
- **An external additional filter is available to enhance noise durability.**  
If noise reduction is required, a noise filter can be added on an external board.
- **Transformer-isolation for power supply, and Photocoupler isolation for External I/O.**
- **Enhanced protection!**  
The transistors in the output circuit provide protection against overload, over-voltage, and overheat.

## [Specifications]

Model	Specifications
AJ65MBTL1N-16DT	CC-Link embedded I/O adapter Pin header type interface (44 pins, 2 lines, 2mm pitch size) 24V DC positive common (sink) input - 8 points, transistor 0.1A sink output - 8 points
AJ65MBTL1N-16D	CC-Link embedded input adapter Pin header type interface (44 pins, 2 lines, 2mm pitch size) 24V DC positive common (sink) input - 16 points
AJ65MBTL1N-16T	CC-Link embedded output adapter Pin header type interface (44 pins, 2 lines, 2mm pitch size) Transistor 0.1A sink output - 16 points

# [Performance Specifications]

## (1) AJ65MBTL1N-16DT Embedded I/O Adapter

Form		DC input transistor output combined adapter	
Specification		AJ65MBTL1N-16DT	
Input specification		Output specification	
Number of input points	8 points	Number of output points	8 points
Isolation method	Photocoupler	Isolation method	Photocoupler
Rated input voltage	24V DC	Rated load voltage	24V DC
Rated input current	Approx. 7mA	Operating load voltage range	20.4 to 26.4V DC (ripple ratio: within 5%)
Operating voltage range	19.2 to 26.4V DC (ripple ratio: within 5%)	Max. load current	0.1A/point 0.8A/common
Max. simultaneous input points	50%	Max. inrush current	0.7A 10ms or lower
ON voltage/ON current	14V or higher/3.5mA or higher	Leakage current at OFF	0.1mA or lower
OFF voltage/OFF current	6V or lower/1.7mA or lower	Max. voltage drop at ON	0.1V or lower (TYP)0.1A 0.2V or lower (MAX)0.1A
Input resistance	Approx. 3.3 kΩ	Output type	Sink type
Response time	OFF → ON	Protection functions	Overload, over-voltage, and overheat protection
	ON → OFF		
Input type	Positive common (Sink type)	Response time	OFF → ON
			ON → OFF
		External Power supply for output	Voltage
			Current
		Surge suppression	Zener diode
Wiring method for common	16 points/1 common		
CC-Link station type	Remote I/O station		
Number of occupied stations	1 station 32 points assignment (use 16 points)		
I/O adapter power supply	Voltage	20.4 to 26.4V DC(ripple ratio: within 5%)	
	Current	50mA or lower (when all points are ON at 24V DC) Not including external load current	
Noise durability	DC type noise voltage 500 Vp-p, noise width 1 μs, noise carrier frequency 25 to 60Hz(noise simulator condition)		
Dielectric withstand voltage	500V AC for 1 minute between all DC external terminals and ground		
Insulation resistance	10 M Ω or higher, measured with a 500V DC insulation resistance tester between all DC external terminals and ground		
Weight	0.03kg		
External wiring system	44-pin, 2-row, 2mm-pitch pin header		
External dimensions [mm (in.)]	53(W) × 22(H) × 31.5(D) (2.09 × 0.89 × 1.24)		

### External connection

Pin No.	Signal name	Pin No.	Signal name
B22	DA	A22	DB
B21	DG	A21	FG
B20	OE-OUT	A20	OE-IN
B19	SD-OUT	A19	SD-IN
B18	RD	A18	RDGON
B17	Empty	A17	GND
B16	Empty	A16	Empty
B15	Empty	A15	Empty
B14	X0	A14	X1
B13	X2	A13	X2
B12	X4	A12	X4
B11	X6	A11	X6
B10	Y8	A10	Y8
B09	YA	A09	YA
B08	YC	A08	YC
B07	YE	A07	YE
B06	DC24V	A06	DC24V
B05	DC24G	A05	DC24G
B04	Empty	A04	Empty
B03	Empty	A03	Empty
B02	+ 24V	A02	+ 24V
B01	24G	A01	24G

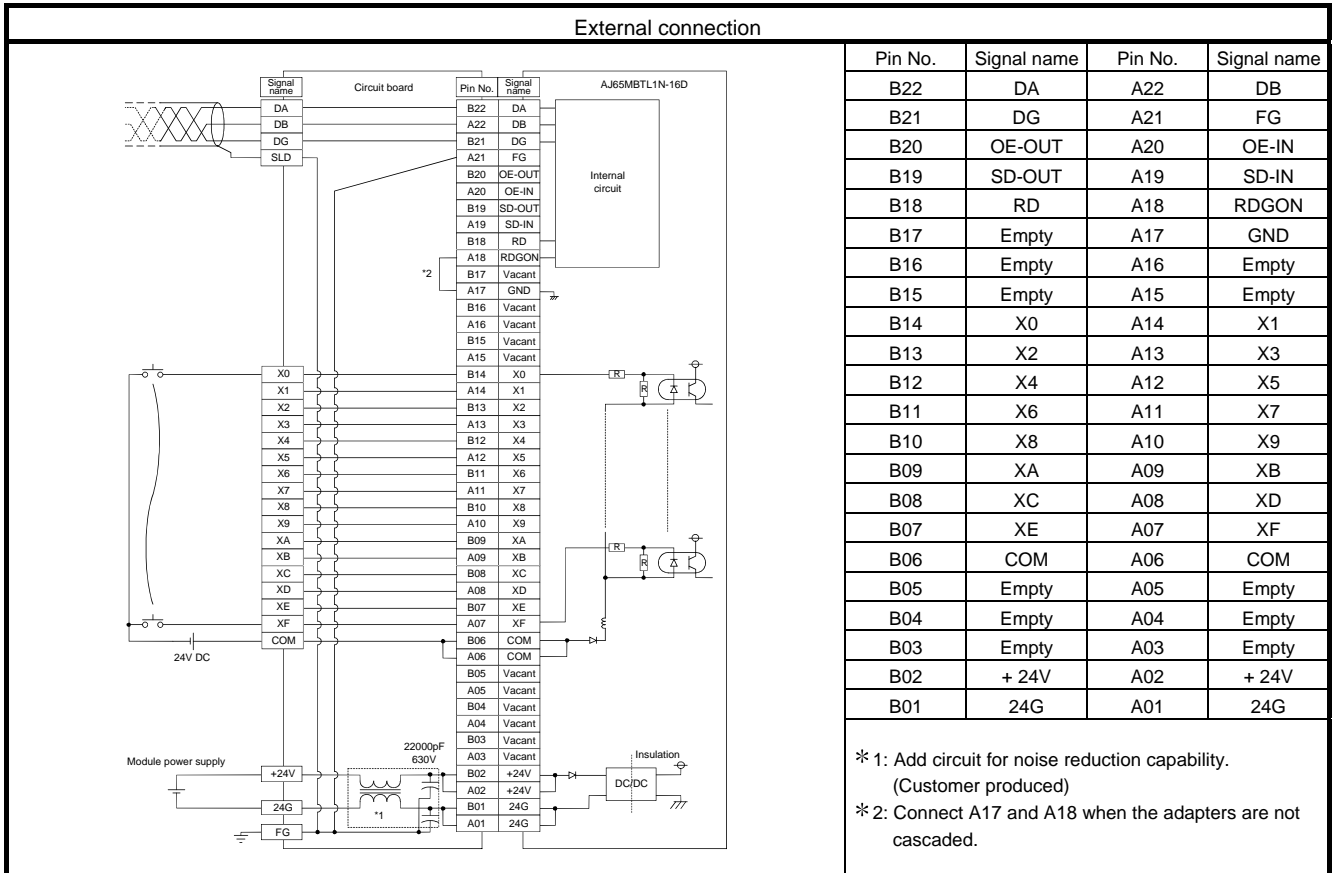
\* 1: Add circuit for noise reduction capability. (Customer produced)

\* 2: Connect A17 and A18 when the adapters are not cascaded.



## (2) AJ65MBTL1N-16D Embedded Input Adapter

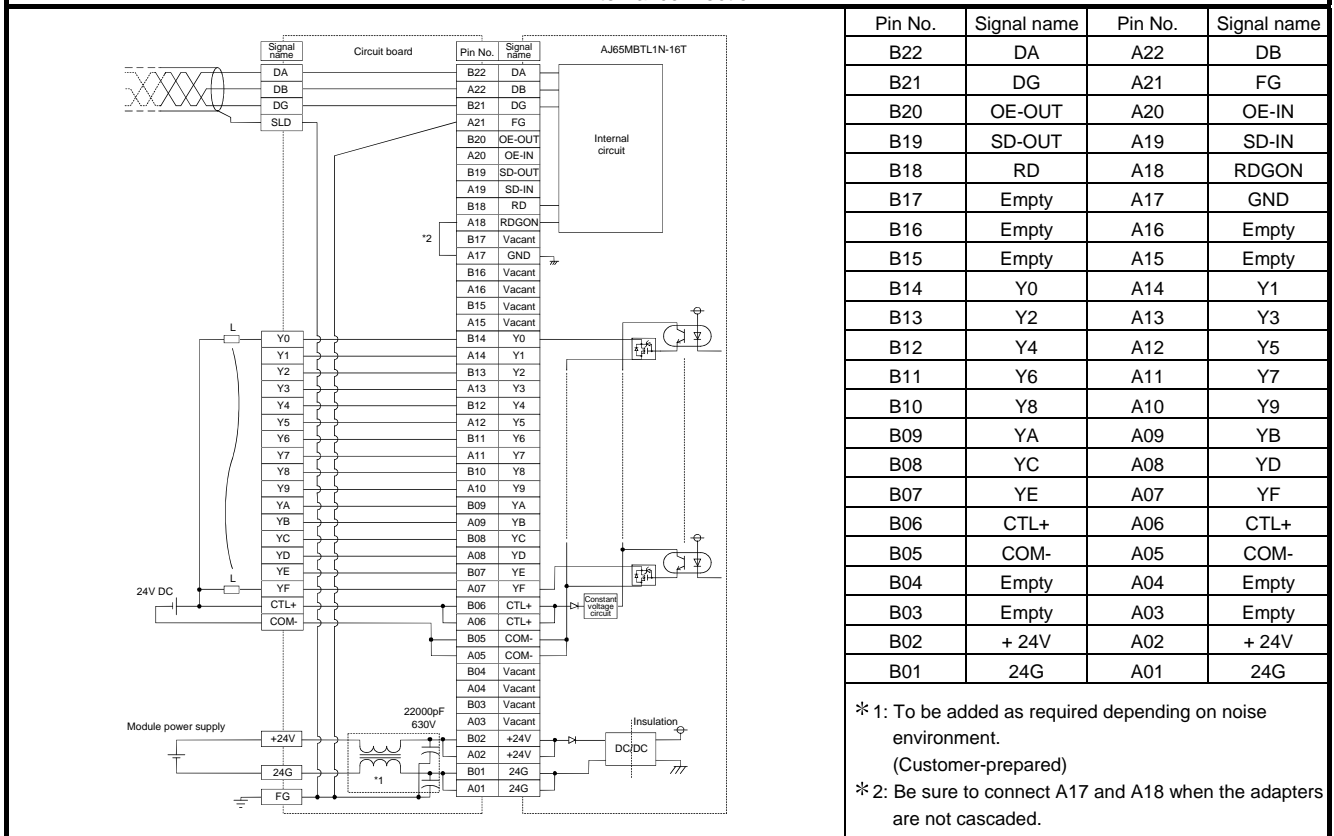
Form		DC input adapter
Specification	AJ65MBTL1N-16D	
Input specification		
Number of input points	16 points	
Isolation method	Photocoupler	
Rated input voltage	24V DC	
Rated input current	Approx. 4mA	
Operating voltage range	19.2 to 26.4V DC (ripple ratio: within 5%)	
Max. simultaneous ON input points	50%	
ON voltage/ON current	18V or higher/3.5mA or higher	
OFF voltage/OFF current	6V or lower/1.7mA or lower	
Input resistance	Approx. 5.1 kΩ	
Response time	OFF → ON	1.5ms or lower (at 24V DC)
	ON → OFF	1.5ms or lower (at 24V DC)
Input type	Positive common (sink)	
Wiring method for common	16 points/1 common	
CC-Link station type	Remote I/O station	
Number of occupied stations	1 station 32 points assignment (use 16 points)	
I/O adapter power supply	Voltage	20.4 to 26.4V DC (ripple rate: within 5%)
	Current	35mA or lower (at 24V DC)
Noise durability	DC type noise voltage 500 Vp-p, noise width 1 μs, noise carrier frequency 25 to 60Hz (noise simulator condition)	
Dielectric withstand voltage	500V AC for 1 minute between all DC external terminals and ground	
Insulation resistance	10 M Ω or higher, measured with a 500V DC insulation resistance tester	
Weight	0.03kg	
External wiring system	44-pin, 2-row, 2mm-pitch pin header	
External dimensions [mm (in.)]	53(W) × 22(H) × 31.5(D) (2.09 × 0.89 × 1.24)	



### (3) AJ65MBTL1N-16T Embedded Output Adapter

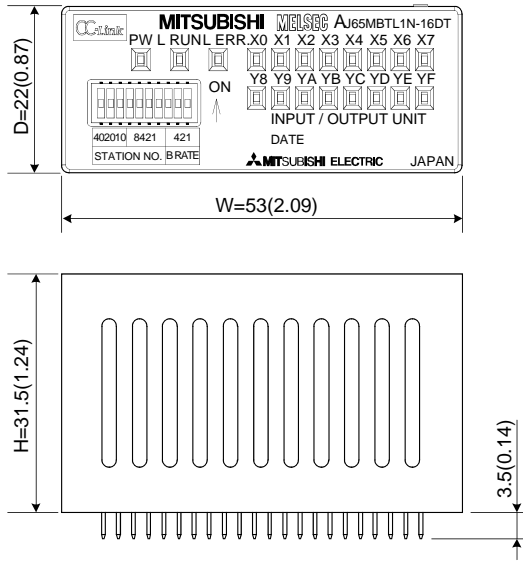
Form		Transistor output adapter
Specification		AJ65MBTL1N-16T
Output specification		
Number of output points	16 points	
Isolation method	Photocoupler	
Rated load voltage	24V DC	
Operating load voltage range	20.4 to 26.4V DC (ripple ratio: within 5%)	
Max. load current	0.1A/point, 1.6A/1 common	
Max. inrush current	0.7A 10ms or lower	
Leakage current at OFF	0.1mA or lower	
Max. voltage drop at ON	0.1V or lower (TYP) 0.1A 0.2V or lower (MAX) 0.1A	
Output method	Sink type	
Protection functions	Overload, over-voltage, and overheat protection	
Response time	OFF → ON	1ms or lower
	ON → OFF	1ms or lower (rated load, resistive load)
External Power supply for output	Voltage	10.2 to 26.4V DC (ripple ratio: within 5%)
	Current	5mA or lower (when all points are ON at 24V DC) Not including external load current
Surge suppression	Zener diode	
Wiring method for common	16 points/1 common	
CC-Link station type	Remote I/O station	
Number of occupied stations	1 station 32 points assignment (use 16 points)	
I/O adapter power supply	Voltage	20.4 to 26.4V DC (ripple ratio: within 5%)
	Current	50mA or lower (when all points are ON at 24V DC)
Noise durability	DC type noise voltage 500 Vp-p, noise width 1 μs, noise carrier frequency 25 to 60Hz (noise simulator condition)	
Dielectric withstand voltage	500V AC for 1 minute between all DC external terminals and ground	
Insulation resistance	10 MΩ or higher, measured with a 500V DC insulation resistance tester	
Weight	0.03kg	
External wiring system	44-pin, 2-row, 2mm-pitch pin header	
External dimensions [mm (in.)]	53(W) × 22(H) × 31.5(D) (2.09 × 0.89 × 1.24)	

#### External connection

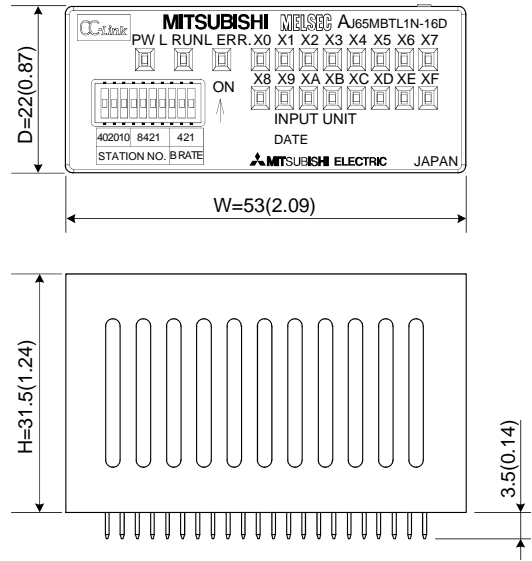


# [External Dimensions]

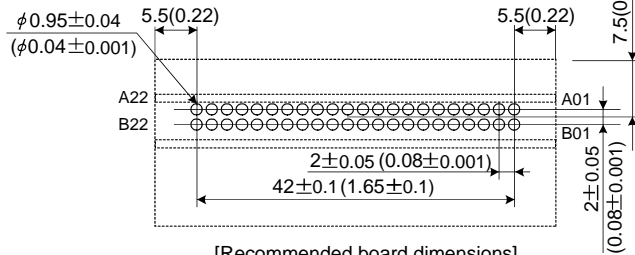
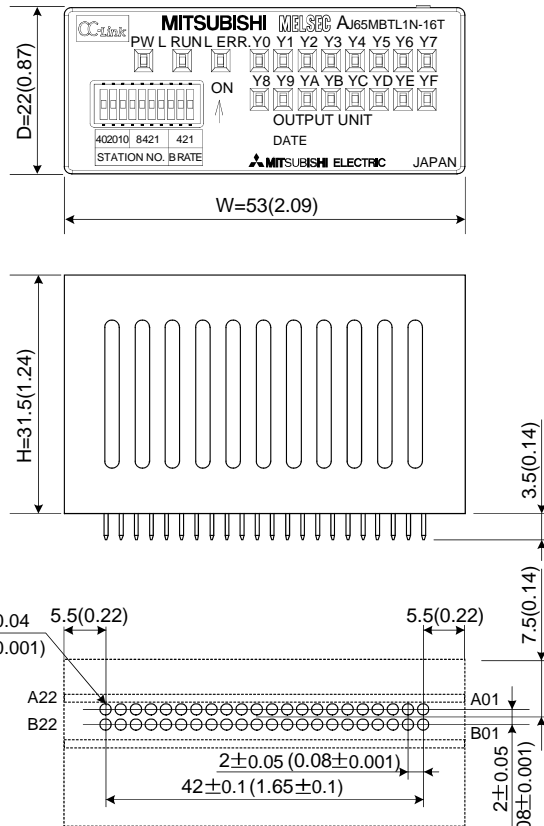
(1) AJ65MBTL1N-16DT



(2) AJ65MBTL1N-16D



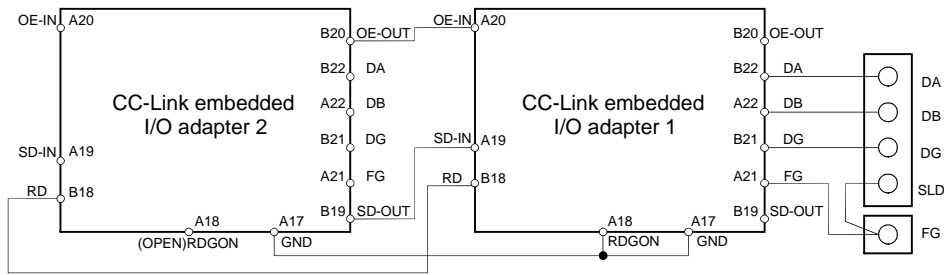
(3) AJ65MBTL1N-16T



[Recommended board dimensions]  
(top view)

Unit: mm(inch)

## [Cascade Connection Method]



\* : Place the I/O adapters at least 5mm (0.2in.) away from each other.

## [Manual]

Manual name	Manual supply status	IB/SH number	Model code
CC-Link Embedded I/O Adapter User's Manual	Sold separately	SH-080324E	13JR59

## [Precautions for T-Branch System]

The following table shows the CC-Link master and local modules applicable to T-branch system.

Master/Local Module Type	Hardware Version
AJ61QBT11	"D" or later
AJ61BT11	"D" or later
A1SJ61QBT11	"E" or later
A1SJ61BT11	"E" or later

\* : There are no restrictions on the QJ61BT11.



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Brazil	MELCO-TEC Rep. Com.e Assessoria Tecnica Ltda. Av. Rio Branco, 123-15 ,and S/1507, Rio de Janeiro, RJ CEP 20040-005, Brazil	Tel : +55-21-221-8343 Fax : +55-21-221-9388
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Singapore	Mitsubishi Electric Asia Pte, Ltd. 307 ALEXANDRA ROAD #05-01/02, MITSUBISHI ELECTRIC BUILDING SINGAPORE 159943	Tel : +65-473-2480 Fax : +65-476-7439
Thailand	F. A. Tech Co.,Ltd. 898/28,29,30 S.V.CITY BUILDING,OFFICE TOWER 2,FLOOR 17-18 RAMA 3 ROAD,BANGKONGPANG,YANNAWA,BANGKOK 10120	Tel : +66-2-682-6522 Fax : +66-2-682-6020
Indonesia	P.T. Autoteknindo SUMBER MAKMUR JL. MUARA KARANG SELATAN BLOK A UTARA NO.1 KAV. NO.11 KAWASAN INDUSTRI/ PERGUDANGAN JAKARTA - UTARA 14440	Tel : +62-21-663-0833 Fax : +62-21-663-0832
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