■General

The Unified Controller nv series, a line of Toshiba's industrial controllers, takes over the traits of the existing lineup, "Integrated Controller V series." The nv series is equipped with an I/O system called "TC-net I/O," which is based on the industry's first 100-Mbps double loop network. As a result, the high speed performance required in the electric control field as well as the online maintainability required in the instrumentation field can be simultaneously achieved by the same hardware. Thus, the nv series provides the unified surveillance/control system featuring the high speed performance, reliability and economic efficiency not just in the instrumentation field but also in the electric control and electric power fields.

The TC-net I/O, a high speed serial I/O system, is designed to connect modules for outputting/inputting analog values such as temperature, pressure and flow rate as well as digital values such as ON/OFF signals of the power supply and switches to controllers via a high speed serial circuit. The TC-net I/O is used to configure a system for sending and receiving I/O data from each module to and from controllers.

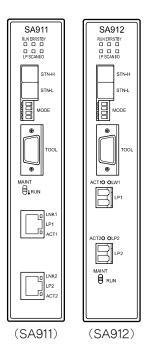


Fig. 1 TC net I/O module

■Features

The TC-net I/O system has the following features.

(1) The industry's first high speed serial I/O system It is the industry's first field I/O system that enables a transmission speed of 100 Mbps and the double loop configuration. The system can collect high speed I/O data, and the minimum preset time for collection cycle is 100 μs. In the standard setup, the transmission path has a double loop configuration (for sending and receiving lines). Furthermore, the double-loop network may be provided as a duplexed configuration.

(2)High reliability and maintainability

The system offers a high reliability while ensuring "instrumentation online maintenance (hot plug, etc.)" and "high speed electric control" at the same time. The system uses a double loop transmission network that includes sending and receiving lines. Furthermore, the network may be provided as a duplexed configuration. Thanks to the quadruplex lines, the system has a mechanism to maintain the transmission even when the lines are disconnected at up to three points.

A SAFETY INSTRUCTIONS

- This product was designed and manufactured for use in general manufacturing equipment systems (for process control, production line control, etc.). It was not designed or manufactured for use with equipment employed under circumstances which pose a direct threat to human life, or with systems consisting of such equipment. Before using this product for such purposes, please consult a sales representative.
- This product was manufactured under rigorous quality control. However, when employing this product with facilities which may pose a threat to human life, or with facilities for which serious consequences may be foreseen, please tale special care to ensure the construction of a system which is safe with respect to system operation, maintenance and management.
- This product requires electrical and mechanical installation. Please consult your vendor, a specialized service provider, or a Toshiba sales representative regarding installation.
 Improper installation may result in electric shocks or fire.
- Please read all related documentation prior to use of this product, and use product only as described in the documentation.

■System Configuration

TC-net I/O system can be used in single system configuration or in duplex system configuration.

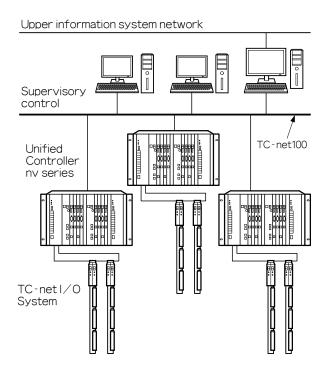


Fig. 2 System configuration example (optical transmission line)

•Single system configuration

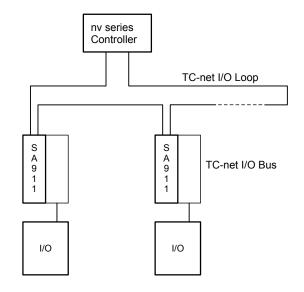


Fig. 3 Single configuration

• Duplex system configuration

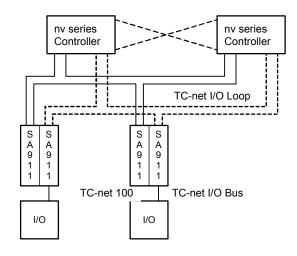


Fig. 4 Duplex configuration

■Specifications •Modules

Table 1 TC-net I/O Module list

Category	Pet name	Product code	Product outline
	SA911	HSA911**S	TC-net I/O adaptor (Electric)
	SA912	HSA912**S	TC-net I/O adaptor (Optical)
	SA931	HSA931**S	TC-net I/O adaptor (for LP918B)
	SA941	HSA941**S	TC-net I/O adaptor (Electric, for Al959B/AO969)
[SA942	HSA942**S	TC-net I/O adaptor (Optical, for AI959B/AO969B)
TC-net I/O module	DI934	HDI934**S	24VDC 32-point digital input
	DI934I	HDI934I*S	24VDC 32-point digital input with digital filter: low input current model
	DI934S	HDI934S*S	24VDC 32-point digital input with strobe
<u>[</u>	DI934T	HDI934T*S	DC12/24V 8mA 32-point digital input
1	DI935	HDI935**S	24VDC 64-point digital input
<u> </u>	DI936	HDI936**S	Insulated 12-24VDC 16-point digital input
l —	DI937	HDI937**S	24VDC 16-point contact input module
<u> </u>	DI944	HDI944**S	48VDC 32-point digital input
<u> </u>	DI947	HDI947**S	DC48V 4mA 16-point contact input module
l —	N956	HIN956**S	Insulated 100/120VAC/DC 16-point digital input
l —	N966	HIN966**S	Insulated 200/240VAC 16-point digital input
<u> </u>	DO934	HDO934**S	24VDC-100mA 32-point digital output
<u> </u>	DO935	HDO935**S	24VDC-50mA 64-point digital output
I —	DO936	HDO936**S	DC24V-2AFET output
<u> </u>	RO966	HRO966**S	Insulated contact (24VDC/240VAC-2A)16-point output
l —	AC963	HAC963**S	100/240VAC-2A 16-point triac output
l —	AI914	HAI914**S	Insulated 0-5V 4-point analog input
	AI918	HAI918**S	Insulated 0-5V 14bit 10ms 8-point analog input Insulated 0-20mA 14bit 10ms 8-point analog input with distributor
	AI918D AI918F	HAI918D*S HAI918F*S	
<u> </u>	41916F 41919	HAI919**S	Insulated 0-5V 16bit 10ms 8-point analog input Non-insulated 0-5V 16-point analog input
	Al928	HAI928**S	Insulated 0-20mA 8-point input 0.5ms 14bit
l —	41929D	HAI929D*S	Non-insulated 4-20mA 16point analog input (with distributor)
<u> </u>	41959B	HAI959B*S	analog input module: used in combination with signal conditioner
	AI969	HAI969**S	Insulated mV/V 16-point analog input with gain adjustment function
	TC919	HTC919**S	Insulated thermocouple 16-point input
	RT918	HRT918**S	Insulated RTD 8-point input
<u> </u>	RT918C	HRT918C*S	Non-insulated RTD 8-point input
<u> </u>	AO928	HAO928**S	Insulated 0-20mA 8-point analog output
<i> </i>	AO928F	HAO928F*S	Insulated 0-20mA 8-point analog output (16bit)
Į –	AO929	HAO929**S	Non-insulated 0-20mA 16-point analog output
Į –	AO969B	HAO969B*S	Analog output module: used in combination with signal conditioner
F	PI918	HPI918**S	1-phrase 8-point pulse input module (Up Count,12-24V)
[F	PI924	HPI924**S	2-phrase 4-point pulse input module (Up/Down Count,12-24V)
F	PI948	HPI948**S	Voltage instrumentation input: 8-point pulse input module
TC-net I/O compound L	LP918B	HLP918B*S	Loop module Al:12ch, MV:8ch, DI:8ch, DO:8ch
module			
TC-net I/O special F module	FL911	HFL911**S	FL-net module
	CISO5	-	mV voltage input isolator: DC 5-200 mV
_	CISO6	-	Current input isolator: 1-5 VDC
	CISO7	_	Voltage input isolator: DC 4-20 mA
	CDIS7	_	2-wire transmitter current input isolator: DC 4-20 mA
	CTC**	-	Thermocouple temperature input isolator: JIS thermocouple input
	CRTD*	-	RTD temperature input isolator
_	CCTI1	_	CT input isolator; AC signal CCTI1-11: AC 0~1 A, CCTI1-21: AC 0-5 A
	CPTI1	-	PT input isolator, AC signal CPTI1-11: 0-100 VAC, CPTI1-21: 0-110
			VAC, CPTI1-31: 0-150 VAC, CPTI1-41: 0-250 VAC
	CISO8	-	Current output isolator: DC 4-20 mA
	BU901	HBU901**S	For SA911
E	BU902A	HBU902A*S	With terminal block for I/O (Common bar supported)
E	BU903A	HBU903A*S	With terminal block for I/O(250Ω terminated installation supported,
			Short bar supported)
E	BU904A	HBU904A*S	With terminal block for I/O (dedicated to thermocouple input,
L			Common bar supported)
	BU905	HBU905**S	Connector type base module

Category	Pet name	Product code	Product outline
Base unit	BU906A	HBU906A*S	With terminal block for power DI/O (Common bar supported)
	BU928F	HBU928F*S	Base unit for LP918 8-slot type
	BU929F	HBU929F*S	General purpose base unit 8-slot type
	UTBA7	-	Analog input terminal block unit
	UTBA8	-	Analog output terminal block unit
Option	CN9C3	HCN9C3**S	Connection cable(3cm, I/O)
	CN9C9	HCN9C9**S	Connection cable(9cm)
	CN9R5	HCN9R5**S	Cross cable (50cm)
	CN910S	HCN910S*S	Extension cable (1m)
	CN920S	HCN920S*S	extension cable (2m)
	TR901	HTR901**S	Terminating connector
	TR928	HTR928**S	250Ω current/Power conversion module x 8 (with switch)
	TR929	HTR929**S	250Ω current/Power conversion module x 16 (with switch)
	EX911	HEX911**S	I/O check adaptor (for other than power)
	EX912	HEX912**S	I/O check adaptor (for power)
	BB921	HBB921**S	For Common bar BU902A/BU904A/BU906A
	BB931	HBB931**S	For Short bar BU903A
	UMAS3C	-	Marshaling unit for VLCPX1/2
	UMAS4C	-	Marshaling unit for VLCPX4

•Common specifications

Table 2 Common specifications

Item	Specification
Operating	0 to 55°C
temperature	
Storage temperature	-40 to 70°C
Humidity	0 to 95%RH (no condensation)
Vibration (when not	5 ≤ f < 9Hz: Half amplitude 3.1mm
energized)	9 ≤ f < 150Hz: Constant acceleration
	9.8m/s ²
Shock (when not	147m/s ² (3-axis direction)
energized)	
Grounding	D-class grounding with ground
	resistance of 100Ω or less (prescribed
	by the Japanese Ministerial
	Ordinance)
Atmosphere	No corrosive gas
Dust density	0.3mg/m ³ or less (no conductive dust)
Withstand voltage	500VAC, 1 minute
(TC-net I/O loop part)	

•SA911 and BU901 specifications

Table 3 SA911/BU901 specifications

Category	Item	Specification
Performance	Fault detection	Watchdog timer error
specification		Memory ECC error (common
		memory)
		Bus timeout error, etc.
TC-net I/O	System	Electric
loop	Topology	Loop
specification	Transmission	100Mbps
	speed	
	Redundancy	Redundant loop
	Number of	Up to 254 nodes
	nodes	
	connected	
	Number of I/O	Up to 32 adaptors
	adaptors	
	connected	
	Transmission cable	Category 5 UTP with shield
	Connection	RJ-45
	connector	
	Maximum cable	Up to 10m
	length	
	Total extension	Up to 100m
	Communication	Scan transmission/message
	service	transmission
	Scan cycle	High-speed scan: 100µs or
		more
		Middle-speed scan: 1ms or
	Casa	more
	Scan	64kW/system (1024
	transmission	blocks/system) Maximum transmission
	capacity	
		capacity 32kW/node

Category	Item	Specification
TC-net I/O	System	Electric (non-insulated)
Bus	Topology	Bus
specification	Transmission	10Mbps
	speed	
	Redundancy	Redundant I/O bus
	Interface	RS-485
	Number of I/O	Up to 16 modules
	modules	
	connected	
	Transmission	Dedicated cable
	cable	
	Total extension	Up to 5m (including the base
		unit length)
	Communication	Scan transmission/message
	service	transmission
	Scan cycle	High-speed scan: 100µs or
		more
	Scan	64kW/ system
	transmission	Maximum transmission
Mandada	capacity	capacity 32kW/ slot
Module	Cooling method	Natural air cooling SA911: 35 × 185 × 94.5mm
specification	Dimensions	
	Maight	BU901: 72 × 200 × 30mm
	Weight	SA911: 250g or less
	Dower ownshi	BU901: 220g or less 20.4VDC to 26.4VDC
	Power supply	(24VDC + 10% - 15%)
		Supplied from BU901 power
		terminal block
	Current	24VDC-400mA or less
	consumption	(SA911/1 unit)
Accessories	Terminating	For I/O bus (TR901), two
7.0003301163	connector	units attached to BU901
	00.11100101	arms attached to Dood I

•SA912 and BU901 specifications

Table 4 SA912/BU901 specifications

Category	Item	Specification
Performance specification	Fault detection	Watchdog timer error Memory ECC error (common memory) Bus timeout error, etc.
TC-net I/O	System	Optical
loop	Topology	Loop
specification	Transmission speed	100Mbps
	Redundancy	Redundant loop
	Number of nodes connected	Up to 254 nodes
	Number of I/O adaptors connected	Up to 32 adaptors
	Transmission	Optical fiber (core
	cable	diameter/clad 50/125, 62.5/125)
	Connection connector	Optical module
	Maximum cable length	2km
	Total extension	4km
	Communication service	Scan transmission/message transmission
	Scan cycle	High-speed scan: 100µs or more
		Middle-speed scan: 1ms or more
	Scan	64kW/system (1024
	transmission	blocks/system)
	capacity	Maximum transmission capacity 32kW/node

Category	Item	Specification
TC-net I/O	System	Electric (non-insulated)
bus	Topology	Bus
specification	Transmission	10Mbps
	speed	
	Redundancy	Redundant I/O bus
	Interface	RS-485
	Number of I/O	Up to 16 modules
	modules	
	connected	
	Transmission	Dedicated cable
	cable	
	Total extension	Up to 5m (including the base
		unit length)
	Communication	Scan transmission/message
	service	transmission
	Scan cycle	High-speed scan: 100µs or
		more
	Scan	64kW/ system
	transmission	Maximum transmission
	capacity	capacity 32kW/ slot
Module	Cooling method	Natural air cooling
specification	Dimensions	SA912: 35 × 185 × 94.5mm
		BU901: 72 × 200 × 30mm
	Weight	SA912: 250g or less
		BU901: 220g or less
	Power supply	20.4VDC to 26.4VDC
		(24VDC + 10% - 15%)
		Supplied from BU901 power
		terminal block
	Current	24VDC-400mA or less
	consumption	(SA912/1 unit)
Accessories	Terminating	For I/O bus (TR901), two
	connector	units attached to BU901

•24VDC system power supply specifications

Table 5 System power supply specifications

Category	Specification	Remark
Power voltage	20.4V to 26.4V (24V + 10% - 15%)	
range		
Ripple voltage	24V 5% or less (p-p)	
Protection	Shall have overcurrent protection and	
circuit	overvoltage protection circuits.	
	Overvoltage protection should be	
	detected in the range of 27V to 33V.	

•SA931 specifications

Table 6 SA931 specifications

Category	Item	Specification
Performance	Fault detection	Watchdog timer error
specification		Memory ECC error
		(common memory)
		Bus timeout error, etc.
TC-net I/O	System	Electric
loop	Topology	Loop
specification	Transmission speed	100Mbps
	Redundancy	Redundant loop
	Number of nodes	Up to 254 nodes
	connected Number of I/O	Un to 22 adaptors
		Up to 32 adaptors
	adaptors connected Transmission cable	Catagory E LITD with ahiald
		Category 5 UTP with shield RJ-45
	Connection connector	
	Maximum cable length	Up to 10m
	Total extension	Up to 100m
	Communication	Scan
	service	transmission/message transmission
	Scan cycle	High-speed scan: 100µs or more
		Middle-speed scan: 1ms or more
	Scan transmission	64kW/system (1024
	capacity	blocks/system)
		Maximum transmission
		capacity 32kW/node

Category	Item	Specification
TC-net I/O	System	Electric (non-insulated)
bus	Topology	Bus
specification	Transmission speed	10Mbps
	Redundancy	Redundant I/O bus
	Interface	RS-485
	Number of I/O	SA911:Up to16 I/O modules
	modules connected	SA931:Up to 8 pairs of
		redundant LP918B
		or single 8 units
	Transmission cable	BU928F/BU929F mother board
		and extension I/O cable
	Total extension	Up to 3m
	Communication	Scan transmission/message
	service	transmission
	Scan cycle	High-speed scan: 100µs or
		more
	Scan transmission	64kW/system
	capacity	Maximum transmission
		capacity 32kW/slot
Module	Cooling method	Natural air cooling
specification	Dimensions	35×185×94.5mm
	Weight	250g or less
	Power supply	20.4VDC to 26.4VDC
		(24VDC+10%-15%)
		Supplied from
		BU928F/BU929F power
		terminal block
	Current	24VDC-400mA or less
	consumption	(SA911/1 unit)

•SA941/BU901 specifications

Table 7 SA941/BU901 specifications

Category	Item	Specification
Performance specification	Fault detection	Watchdog timer error Memory ECC error (common memory) Bus timeout error, etc.
TC-net I/O loop specification	System Topology Transmission speed Redundancy Number of nodes connected Number of I/O	Electric Loop 100Mbps Redundant loop Up to 254 nodes Up to 32 adaptors
	adaptors connected Transmission cable Connection connector Maximum cable length Total extension	Category 5 UTP with shield RJ-45 Up to 10m
	Communication service Scan cycle	Scan transmission/message transmission High-speed scan: 100µs or more Middle-speed scan: 1ms or more
	Scan transmission capacity	64kW/system (1024 blocks/system) Maximum transmission capacity 32kW/node

Category	Item		Specification
TC-net I/O	System		Electric (non-insulated)
bus	Topology		Bus
specification	Transmission	n speed	10Mbps
TC-net I/O	Redundancy	'	Redundant I/O bus
bus	Interface		RS-485
specification	Number of I/	0	SA941 : Up to 8 (total unit
	modules con	nected	number of UTBA7 and UTBA8)
	Transmission	n cable	From BU90 to BTBA7, BTBA8
			Between UTBAn and UTBAn
	Total extensi	on	Up to 5m
	Communicat	ion	Scan transmission/message
	service		transmission
	Scan cycle		High-speed scan: 100µs or
	•		more
	Scan transmission		64kW/system
	capacity		Maximum transmission
			capacity 32kW/slot
Module	Cooling method		Natural air cooling
specification	Dimensions	SA941	35×185×95mm
		BU901	72×200×30mm
	Weight	SA941	250g or less
	BU901 Power supply Current		220g or less
			20.4VDC to 26.4VDC
			(24VDC+10%-15%)
			Supplied from BU901F
			power terminal block
			24VDC-400mA or less
	consumption	l	(SA941/1 unit)

•I/O base unit specifications

Table 8 I/O base unit standard

Itom	I/O base unit model (Note1)				
Item	BU902A	BU903A	BU904A	BU905	BU906A
Usage	For general I/O (for 32-point or less)	For analog input/output (for options)	For analog input	For digital input/output (for 64-point)	For digital power (large current, high voltage) input/output
Applicable I/O	Di934, Di934I, Di934T, Di934S, Di936, Di937, Di944, Di947, DO934, Ai928, Ai929D, Ai969, RT918, RT918C, AO928, AO928F, AO929, Pi918, Pi924, Pi948 (Note 3)	Al914, Al918, Al918D, Al918F, Al919, Al969, TR928, TR929 (Note 3)	TC919 (Note 3)	DI934S, DI934T, DI935, DO935 Less than 64-point I/O module (Note 2) (Note 3)	IN956, IN966, AC963, DO936, RO966
External line connection terminal	M3.5 screw terminal block	M3.5 screw terminal block	M3.5 screw terminal block	Connector (by 16-point)	M3.5 screw terminal block
I/O connection connector	DIN 64pin	DIN 64pin	DIN 64pin	DIN 64pin DIN 50pin	DIN (TYPE E) 48pin
Option connector	None	Terminating resistor connector (DIN 32pin)	None	None	None
Common bar /short bar	BB921 applicable	BB931 applicable	BB921 applicable	None	BB921 applicable
Withstand voltage (alone)	1500VAC, 1 minute Between all external lines and ground (However, the module has 500VAC.)	1500VAC, 1 minute Between all external lines and ground (However, the module has 500VAC.)	1500VAC, 1 minute Between all external lines and ground (However, the module has 500VAC.)	500VAC, 1 minute Between all external lines and ground	1500VAC, 1 minute (1)Between all external lines and ground (2)Between external line terminals
Insulating resistance (alone)	10MΩ or more (500VDC megger)	10MΩ or more (500VDC megger)	10MΩ or more (500VDC megger)	10MΩ or more (500VDC megger)	10MΩ or more (500VDC megger)
Outside dimensions (mm) (without protrusions)	72W×200H×82D	72W×200H×82D	72W×200H×82D	72W×200H×30D	72W×200H×82D
Weight	450g or less	450g or less	450g or less	250g or less	500g or less
Accessory	Connecting cable (CN9C3, 3cm) x 1	Connecting cable (CN9C3, 3cm) x 1	Connecting cable (CN9C3, 3cm) x 1 Cold junction compensation terminal (JC911) 1 unit	Connecting cable (CN9C3, 3cm) x 1	Connecting cable (CN9C3, 3cm) x 1

⁽Note1) Modules with a suffix "A" to specify the base unit type are with common bar or the short bar. The common bar or the short bar cannot be added to the modules of the base unit type without the suffix "A."

⁽Note2) This indicates modules in "Applicable I/O" column for BU902A above.

⁽Note3) These I/O modules can be mounted on the I/O base unit, BU929F. Digital power modules for BU906A cannot be mounted on BU929F.

Table 9 BU928F specifications

Item		Specifi	cation	
Pet name	BU928F			
Name	Loop ba	Loop base unit		
Applicable TC-net I/O adaptor	SA931			
Applicable module	LP918E	3		
Number of available	SA931 Up to 2 units			
units	LP918B Single: Up to 4 units		• .	
			Redundant: Up to 8 units (4 pairs)	
Unit expansion	Up to 1 unit can be added with the TC-net I/O bus cable (3Y8C1576G001/3Y8C1577G001).			
External terminal block connection connector	CN 1, 3, 5, 7: Second half of the input/output signal (AI7 to AI12, MV5 to MV8,DI5 to DI8, DO5 to DO8) CN 2, 4, 6, 8: First half of the input/output signal (AI1 to AI6, MV1 to MV4,DI1 to DI4, DO1 to DO4)		MV8,DI5 to DI8,	
Power supply terminal block	TB1 For system 24V power supply TB2 For MV external 24V power			
Insulating resistance	supply 10MΩ or more (between all input/output lines and system, between all input/output lines and FG, between system and FG)		input/output lines	
Withstand voltage	500VAC, 1 minute (between all input/output lines and system, between all input/output lines and FG, between system and FG)			
Surface treatment	Trivalent chromium plating			
Applicable cable	Cable for UMASnC (3Y8C1573G001), Cable for VTBUX85C (3Y8C1574G001)			
Outside dimensions (mm)		289H×140D		
Weight	6kg or l	ess		

Table 10 BU929F specifications

Item	Specification		
Pet name	BU929F		
Name	I/O base	e unit	
Applicable TC-net I/O adaptor	SA911		
Applicable module	-	DO934, AI96 PI948, AO92	·
Number of available	SA911		Up to 2 units
units	I/O mod	lule	Up to 8 units
Unit expansion	Up to 1 unit can be added with the TC-net I/O bus cable (3Y8C1576G001/3Y8C1577G001).		Э
External terminal block connection connector	■CN1A, 2A, 3A, 4A, 5A, 6A, 7A, 8A Analog system: CH1 to CH16 Digital system: CH1 to CH32 ■CN1B, 2B, 3B, 4B, 5B, 6B, 7B, 8B* Analog system: Not used Digital system: CH33 to CH64 * Not used in TOSDIC DPCS. ■TB11 to 18 Dedicated CJC for TC919 (for external connection) TB1 For system 24V power supply		
Power supply terminal	TB1	For system	24V power supply
block	TB2	supply (For TOSDI be used bed supplied fro terminal blo	m the external
		input/output	when an analog module requiring power supply is
Insulating resistance	10MΩ or more (between all input/output lines and system, between all input/output lines and FG, between system and FG)		d system, tput lines and FG,
Withstand voltage	500VAC, 1 minute (between all input/output lines and system, between all input/output lines and FG, between system and FG)		
Surface treatment	Trivalent chromium plating		
Applicable cable	Generic straight cable for VTBUX3n (3Y8C1566G001) VTBUX32 to VPINX12 dedicated cable (3Y8C1567G001) VTBUX32 to VAOPX1 dedicated cable (3Y8C1569G001) Cable for VTBUX34 (3Y8C1568G001)		
Outside dimensions (mm)		289H×140D	,
Weight	6kg or le	ess	

Table 11 UTBA7 unit specifications

		T
It	em	Specification
Pet name		UTBA7
Number of input points		16-point
Applicable conditione		CISO5 (mV voltage input isolator) CISO6 (current input isolator) CISO7 (voltage input isolator) CDIS7 (2-wire transmitter current input isolator) CTC** (thermocouple temperature input isolator) CRTD* (RTD temperature input isolator) CCTI1 (CT input isolator) CPTI1 (PT input isolator)
Number of conditione		Up to 16 units of above-mentioned signal conditioners can be used in combination.
Applicable analog input module		AI959B
Number of analog input module		1 unit in the signal configuration
Installation style		Vertically mounted on a DIN rail, or fixed with screws
External terminal	Terminal block	Screw-supporting type terminal block (M3.5 screws, 32 ports) x 2 units
block	Size of applicable power supply	2 mm2 or smaller, up to 2 pieces

Item		Specification
External terminal block	Applicable crimp terminal	Minimum Ø3.7
	Terminal screw tightening torque	0.833 to 1.127N·m
TC-net I/O bus	Terminal block	Connector terminal block (M3.5 screws, 8 ports)
terminal block	Terminal screw tightening torque	0.83 to 1.13 N·m
Power supply	Terminal block	Connector terminal block (M3.5 screws, 4 ports)
terminal block	Terminal screw tightening torque	0.83 to 1.13 N·m
Applicable wire size		2mm ² or less
Insulating resistance		100MΩ or more 500VDC megger (FG - internal circuit - external input signal)
Withstand voltage		500VAC 1 minute(FG - internal circuit - external input signal)
Outside di (mm)	mensions	110W×493H×150D (without protrusions)
Weight		1500g or less

Table 12 UTBA8 unit specifications

lt	em	Specification
Pet name		UTBA8
Number of input points		16-point
Applicable conditione		CISO8 (current output isolator)
Number of conditione		Up to 16 units of above-mentioned signal conditioners can be used in combination.
Applicable input modu		AO969B
Number of analog input module		1 unit in the signal configuration
Installation	style	Vertically mounted on a DIN rail, or fixed with screws
External terminal	Terminal block	Screw-supporting type terminal block (M3.5 screws, 32 ports) x 2 units
block	Size of applicable power supply	2 mm ² or smaller, up to 2 pieces
	Applicable crimp terminal	Minimum Ø3.7 Minimum Ø3.7 S

Ite	em	Specification
External terminal block	Terminal screw tightening torque	0.83 to 1.13 N·m
TC-net I/O bus	Terminal block	Connector terminal block (M3.5 screws, 8 ports)
terminal block	Terminal screw tightening torque	0.83 to 1.13 N·m
Power supply	Terminal block	Connector terminal block (M3.5 screws, 4 ports)
terminal block	Terminal screw tightening torque	0.83 to 1.13 N·m
Applicable wire size		2mm ² or less
Insulating resistance		100MΩ or more 500VDC megger (FG - internal circuit - external input signal)
Withstand voltage		500VAC 1 minute (FG - internal circuit - external input signal)
Outside dir (mm)	mensions	110W×493H×150D (without protrusions)
Weight		1500g or less

•I/O Module Specifications

Table 13 DI934/DI944 specifications

Item		Speci	fication	
Pet name		DI934	DI944	
Input type		Shared with sink/source		
Number of inp	ut points	32-point		
Insulation type)	Photo-coupler in	sulation	
Rated input vo	ltage	24VDC + 10%/ 48VDC + 10%/ -		
(external supp	ly)	- 15%	15%	
Rated input current		5.2mA (for external power supply of 24VDC)	2.6mA (for external power supply of 48VDC)	
Digital filter		Common setting module 0.25, 0.5, 1, 2, 3, 40, 50, 75, 100,	, 4, 5, 10, 20 30,	
Digital hold		Common setting module 0.25, 0.5, 1, 2, 3 40, 50, 75, 100,	, 4, 5, 10, 20, 30,	
Operating voltage	Minimum ON voltage	16.8V	33.6V	
vollage	Maximum OFF voltage	6.0V	12V	
Number of commons		2 (insulation between systems)		
Common Number of input points per common Common polarity		16-point + Powe detection input (selectable)/com	·	
		Nonpolar		
Input signal display		For each point: L illuminating when		
Module state display		RUN display (green), ALM display (red)		
Fault diagnosi		Based on transmission state		
Applicable bas		BU902A, BU905		
Current consu	mption	Internal: 24VDC-50mA or less		
Internal heat g		Approx. 5W(exterpoints ON)		
Insulating resis	stance		500VDC megger)	
Withstand voltage		and internal circu	n external circuit	
Outside dimen	sions (mm)	35W × 185H × 9	5D	
Weight	` '	200g or less		
weight				

Table 14 DI934I specifications

Item		Specification
Pet name		DI934I
Input type		Shared with sink/source
Number of inp	ut points	32-point
Insulation type	!	Photo-coupler insulation
Rated input vo	ltage	24VDC +10%/-15% (supplied from
(external supp	ly)	VTBUX3* via the dedicated cable)
		(Can be supplied from BU929F
		TB2)
Rated input cu	ırrent	4mA (for external power supply of
		24VDC)
Digital filter		Common setting in filter time
		module
		0.25,0.5,1,2,3,4,5,10,20,30,40,50,
D: 11 11		75,100,200,300msec
Digital hold		Common setting in hold time
		module
		0.25,0.5,1,2,3,4,5,10,20,30,40,50,
Operating	Minimum	75,100,200,300msec 16.8V
voltage	ON	10.67
voltage	voltage	
	maximum	6.0V
	OFF	0.0 V
	voltage	
Common	Number	2 (insulation between systems)
configuration	of	_ (,
	commons	
	Number	16-point + Power interruption
	of input	detection input
	points per	(selectable)/common
	common	
	Common	Nonpolar
	polarity	
Input signal di	splay	For each point: LED display,
<u> </u>		illuminating when ON, logic side
Module state of	display	RUN display (green), ALM display
		(red)
Fault diagnosis		External power supply error,
Applicable base unit		transmission error
Applicable base unit Current consumption		BU929F Internal: 24VDC-70mA or less
Internal heat generated		Approx. 5W(external 24VDC all
initernal neat generated		points ON)
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		1500VAC, 1 minute (between
vviuistanu voitage		systems, between external circuit
		and internal circuit)
		500VAC, 1 minute when installed
		to BU928F
Outside dimer	sions (mm)	35W×185H×95D
Weight		200g or less
. r.s.g		•

Table 15 DI934S specifications

Pet name DI934S
Input class DC input
Input type Source input (shared with sink/source in DI mode)
Sink/source in DI mode
Systems), strobe: 2-point (occupied data: 2W) Insulation type
Systems), strobe: 2-point (occupied data: 2W) Insulation type
Photo-coupler insulation (data 16-point – strobe 1-point unit), 2 systems
Rated input voltage (external power supply 24V) Input voltage variable range (External 24V power supply) Rated input current Data 32-point Strobe 2-point Data 32-point Approx. 5.2mA (for 24VDC) Strobe 2-point Input impedance Strobe 2-point Strobe 2-point Strobe 2-point ON 3.3kΩ (for 24VDC) 1.2kΩ(for 24VDC) Input on minimum operating Voltage Maximum OFF Voltage Maximum OFF Voltage 4.8V
Rated input voltage (external power supply 24V) 24VDC (+ side common) 2
(external power supply 24V) 24VDC (+ side common) Input voltage variable range (External 24V power supply) 21.6 to 26.4VDC Rated input current Data 32-point Approx. 5.2mA (for 24VDC) Strobe 2-point Approx. 10mA (for 24VDC) Input impedance 32-point 3.3kΩ (for 24VDC) Input operating voltage Minimum ON voltage 16.8V Maximum OFF voltage 4.8V
24V Input voltage variable range (External 24V power supply) 21.6 to 26.4VDC
Input voltage variable range (External 24V power supply) Rated input current Data 32-point Approx. 5.2mA (for 24VDC)
range (External 24V power supply)
(External 24V power supply) 21.6 to 26.4VDC Rated input current Data 32-point Approx. 5.2mA (for 24VDC) Strobe 2-point Approx. 10mA (for 24VDC) Input impedance Data 32-point 3.3kΩ (for 24VDC) Strobe 2-point 2.2kΩ(for 24VDC) Input operating voltage Minimum Voltage Maximum OFF voltage 4.8V
Supply Rated input current Data 32-point Approx. 5.2mA (for 24VDC)
Rated input current
current Data 32-point Approx. 5.2mA (for 24VDC) Strobe 2-point Approx. 10mA (for 24VDC) Input impedance Data 32-point 3.3kΩ (for 24VDC) Strobe 2-point 2.2kΩ(for 24VDC) Input operating voltage Minimum ON voltage Maximum OFF voltage 4.8V
Strobe 2-point Approx. 10mA (for 24VDC)
2-point Approx. 10mA (for 24VDC)
Input mpedance Data 32-point Strobe 2-point 2.2kΩ(for 24VDC)
impedance 32-point 3.3kΩ (for 24VDC) Strobe 2-point 2.2kΩ(for 24VDC) Input operating voltage Minimum ON voltage Maximum OFF voltage 4.8V
2-point 2.2kΩ(for 24VDC)
Input Minimum operating ON 16.8V voltage Maximum OFF 4.8V voltage
operating ON 16.8V voltage Maximum OFF 4.8V voltage
voltage voltage Maximum OFF 4.8V voltage
Maximum OFF 4.8V voltage
OFF 4.8V voltage
voltage
Strobe detection mode Strobe ON edge
changeover detection or strobe
OFF edge detection
16bit-1 strobe (set at
shipping),
32bit-1 strobe
(selectable)
Filter setting changeover No Yes No
Response OFF→ON 10up or 10mp or 84µs
time Tops of Torns of Jor
less less less
OFF→ON 45,12 2 122μs /
15µs or 15ms or or or
less less less

Data setup time Before Strobe edge dge	's pecifications				
strobe edge 150µs 150ms or or more 150µs 150ms or or more 150µs 150ms or or more 150µs 150ms or more 150µs o					tion
edge 150µs 150ms or or more Data hold time After After strobe edge edge 15µs or strobe edge edge 15µs or more Strobe pulse width Both of Both of ON ON or or OFF OFF pulse width width 50ms or more Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection 36P fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common Number of commons Number of input points per common Common polarity Derating condition No	Data setup time				
150µs 150ms or more					
Data hold time After After Strobe edge edge 15µs or more more			_		
Data hold time After strobe edge edge 15µs or more Strobe pulse width Both of ON or OFF pulse width width 50ms or more Module state display Module state display Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection Separation Number of configuration Number of input points per common Common polarity Derating condition After strobe strobe edge 15µs or strobe edge 15µs or more Roth of ON ON or OFF OFF pulse width width 50ms or more Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection 36P fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common commons Number of input points per common Common Polarity Derating condition			-		
strobe edge edge 15µs or more Strobe pulse width Both of ON or OFF OFF pulse width width 50ms or more Module state display Module state display Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection Soft fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common polarity Derating condition No	B				<i>/</i>
edge 15µs or more Strobe pulse width Both of ON or OFF OFF pulse width width 50ms or more Module state display Module state display Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection Soft fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common Common polarity Derating condition No	Data hold time				
Strobe pulse width Both of ON or OFF OFF pulse width Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection Soft fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common polarity Derating condition No					
Strobe pulse width Both of ON or OFF pulse width Module state display Module state display Module state display Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection Soft fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common polarity Derating condition No				-	
Strobe pulse width Both of ON or OFF pulse width 50ms or 30µs or more Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection Soft fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common Common polarity Derating condition Roth of ON or OFF pulse width 50ms or more Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM 2 (BU902A), connector type (BU905) (Data 16-point + strobe 1-point) /common					
ON or OFF pulse width 50ms or 30µs or more more Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection Soft fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common Common polarity Derating condition No	Strobo pulso v	/idth			<u> </u>
Module state display Module state display Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection Soft fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common Common polarity Derating condition No	Strobe puise w	nutri			
more width 50ms or more more more Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM External connection Sophism or more more more more more more more				-	
Width 30µs or more more Soms or more more Soms or more more Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM			_		
Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM			•		
Module state display Green LED: RUN, inputs, illuminates when strobe ON, Red LED: ALM					
illuminates when strobe ON, Red LED: ALM External connection SoP fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common polarity Derating condition Illuminates when strobe ON, Red LED: ALM (Bu905) 2 (Common + strobe 1-point) (Common + polar polarity					
External connection Solve fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common polarity Center description LED: ALM 36P fixed M3.5 screw terminal base (BU902A), connector type (BU905) 2 (Data 16-point + strobe 1-point) /common + polar Derating condition No	Module state display		Green LI	ED: RUN, in	puts,
External connection 36P fixed M3.5 screw terminal base (BU902A), connector type (BU905) Common configuration Number of input points per common Common polarity Derating condition 36P fixed M3.5 screw terminal base (BU902A), connector type (BU905) (Connector type (BU905) (Conmon + strobe 1-point) (Common + polar polarity)			illuminat	es when stro	be ON, Red
base (BU902A), connector type (BU905) Common configuration Number of commons Number of input points per common Common Common polarity Derating condition Number of input points per common per common per common points pe			LED: AL	M	
Common configuration Number of commons Number of input points per common Common polarity (BU905) 2 (Data 16-point + strobe 1-point) /common + polar	External connection		36P fixed	d M3.5 screv	v terminal
Common configuration Number of commons Number of input points per common Common polarity Number of input points per common Common polarity No 2 (Data 16-point + strobe 1-point) /common + polar			base (Bl	J902A), coni	nector type
configuration			(BU905)		
Number of input points per common Common polarity Number of (Data 16-point + strobe 1-point) /common + polar			2		
input points per common Common Common polarity Derating condition Input points /common + polar	configuration				
per common Common + polar polarity Derating condition No					be 1-point)
common Common + polar polarity Derating condition No			/commoi	า	
Common + polar polarity Derating condition No		l'			
polarity Derating condition No			1		
Derating condition No			+ polar		
	Derating cond		No		
1. 51151 Supply Voltage 2-100 1 10/0, -10/0				+ 10% -15%	
(internal 24V)			24400	1070, -1070	
Current consumption 24VDC-80mA or less			24VDC-8	30mA or less	<u> </u>
(internal 24V)	-				•
,	Insulating resistance		10MΩ or	more (500V	(DC megger)
	Withstand voltage				
systems, between external circuit	The state of the s				
and internal circuit)					
Outside dimensions (mm) 35W × 185H × 95D (mm)	Outside dimen	sions (mm)			mm)
Weight 210g or less		, , ,			,
	Installation				tal installation
motanation voltical and nonzontal installation				l line is dowr	

Table 16 DI934T specifications

Item		Specification
Pet name		DI934T
Number of inp	ut noints	32-point
Insulation type		Photo-coupler insulation
Rated input vo		12-24VDC +10%/-15%
(external supp		
Rated input cu		7.7mA (for external power supply
		of 24VDC)
Digital filter		Common setting in filter time
		module 0.25,0.5,1,2,3,4,5,10,20,30,40,50,
		75,100,200,300msec
Digital hold		Common setting in hold time
2.9.66		module
		0.25,0.5,1,2,3,4,5,10,20,30,40,50,
		75,100,200,300msec
Operating	Minimum	9.6V (DI signal)
voltage	ON	
	voltage	
	Maximum	3.6V (DI signal)
	OFF	
C	voltage	2 (inculation between quetomo)
Common configuration	Number of	2 (insulation between systems)
Corniguration	commons	
	Number	16-point + Power interruption
	of input	detection input
	points per	(selectable)/common
	common	, ,
	Common	Nonpolar
	polarity	
Input signal display		For each point: LED display,
		illuminating when ON, logic side
Module state display		RUN display (green), ALM display
Coult diaments		(red) Based on transmission state
Fault diagnosis External connection		36p terminal fixing type M3.5 screw
External connection		terminal block (BU902A),
		connector type (BU905)
Current consumption		Internal: 24VDC-50mA or less
Internal heat generated		Approx. 7W (external 24VDC all
		points ON)
Temperature derating		Yes; Refer to temperature derating.
condition		
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		1500VAC, 1 minute (between
		systems, between external circuit
		and internal circuit) 500VAC, 1 minute when installed
		to BU905
Outside dimen	sions (mm)	35W×185H×95D
Weight	(11111)	200g or less
weight		2009 01 1033

Table 17 DI935 specifications

Item		Specification
Pet name		DI935
Input type		Shared with sink/source
Number of inp	ut points	64-point
Insulation type)	Photo-coupler insulation
Rated input (external supp		24VDC + 10%/ - 15%
Rated input cu	ırrent	4mA (for external power supply of 24VDC)
Digital filter		Common setting in filter time module 0.25, 0.5, 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 75, 100, 200, 300msec
Digital hold		Common setting in hold time module 0.25, 0.5, 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 75, 100, 200, 300msec
Operating voltage	Minimum ON voltage	16.8V
voltage	Maximum OFF voltage	6V
	Number of commons	4 (insulation between systems)
Common configuration	Number of input points per common	16-point + power interruption detection input (selectable)/common
	Common polarity	Nonpolar
Input signal dis	splay	For each point: LED display, illuminating when ON, logic side
Module state display		RUN display (green), ALM display (red)
Fault diagnosis		Based on transmission state
Applicable base unit		BU905
Current consumption		Internal: 24VDC-70mA or less
Internal heat generated		Approx. 8W
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		500VAC, 1 minute (between systems, between external circuit and internal circuit)
Outside dimensions (mm)		35W × 185H × 95D
Weight		400g or less
Installation		Vertical installation only (no horizontal installation)

Table 18 DI936 specifications

Item		Specification
Pet name		DI936
Input type		Shared with sink/source
Number of inp	ut points	16-point
Insulation type	;	Photo-coupler insulation
Rated inpu	t voltage	12 to 24VDC + 10%/ - 15%
(external supp	ly)	
Rated input cu	ırrent	9.6mA (for external power supply
		of 24VDC)
Digital filter		Common setting in filter time
		module
		0.25, 0.5, 1, 2, 3, 4, 5, 10, 20, 30, 40, 50, 75, 100, 200, 300msec
Digital hold		Common setting in hold time
Digital floid		module
		0.25, 0.5, 1, 2, 3, 4, 5, 10, 20, 30,
		40, 50, 75, 100, 200, 300msec
Operating	Minimum	9.6V
voltage	ON	
	voltage	
	Maximum	3.6V
	OFF	
_	voltage	
Common	Number	16 (insulation between channels)
configuration	of	
	commons	4 mainth a managa
	Number of input	1 point/common
	points per	
	common	
	Common	Nonpolar
	polarity	Tronpolal
Input signal di		For each point: LED display,
	. ,	illuminating when ON, logic side
Module state of	display	RUN display (green), ALM display
		(red)
Fault diagnosi		Based on transmission state
Applicable bas		BU902A
Current consu		Internal: 24VDC-40mA or less
Internal heat g	enerated	Approx. 5W (external 24VDC all
		points ON)
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		1500VAC, 1 minute (between
		external and internal circuits),
		500VAC, 1 minute when installed to BU905
		500VDC, 1 minute between
		systems
Outside dimensions (mm)		35W × 185H × 95D
Weight		200g or less
Installation		Vertical and horizontal installation
motaliation		(external line is downside)

Table 19 DI937 specifications

Iten	1	Specification
Pet name		DI937
Input type		Contact input
Number of inp	ut noints	16-point
Insulation type		Photo-coupler insulation
External powe		12 to 24VDC + 10%/ - 10% 180mA
Contact currer		9.6mA (for external power supply
Goritade danier	ı	of 24VDC)
Input impedan	ce	2.4k to 2.7kΩ
Digital filter		Common setting in filter time
		module
		0.25, 0.5, 1, 2, 3, 4, 5, 10, 20, 30,
		40, 50, 75, 100, 200, 300msec
Digital hold		Common setting in hold time
		module
		0.25, 0.5, 1, 2, 3, 4, 5, 10, 20, 30,
		40, 50, 75, 100, 200, 300msec
Minimum	voltage	10.8V
between termi	nais during	
ON		3.6V
Maximum between termi	voltage	3.60
OFF	nais during	
Common	Number	1
configuration	of	'
comiguration	commons	
	Number	16-point
	of input	To point
	points per	
	common	
	Common	Based on power supply connection
	polarity	polarity
Input signal dis	splay	For each point: LED display,
		illuminating when ON, logic side
Module state of	lisplay	RUN display (green), ALM display
		(red)
Fault diagnosis		Based on transmission state
Applicable base unit		BU902A
Current consumption		Internal: 24VDC-40mA or less
Internal heat generated		Approx. 5W
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		1500VAC, 1 minute (between
		external and internal circuits)
		500VAC, 1 minute when installed
1.6		to BU905
Internal protection		Poly-switch (external power supply
element		input part)
Outside dimensions (mm)		35W × 185H × 95D
Weight		200g or less
Installation		Vertical and horizontal installation
		(external line is downside)

Table 20 IN956 specifications

Item		Specification
Pet name		IN956
Input type		Shared with sink/source
Number of inp	ut points	16-point (each point insulated)
Insulation type		Photo-coupler insulation
Rated inpu	t voltage	100/120VAC/DC + 10%/ - 15%
(external supp	ly)	
Rated input cu	ırrent	15mA (at 100VAC) 2.3mA (at
		110VDC)
Input	Minimum	80VAC/DC
operating	ON	
voltage	voltage	
	Maximum	20VAC/DC
	OFF	
	voltage	
Input	OFF→ON	20ms or less (AC), 10ms or less
response		(DC)
time	ON→OFF	50ms or more
Common	Number of	16 (each point insulated)
configuration	commons	
	Common	Nonpolar
	polarity	
Input signal display		For each point: LED display,
		illuminating when ON, logic side
Module state display		RUN display (green), ALM display (red)
Fault diagnosi		Based on transmission state
Applicable bas	se unit	BU906A
Derating cond	ition	Number of simultaneous ON points
		is restricted (See the figure below)
Current consumption		Internal: 24VDC-50mA or less
Internal heat generated		Approx. 8W
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		1500VAC, 1 minute (between
		systems, between external circuit
		and internal circuit)
Outside dimensions (mm)		35W × 185H × 95D
Weight		400g or less
Installation		Vertical and horizontal installation

Table 21 IN966 specifications

Item		Specification
Pet name		IN966
Input class		AC input
Number of inp	ut points	16-point (each point insulation)
Insulation type)	Photo-coupler insulation
Rated input vo	ltage	200 to 240VAC
(external supp		
Input voltage v	/ariable	170 to 264VAC
range		
No. of input po		50/60Hz(47 to 63Hz)
voltage freque		40. 4 (000) (40. 5011.)
Rated input cu		10mA (200VAC, for 50Hz)
Input impedan		22kΩ (50Hz), 18kΩ (60Hz)
Input operation	Minimum ON	140VAC
voltage	voltage	
voitage	Maximum	50VAC
	OFF	30 VAC
	voltage	
Input	OFF→ON	15ms or less
response	ON→OFF	15ms or less
time		
Module state of	lisplay	Green LED: RUN, input,
		illuminating when ON, Red LED: ALM
External conne	action	36P fixed type M3.5 screw terminal
External confidence	SCHOIT	base (BU906A)
Common	Number of	16 (each point insulated)
configuration	commons	
	Number	1-point
	of input	
	points per	
	common	
Derating cond		None
Power supply voltage		24VDC+10%, -15%
(internal 24V)		24\/DC 50mA on loss
Current consumption (internal 24V)		24VDC-50mA or less
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		1500VAC, 1 minute (between
With Stand Voltage		systems, between external and
		internal circuits)
Outside dimensions (mm)		35W × 185H × 95D
Weight		230g or less
Installation		Vertical and horizontal installation
		(external line is downside)

Table 22 AC963 specifications

Item		Specification
Pet name		AC963
Output class		Triac output
Number of o	output points	16-point, 1-word output
Insulation ty	pe	Photo-coupler insulation
Rated load		100 to 240VAC (50Hz/60Hz)
Load voltag	e variable	24 to 264VAC (47 to 63Hz)
range		
Maximum Ic	ad current	2A/point
Saturation volume	roltage	1.5V or less
Leak curren	t during	1mA or less (100VAC, 50Hz), 2.4mA
OFF	J	or less (AC200V, 50Hz)
Minimum sv	vitching	100mA(24VAC), 50mA(100 to
current		240VAC)
Maximum ru	ish current	20A/20ms (1-pooint), 40A/20ms
Waxiiiiaiiiii		(1common)
Output	OFF→ON	1ms or less
response time	ON→OFF	1ms-1/2 cycle or less
Output sign	al display	Green LED: illuminating when output ON
Module stat	e display	RUN display (green), ALM display (red)
External cor	nection	36P fixed type M3.5 screw terminal
		base (BU906A)
Common co	nfiguration	2 point/common (however, 1 point
	-	each for external common wiring)
Derating co	ndition	Ambient temperature 0 to 40 °C:
		Grand total 10A or less
		Ambient temperature 40 °C to 55 °C:
		Grand total 8A or less
Power supply voltage		24VDC+10%, -15%
Current consumption		24VDC-80mA or less
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		1500VAC, 1 minute (between
		systems, between external and
24V power supply fuse		internal circuits)
		Available
Surge elimination circuit		CR snubber circuit, varistor
Outside dimensions (mm)		35W × 185H × 95D
Weight		360g or less
Installation		Vertical and horizontal installation
		(external line is downside)

Table 23 DO934 specifications

Item		Specification
Pet name		DO934
Output type		Sink output
Number of out	put points	32-point
Insulation type		Photo-coupler insulation
Rated load vol	tage	12 to 24VDC + 10%/ - 15%
Maximum load	l current	100mA/point
Operating	Output	0.4V or less
voltage	ON	
	voltage	
	Leak	0.1mA or less (at 24VDC)
	current	
	during	
_	OFF	
Response	OFF→ON	1ms or less
time	ON→OFF	1ms or less
Common	Number	2 (insulation between systems)
configuration	of	
	commons	40
	Number	16-point /common
	of output	
	points per common	
	Common	Negative
	polarity	ivegative
Output setting		Output hold/output OFF can be
transmission in		selected
Output signal display		For each point: LED display,
3		illuminating when ON, logic side
Module state of	display	RUN display (green), ALM display
		(red)
Fault diagnosis	s	Transmission state, blown fuse,
		external power supply error
External conne	ection	BU902A, BU905
Current consumption		Internal: 24VDC-60mA or less
Internal heat generated		Approx. 3W
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		1500VAC, 1 minute (between
		systems, between external circuit
		and internal circuit)
		500VAC, 1 minute when installed
Duilt in fue		to BU905
Built-in fuse Surge removal circuit		2A × 2 Diode
Outside dimensions (mm)		35W × 185H × 95D
,		
Weight		200g or less
Installation		Vertical and horizontal installation
		(external line is downside)

Table 24 DO935 specifications

Item		Specification
Pet name		DO935
Output type		sink output
Number of out	put points	64-point
Insulation type		Photo-coupler insulation
Rated load vol	tage	24VDC + 10%/ - 15%
Maximum load	l current	50mA/point
Operating	Output	0.4V or less
voltage	ON	
	voltage	
	Leak	0.1mA or less (at 24VDC)
	current	
	during OFF	
Response	OFF→ON	1ms or less
time	ON→OFF	1ms or less
Common	Number of	4 (insulation between systems)
configuration	commons	+ (insulation between systems)
comigaration	Number	16-point /common
	of output	re penit recininen
	points per	
	common	
	Common	Negative
	polarity	
Output setting		Output hold/output OFF can be
transmission in		selected
Output signal	display	For each point: LED display,
NA - ded	Baratan.	illuminating when ON, logic side
Module state of	ilspiay	RUN display (green), ALM display
Fault diagnosi	<u> </u>	(red) Transmission state, external power
r autt diagriosis	5	supply error
Applicable bas	se unit	BU905
Current consu		Internal: 24VDC-100mA or less
Internal heat generated		Approx. 4W
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		500VAC, 1 minute (between
	•	systems, between external circuit
		and internal circuit)
Built-in fuse		2A × 4
Surge removal circuit		Diode
Outside dimensions (mm)		35W × 185H × 95D
Weight		400g or less
Installation		Vertical and horizontal installation
		(external line is downside)

Table 25 DO936 specifications

ŀ	tem	Specification
Pet name		DO936
Output class		FET output
Output typ	е	Sink output
Number of	output points	16-point
Insulation	type	Transformer insulation
Rated load	d voltage	12 to 24VDC
Load volta range	ge variable	10 to 30VDC
	load current	2A/point
saturation during ON	•	1.5V or less
Leak curre	ent during	0.1mA or less (at 24VDC)
Output	OFF→ON	1ms or less
response time	ON→OFF	1ms or less
Output sig	nal display	Green LED: illuminating when output ON
Module sta	ate display	RUN display (green), ALM display (red)
External co	onnection	36P fixed type M3.5 screw terminal base (BU906A)
Common o	configuration	Each point common
Derating c		None
Power sup (internal 24	ply voltage 4V)	24VDC+10%, -15%
Current co	nsumption	24VDC-90mA or less
Insulating	,	10MΩ or more (500VDC megger)
Withstand		1500VAC, 1 minute (between
Willistand Voltage		external and internal circuits)
		500VAC, 1 minute (between
		systems)
DO internal fuse		Not available (protection fuse is
		installed on outside)
Surge elim	nination circuit	Diode
Outside dimensions (mm)		35W × 185H × 95D
Weight		210g or less
Installation	1	Vertical and horizontal installation (external line is downside)
		,

Table 26 RO966 specifications

Ite	em	Specification
Pet name		RO966
Output type	•	Relay output with a contact
Number of		16-point (each point independent)
points	output	To point (oddir point indopondont)
Insulation t	уре	Photo-coupler insulation
Rated load	voltage	100 to 240VAC, 24VDC
	oad current	2A/point
Contact ON	١	50 MΩor less (initial value)
resistance		
Leak curre	nt during	None
Minimum o		5VDC, 10mA
voltage cur		
Response		10ms or less
time	ON→OFF	10ms or less
Output sigr	nal display	For each point: LED display,
		illuminating when ON, logic side
Module sta	te display	RUN display (green), ALM display
		(red)
Fault diagn	osis	Transmission state, external power
		supply error
Applicable		BU906A
Current cor		Internal: 24VDC-50mA or less
Relay driving		Rated voltage: 24VDC (21.6 to
supply (ext	ernai)	26.4VDC)
		Rated current: 145mA (when all points ON)
Internal hea	at	Approx. 4W
generated		
Mechanical life		2 million times or more
Built-in fuse		None
Insulating resistance		10MΩ or more (500VDC megger)
Withstand voltage		1500VAC, 1 minute (between
		systems, between external circuit and
Outside discounts		internal circuit)
Outside din	nensions	35W × 185H × 95D
(mm)		
Weight		400g or less
Installation		Vertical and horizontal installation
(Note) The	averleed are	(external line is downside)

(Note) The overload protection fuse is attached externally.

Table 27 Al914 specifications

Tubic 27 Ald 14 Specifications		
Item	Specification	
Pet name	Al914	
Number of input	4ch(insulation between channels)	
channels		
Input signal	0-5V	
Conversion cycle	1msec or less/4 channels	
A/D conversion	0-16000 counts (0-5V)	
resolution		
Reference accuracy	±0.1%/within full scale	
Temperature drift	100ppm/°C or less	
Input impedance	$1M\Omega$ or more (within specified input	
	range)(2kΩ or more for reverse polarity	
1 ()	connection)	
Input disconnection	Down scale	
characteristic	45 to 124\/	
Maximum input level	-15 to +24V	
Input filter time constant	CR filter: Approx. 2ms	
Module state display	DLIN diaplay (groop) ALM diaplay (rad)	
Fault diagnosis	RUN display (green), ALM display (red) A/D conversion operation, transmission,	
Fault diagnosis	CPU	
Current	Internal: 24VDC-70mA or less	
consumption		
Internal heat	1.5W or less	
generated		
Insulating resistance	$10M\Omega$ or more (500VDC	
	megger)(between insulations)	
Withstand voltage	500VAC, 1 minute (between	
	insulations)	
	1500VAC or more for each insulating	
Applicable base weit	part	
Applicable base unit Outside dimensions	BU903A 35W × 185H × 95D	
(mm)	3344 ~ 10301 ~ 830	
Weight	200g or less	
Installation	Vertical and horizontal installation	
IIIStaliation		
	(external line is downside)	

Table 28 Al918 specifications

Item	Specification
Pet name	Al918
Input class	Voltage input
Number of input channels	8CH
Insulation type	Insulation between each channel
Input signal	0 to 5V
Input impedance	500kΩor more
Conversion cycle	10ms/8 channel
A/D conversion	0 to 64000 counts (0 to 5V) (14 bits
resolution	resolution)
Reference input accuracy	±0.1%/Within the full scale
Temperature drift	±0.1%/10°C
Power supply variable	±0.1%/24VDC±10%
Allowable maximum	Within ±24V
input level	
Module state display	RUN display (green), ALM display (red)
Fault diagnosis	A/D conversion operation,
	transmission, CPU
24VDC power supply voltage	24VDC + 10%, -15%
24VDC current	50mA or less
consumption	
Insulating resistance	10M Ω or more (500MVDC megger)
	(between insulations)
Withstand voltage	500VAC, 1 minute (between
	insulations)
External connection	36P fixed type M3.5 screw terminal
	base (BU903A)
Outside dimensions (mm)	35W × 185H × 95D
Weight	240g or less
Installation	Vertical and horizontal installation
	(external line is downside)

Table 29 Al919 specifications

	•
Item	Specification
Pet name	AI919
Number of input	16ch (batch insulation, common
channels	throughout side N)
Input signal	0 to 5V
Conversion cycle	50msec or less/16 channels
A/D conversion	0 to 64000 counts (0-5V), 14 bits
resolution	resolution
Reference input accuracy	±0.1%/Within the full scale
Temperature drift	100ppm/°C or less
Input impedance	1MΩ or more
Input disconnection	Downscale
characteristic	
Input filter time	CR filter: Approx. 10ms
constant	
Maximum input level	±30V
Module state display	RUN display (green), ALM display (red)
Fault diagnosis	A/D conversion operation,
	transmission, CPU
Current consumption	Internal: 24VDC-70mA or less
Internal heat generated	1.5W or less
Insulating resistance	10MΩ or more (500MVDC megger)
	(between insulations)
Withstand voltage	500VAC, 1 minute (between
	insulations)
External connection	BU903A (end terminal resistance
	TR929: 0-20mA can be selected for
	input by installation)
Outside dimensions (mm)	35W × 185H × 95D
Weight	200g or less
Installation	Vertical and horizontal installation
	(external line is downside)

Table 30 Al928 specifications

	·
Item	Specification
Pet name	Al928
Input class	Power supply input
Number of input	8CH
channels	
Insulation type	Transformer insulation between
	each channel
Input signal	0 to 20mA
Input impedance	250Ω
Conversion cycle	0.5ms/8 channel
A/D conversion	0 to 64000 counts (0-20mA) (14 bits
resolution	resolution)
Reference input	±0.2%/Within the full scale
accuracy	(target±0.1%)
Temperature drift	±0.1%/(10°C)
Power supply variable	±0.1%/(24VDC±10%)
Allowable maximum	30mA
input level	
Module state display	RUN display (green), ALM display (red)
Fault diagnosis	A/D conversion operation,
	transmission, CPU
Power supply voltage (internal 24V)	24VDC+10%, -15%
Current consumption	24VDC – 50mA or less
(internal 24V)	24400 00111/101 1000
Insulating resistance	10MΩ or more (500MVDC megger)
	(between insulations)
Withstand voltage	500VAC, 1 minute (between
	insulations)
External connection	36P fixed type M3.5 screw terminal
	base (BU902A)
Outside dimensions (mm)	35W × 185H × 95D
Weight	240g or less
Installation	Vertical and horizontal installation
	(external line is downside)

Table 31 Al929D specifications

	T
Item	Specification
Pet name	Al929D
Number of input	16ch (batch insulation, common
channels	throughout side N)
Input signal	0-20mA
Conversion cycle	50msec or less/16 channels
A/D conversion	0 to 64000 counts (0-20mA), 14bit
resolution	resolution
Reference input	±0.1%/within full scale
accuracy	
Temperature drift	100ppm/°C or less
Distributor	External 24VDC (±10%) to be
	distributed to channels after input
	(built-in overcurrent protection)
	Internal voltage drop: 3V or less,
	internal current consumption: 15mA
	or less
Input impedance	250Ω
Input disconnection	Downscale
characteristic	
Input filter time	CR filter · Approx. 10ms
constant	

Item	Specification
Maximum input level	21mA
Module state display	RUN display (green), ALM display (red)
Fault diagnosis	A/D conversion operation, transmission, CPU, external power disconnection
Current consumption	Internal: 24VDC-70mA or less
Internal heat generated	3.2W or less
Insulating resistance	10MΩ or more (500MVDC meggar between insulations)
Withstand voltage	500VAC, 1 minute (between insulations)
Built-in circuit protection element	Poly-switch (24VDC external input)
Applicable base unit	BU902A
Outside dimensions (mm)	35W × 180H × 95D
Weight	400g or less
Installation	Vertical and horizontal installation (external line is downside)

Table 32 Al959B specifications

14.		Cunnification
Item		Specification
Pet name		AI959B
Number of		16 points
Input signal		1-5 VDC (signal conditioner output
		voltage)
Applicable :	signal	CISO5, CISO6, CISO7, CDIS7,
conditioner		CTC**, CRTD*, CPIN1, CPOT1,
		CPTI1, CCTI1
Applicable t	terminal	UTBA7
block unit		
Unit of	Module	All points isolated
input	(alone)	
isolation	System	All points isolated by the use of signal
		conditioner
Internal logi	ic - analog	No isolation
input isolati		
Analog inpu	ıt	16 bits
conversion	resolution	
Data format		12,800-64,000 counts/1-5 V (0-100%)
		Minimum count: 0 Maximum count:
		65,535
Data update	e cycle	25 ms/16 points
Reference	AI959B	±0.1%/FS @ 25 °C /+24 V
input	System	Above-described module input
accuracy		accuracy added with signal
		conditioner accuracy
Over-range	input	±3% /(0-65,535) max.
accuracy		
CMRR		100 db or higher (50 Hz/60 Hz)
		(combined with signal conditioner)
Temperatur	e drift	±0.015% FS/ °C max. (standard: 25
,		°C)
Supply voltage drift		±0.1%/FS max.
Input disconnection		Downscale (without signal
characteristic		conditioner)
		(Set according to the signal
		conditioner specifications when the
		input signal is disconnected.)
		•

	Item	Specification
	out disconnection	10 sec or less (during the time period
detection time		until the sensor error H or L alarm is
		generated upon input signal
D-	dundant	disconnection)
	dundant nfiguration	Not applicable
	iline	OK (by the operation of the hot swap
	achment/detachment	setting switch)
	ult diagnosis	Analog reference voltage, CPU,
<u> </u>	ait alagnoolo	memory, power supply error,
		transmission status
Мс	odule status display	RUN display (green), ALM display
	, ,	(red), STAND-BY (green)
	Supply method	From UTBA7 via connector
	Supply voltage	+24 VDC +10%/-15%
	(system power	
	supply)	
	Allowable ripple	1% p-p (max.)
	Current	+24 VDC; 120 mA or lower
>	consumption	
ddr	(system power	
เรเ	supply)	.00.1/D0
Power supply	Maximum allowable	+30 VDC
Po	voltage Inrush current	E A (may)
		5 A (max.)
	CPU reset voltage Allowable	+3.0 VDC (built-in supply voltage) Continuous operation if 1 ms or less
	instantaneous	at +24 V
	power failure	at +24 V
	Built-in circuit	Fuse
	protection element	1 400
Ins	sulating resistance	100 MΩ or higher (500 DCV megger)
	3	(between FG and internal circuit)
Wi	thstand voltage	500 VAC, 1 min (between FG and
3.5		internal circuit)
Ou	tside dimensions	40W×90H×95D (without protrusions)
(mm)		
We	eight	400g

Table 33 Al969 specifications

Item	Specification
Pet name	Al969
Number of input channels	16ch (insulation between channels)
Input signal	mV/V input -5 to +5V, -1 to +1V, -100 to +100mV, -50 to +50mV, -20 to +20mV, -10 to +10mV Each channel can be set independently
Conversion cycle	0.8s/16 channels or less
A/D conversion resolution	0 to 32000 (with negative values, sign+15bit format)
Reference input	5V range: ±0.1%F.S.
accuracy	1V range: ±0.1%F.S.
Temperature drift	100mV range: ±0.12%F.S.
	50mV range: ±0.12%F.S.
	20mV range: ±0.15%F.S.
	10mV range: ±0.15%F.S.
CMRR	100dB or more (100VAC-50/60Hz)
Input impedance	1MΩ or more
Input disconnection	Downscale
characteristic	Burnout function: Converges within 0 to
	±640 counts at 5V range
	(within ±2%F.S.)(within 10sec after
	disconnection)
A/D conversion correction processing	Zero, gain correction by microcomputer
Module state display	RUN display (green), ALM display (red)
Fault diagnosis	A/D conversion operation, transmission, CPU
Current consumption	Internal: 24VDC-150mA or less
Internal heat	2.4W or less
generated	
Allowable short interruption	Continuous operation for 1ms or less
Insulating resistance	$10M\Omega$ or more (500VDC) (between all input lines and system, between all input lines and FG, between system and FG, between input channels)
Withstand voltage	500VAC/1 minute (between all input lines and system, between all input lines and FG, between system and FG)
	AC175V/1 minute (between input channels)
Applicable base unit	
Applicable base unit Outside dimensions (mm)	channels)

Table 34 TC919 specifications

Item		Specification
Pet name		TC919
Number of input channels		16ch (insulation between channels)
Input signal		Thermocouple: B, R, S, J, K, T, E; each
		point can be set independently
Conversion cycle		0.8s/16 channels or less
A/D conversion		0 to 32000(32767)
resolution	_	
Reference input	В	600 to 1700°C(±0.13%)
accuracy	R	0 to 1000°C(±0.18%), 0 to
	S	1600°C(±0.2%), 800 to 1600°C(±0.12%) 0 to 1000°C(±0.14%), 0 to
	3	1600°C(±0.17%), 800 to
		1600°C(±0.14%)
	J	0 to 200°C(±0.12%), 0 to 400°C(±0.1%),
		0 to 600°C(±0.1%),
		300 to 600°C(±0.1%)
	K	0 to 300°C(±0.12%), 0 to 600°C(±0.1%),
		0 to 1200°C(±0.1%),
		600 to 1200°C(±0.1%), -50 to
		100°C(±0.2%)
	Т	0 to 300°C (±0.1%), -50 to
	_	100°C(±0.2%)
	E	0 to 200°C(±0.1%), 0 to 400°C(±0.1%),
		0 to 600°C(±0.1%), 0 to 800°C(±0.1%), -50 to 100°C(±0.2%)
Cold junction		Within ±1°C
compensation		Within ±1 G
accuracy		
Temperature drift		±0.015%/°C
Input impedance		1MΩ or more
Input disconnection		Upscale/downscale can be selected
characteristic		
Input disconnection	n	Within 1 second
detection time		
Module state disp	lay	RUN display (green), ALM display (red)
Fault diagnosis		A/D conversion operation, transmission, CPU
Current		Internal: 24VDC-100mA or less
consumption		
Internal heat		2.4W or less
generated		40140
Insulating resistan	ice	$10M\Omega$ or more (between channels, external and internal, analog and
		external power supply)
Withstand voltage		500VAC, 1 minute (between external
Withotana Voltage		and internal, analog and external power
		supply)
		175VAC, 1 minute (between channels)
Applicable base unit		BU904A
Outside dimensions		35W × 185H × 95D
(mm)		
Weight		350g or less
Installation	_	Vertical installation only, no horizontal
		installation

Table 35 RT918C specifications

Item		Specification
Pet name		RT918C
Number of i	nput	8ch (non-insulated between channels)
channels	•	,
Input signal		3-wire RTD (resistance-temperature
		detector: Pt100, JPt100); each point can
		be set independently
Conversion		0.8s/8 channels or less
A/D convers	sion	0 to 32000 (with negative values, sign +
resolution	Dittoo	15bit format)
Reference	Pt100	0 to 150°C (±0.1%), 0 to 300°C (±0.1%),
input accuracy		0 to 500°C (±0.1%), -50 to 100°C (±0.1%), -150 to 50°C
(Range:		(±0.1%)
0-100%)		(±0.170)
0 10070)	JPt100	0 to 150°C (±0.1%), 0 to 300°C (±0.1%),
	0	0 to 500°C (±0.1%),
		-50 to 100°C (±0.1%), -150 to 50°C
		(±0.1%)
Temperatur	e drift	±0.015%/°C
Sensor curr	ent	Approx. 1mA
Input discon		Upscale (factory setting)
characterist		
Input discon		Within 2 seconds (within 6 seconds
detection tin		upon B line disconnection)
Module state		RUN display (green), ALM display (red)
Fault diagno	OSIS	Power voltage low, A/D conversion
Current		operation, transmission, CPU Internal: 24VDC-80mA or less
consumption	n	Internal 24VDC-00IIIA 01 less
Internal hea		2W or less
generated		
Withstand v	oltage	500VAC, 1 min (between external and
	Ü	internal circuits, between analog and
		external power supply)
Applicable base unit		BU902A
Outside dimensions		35W × 185H × 95D
(mm)		
Weight		250g or less
Installation		Vertical and horizontal installation
		(external line is downside)

Table 36 RT918 specifications

Item		Specification
Pet name		RT918
Number of in	out	8ch (non-insulated between channels)
channels		
Input signal		3-wire RTD (resistance-temperature
		detector: Pt100, JPt100); each point
		can be set independently
Conversion c	ycle	0.8s/8 channels or less
A/D conversion	on	0 to 32000 (with negative values, sign
resolution		+ 15bit format)
Reference	Pt100	0 to 150°C (±0.1%), 0 to 300°C
input		(±0.1%), 0 to 500°C (±0.1%),
accuracy		-50 to 100°C (±0.1%), -150 to 50°C
(Range:		(±0.1%)
0-100%)	JPt100	0 to 150°C (±0.1%), 0 to 300°C
		(±0.1%), 0 to 500°C (±0.1%),
		-50 to 100°C (±0.1%), -150 to 50°C
		(±0.1%)
Temperature	drift	±0.015%/°C
Sensor currer		Approx. 1mA
Input disconn	ection	Upscale (factory setting)
characteristic		
Input disconn		Within 2 seconds (within 6 seconds
detection time		upon B line disconnection)
Module state	display	RUN display (green), ALM display
		(red)
Fault diagnosis		Power voltage low, A/D conversion
		operation, transmission, CPU
Current consi	umption	Internal: 24VDC to 120mA or less
Internal heat		2.4W or less
generated		10110
Insulating res	istance	10M Ω or more (between external and
		internal circuits, between analog and
1.00		external power supply)
Withstand voltage		500VAC, 1 min (between external and
		internal circuits, between analog and
Applicable hass ::=:4		external power supply)
Applicable base unit		BU902A
Outside dimensions (mm)		35W × 185H × 95D
Weight		250g or less
Installation		Vertical and horizontal installation
		(external line is downside)

Table 37 AO928/AO928F specifications

lka	Cuncification
Item	Specification
Pet name	AO928/AO928F
Number of output	8ch (insulation between channels)
channels	
Output signal	0 to 20mA
Output load range	0-600Ω, L load 10H or less
D/A conversion	0-64000 counts→0-20mA
resolution	(AO928 has 14bit resolution; AO928F
	has 16bit resolution)
Reference output	±0.1%/within full scale
accuracy	(1% or less output: ±0.5%/full scale)
Load fluctuation	Within $\pm 0.05\%$ (with respect to 250 Ω)
Temperature drift	±0.01%/°C or less
Output ripple	$\pm 0.1\%$ /within full scale (10KHz or less)
D/A conversion	1ms or less/8 channels
cycle	
Output response	Output of 90% established within 0.4ms
delay time	after data write (resistance load)
Output setting for	Output hold/output OFF can be selected
transmission	
interruption	
Module state display	RUN display (green), ALM display (red)
Fault diagnosis	Output signal read-back, power voltage
	low, transmission, CPU
Current	Internal: 24VDC-70mA or less, External:
consumption	24VDC-220mA or less
Internal heat	5W or less
generated	
Built-in circuit	Poly-switch (24VDC external power
protection element	supply)
Insulating resistance	$10M\Omega$ or more (between insulations)
Withstand voltage	500VAC, 1 minute (between
	insulations)
Applicable base unit	BU903A
Outside dimensions	35W × 185H × 95D
(mm)	
Weight	400g or less
Installation	Vertical and horizontal installation
	(external line is downside)

Table 38 AO929 specifications

Item	Specification
Pet name	AO929
Number of output	16ch (non-insulation between channels:
channels	common with N side)
Output signal	0 to 20mA
Output load range	0 to 600Ω, L load 10H or less
D/A conversion	0-64000 counts→ 0-20mA (14bit
resolution	resolution)
Reference output	±0.125%/within full scale
accuracy	
Load fluctuation	Within $\pm 0.05\%$ (with respect to 250 Ω)
Temperature drift	±0.01%/°C or less
Output ripple	±0.1%/within full scale (10KHz or less)
Conversion cycle	20ms or less/16 channels
Output setting for	Output hold/output OFF can be selected
transmission	
interruption	
Module state display	RUN display (green), ALM display (red),
	HOLD display (green)
Fault diagnosis	Power voltage low, transmission, CPU
Current	Internal: 24VDC-60mA or less,
consumption	External: 24VDC-350mA or less
Internal heat	9W or less
generated	
Built-in circuit	Poly-switch (24VDC external power
protection element	supply)
Insulating resistance	10MΩ or more (external and internal)
Withstand voltage	500VAC, 1 minute (external and
	internal)
Applicable base unit	BU902A
Outside dimensions	35W × 180H × 95D
(mm)	1400
Weight	400g or less
Installation	Vertical and horizontal installation
	(external line is downside)

Table 39 AO969B specifications

Item		Specification
Pet name		AO969B
Number of input points		16 points
Input signa		0.4-2 VDC (converted into 4-20 mA
		DC signal by signal conditioner)
Applicable	signal	CISO8
conditioner		
Applicable	terminal	UTBA8
block unit		
Unit of	Module	All points non-isolated
input	(alone)	
isolation	System	All points isolated by the use of
		signal conditioner
Internal log	ic - analog	No isolation
input isolati	on	
Analog out		2.0475 V/20.475 mA/655,355 counts
conversion	resolution	(0.4 V/4 mA/12,800 counts, 2.0 V/20
		mA/64,000 counts)
Data format		16 bits (128,000-64,000
		counts/0.4-2.0 V)
Data updat		25 ms/16 points
Reference		±0.1%/FS @ 25°C/+24 V
input	System	Above-described module input
accuracy		accuracy added with signal
		conditioner accuracy
Over-range output		±0.5% (0-65,535) max.
accuracy		
Temperatur	e drift	±0.01% FS/°C max. (with respect to
		the reference value: 25°C)
Supply volt		±0.1%/FS max.
Redundant		Not applicable
configuration	on	
Online		OK (by the operation of the hot swap
attachment/detachment		setting switch)
Fault diagnosis		Analog output read-back*1, output
-		disconnection detection*2,
		transmission bus, CPU, memory,
		power supply error
		*1 Diagnoses the voltage from
		AO969B.
		*2 Diagnosed by CISO8

Item		Specification
Output designation		CPU error, memory error,
upon error		transmission bus error (reception
		disabled for a predetermined time
		period)
		HOLD designation (output hold),
		RESET designation (output at all
		points OFF)
		* Upon the detection of read-back
		error or output disconnection, the
		output hold operation is carried out
		irrespective of the HOLD or RESET
L.		designation.
Mo	dule status display	RUN display (green), ALM display
	0	(red), STAND-BY (green)
	Supply method	From UTBA8 via connector
	Supply voltage	+24 VDC +10%/-15%
	(system power	
	supply)	10/ n n (may)
	Allowable ripple Current	1% p-p (max.) +24 VDC 150 mA or lower
	consumption	TZ4 VDC 130 IIIA 01 I0WeI
5	(system power	
dn	supply)	
S -S	Maximum allowable	+30 VDC
Power supply	voltage	
P	Inrush current	5 A (max.)
	CPU reset voltage	+3.0 VDC (built-in supply voltage)
	Allowable	+24 V 1 ms (min.)
	instantaneous	, ,
	power failure	
	Built-in circuit	Fuse
L	protection element	
Ins	ulating resistance	100 M Ω or higher (500 VDC megger)
		(between FG and internal circuit)
Withstand voltage		500 VAC 1 min (between FG and
		internal circuit)
Outside dimensions		40W × 90H × 95D (without
(mm)		protrusions)
Weight		400g

Table 40 PI918 specifications

Item	Specification
Pet name	PI918
Number of input	1 phrase 8ch (insulation, with gate
channels	input)
Input signal	12-24V voltage pulse (9.6 to 26.4V)
Counter	15bit up counter
Input current	8-12mA (12 to 24V)
Range of number of	Low speed (contact): DC to 50Hz
input frequency	High speed (semiconductor): DC to 50KHz
Minimum pulse width	Low speed: 9ms (ON/OFF)
	High speed: 9µs (ON/OFF)
Pulse threshold level	4-8V (between input terminals)
Common setting	(1) Input filter low speed: DC to
(parameter)	50Hz/High speed: DC to 50kHz
	(2) Internal reference pulse 100Hz,
	1kHz, 10kHz, 50kHz
	(3) Speed (frequency) measurement
	period 0.1s, 0.2s, 0.5s, 1s
	(4) Prohibition/Permission of
Catting for each	external gate control
Setting for each	Soft gate control, comparison
channel (parameter)	function, number of frequency counter, pulse width measurement,
	master/slave counter.
	internal/external selection within
	pulse.
Module state display	RUN display (green), ALM display
modulo otato alopia)	(red), external input display (green)
Fault diagnosis	Transmission
Current consumption	Internal: 24VDC-100mA or less
Internal heat generated	7W or less
Insulating resistance	10MΩ or more (between external
	circuit and internal circuit)
Withstand voltage	500VAC, 1 minute (between external
	circuit and internal circuit)
Applicable base unit	BU902A
Outside dimensions (mm)	35W × 185H × 95D
Weight	200g or less
Installation	Vertical and horizontal installation
	(external line is downside)

Table 41 PI924 specifications

Item	Specification
Pet name	PI924
Number of input	2 phrase 4ch, with gate input (each
channels	insulation)
Input signal	12-24V pulse (9.6 to 26.4V)
Counter	16bit (-32768 to +32767)
	up/down counter (A phase leading up, B
	phase leading down)
Input current	8-12mA (input voltage 12-24V)
Range of number of	DC to 50KHz
input frequency	
Minimum pulse width	6μs (ON/OFF)
Pulse threshold level	4. 9\/ (hotwoon input terminals)
	4- 8V (between input terminals) (1) internal reference pulse
Common setting	` '
(parameter)	100Hz,1kHz,10kHz,50kHz (2) Prohibition/Permission of external
	gate control
Setting for each	Alarm function, hold function, duty
channel (parameter)	function, internal/external selection
chamile (parameter)	within pulse.
Module state display	RUN display (green), ALM display (red),
, ,	external input display (green)
Fault diagnosis	Transmission
Current	Internal: 24VDC-100mA or less
consumption	
Internal heat	6W or less
generated	
Insulating resistance	10MΩ or more (between external circuit
	and internal circuit)
Withstand voltage	500VAC, 1 minute (between external
	circuit and internal circuit)
Applicable base unit	BU902A
Outside dimensions	35W × 185H × 95D
(mm)	
Weight	200g or less
Installation	Vertical and horizontal installation
	(external line is downside)

Table 42 PI948 specifications

Item	Specification
Pet name	PI948
Number of input channels	8ch (no insulation between channels)
Input signal	No-voltage contact pulse, voltage pulse; each point can be set independently
Counter	16-bit up counter
Input current (no-voltage contact pulse)	7mA (24VDC)
Input resistance	During energization: 10kΩ or more
(voltage pulse)	Not during energization: 10kΩ or more
Input frequency	No-voltage contact pulse: DC to 50Hz
range	Voltage pulse: DC to 10kHz
Rated input voltage	No-voltage contact pulse ON Potential between external power supply voltage (+) to $PI(+) \ge 18V$ (or 200Ω or less between input terminals) OFF Potential between external power supply voltage (+) to $PI(+) \le 4V$ (or $15k\Omega$ or more between input terminals) Voltage pulse: 2 to $30Vp-p$
DC bias during voltage pulse	1 to 13VDC
Minimum pulse width	No-voltage contact pulse: 10msec (ON/OFF)
	Voltage pulse: 50µseC (ON/OFF)

Item	Specification
Pulse threshold	1 to D(13) are set with the setting
voltage setting	switches in the module front.
	The setting numbers correspond to
	threshold voltages.
	Example: Setting A=10V Setting
	5=5V
	Setting B=11V for no-voltage pulse
Module state display	RUN display (green), ALM display (red)
Fault diagnosis	Power voltage low, reference input
	pulse error, external power supply error,
	transmission, CPU
Current	Internal: 24VDC-100mA or less
consumption	
External power	24VDC +10%/-15%
supply voltage	
Allowable short	Continuous operation for 1ms or less
interruption	
Insulating resistance	10MΩ or more(500VDC)
	(between all input lines and system,
	between all input lines and FG, between
	system and FG)
Withstand voltage	500VAC/1 minute
	(between all input lines and system,
	between all input lines and FG, between
A 11 1 1 11	system and FG)
Applicable base unit	BU929F
Outside dimensions	35W×185H×95D
(mm)	100
Weight	400g or less

◆TC-net I/O compound module

Table 43 LP918B specifications

Item		Specification		
Pet name		LP918B		
Input/	Analog	Input signal	1-5VDC	
output	input	Number of	12 channels (insulation	
	(PV)	points	between channels)	
		Insulation unit	Insulation between	
			channels (withstand	
			voltage: 175Vac)	
		Input	$1M\Omega$ or more (during	
		resistance	energization/power	
			failure)	
		Conversion	150msec/12 channels	
		cycle	10.11	
		Resolution	16 bits	
		Conversion	12,800 to 64,000/1-5VDC	
		data	10.40/ /E.C. //c.a.d	
		Reference	±0.1%/F.S.(load	
		input accuracy	resistance 250Ω)	
		Temperature	100ppm/°C or less	
		drift	Tooppin/ C of less	
		Allowable	±10V	
		input voltage	1101	
		Input	Downscale	
		disconnection		
		characteristic		
		CMRR	100dB or more	
			(100VAC,50/60Hz)	
	Operation	Output signal	4VDC-20mA	
	output	Number of	8 channels (no insulation	
	(MV)	points	between channels)	
		Insulation unit	No insulation between	
		Deschution	channels	
		Resolution	12 bits	
		Conversion	12,800 to 64,000 count/4VDC-20mA	
		data Output	100msec (0→90%)	
		response	100111356 (0-3070)	
		Output load	0 to 600Ω	
		resistance	1 10 00012	
		range		
		Reference	±0.2%/F.S.	
		output		
		accuracy		
		Temperature	±0.15%F.S./10°C	
		drift		
		Dedicated	24VDC±10% (supplied	
		external	from BU928F TB2)	
		power supply		
	Auxiliary	Input signal	No-voltage contact	
	input	Number of	8 channels	
	(DI)	points		

Item		Specification		
Input/	Auxiliary	Insulation unit	No insulation between	
output	input		channels	
	(DI)	Input	On: 200Ω or less	
		threshold	Off: 100kΩ or more	
		Power voltage	24VDC±10%	
			(supplied from VTBUX3*	
			via dedicated cable)	
			(shared with the external	
			power supply for DO)	
	Auxiliary	Output signal	FET open drain	
	output	Number of	8 channels	
	(DO)	points		
		Insulation unit	No insulation between channels	
		Output current	30VDC or less 0.1A or	
			less (resistance load)	
		Power voltage	24VDC±10%(supplied	
		· · · · · · · · · · · · · · · · · · ·	from VTBUX3* via	
			dedicated cable)(shared	
			with the external power	
			supply for DI)	
Redunda	ancy	Available		
Module	state	RUN display (g	green), ALM display (red),	
display		STBY display (green)	
Fault diagnosis		Output signal read-back, ADC reference input, redundancy input diagnosis (with SA931), external power supply voltage low, power voltage low, transmission, CPU		
Current		System power supply:		
consump	otion	24VDC-150mA or less		
		External power supply for MV:		
		24VDC-300mA or less		
			ver supply for DIO:	
		24VDC-150mA or less		
Allowabl		Continuous ope	eration for 1ms or less	
interrupt				
Insulating		$10M\Omega$ or more (between external and		
resistance		internal circuits)		
Withstand voltage		500VAC,1 minute (between external and internal circuits)		
Applicable TC-net		SA931		
I/O adaptor				
Applicable base		BU928F		
unit		0514/40511.05	D	
Outside		35W×185H×95	ט	
dimension Weight	ons (mm)	400g or less		

•TC-net I/O special module

Table 44 FL911 specifications

Category	Item	Specification
	Pet name	FL911
	Applicable standard	IEEE 802.3u 100BASE-TX
	Media access method	CSMA/CD method
တ္ဆ	Data transmission speed	10Mbps/100Mbps
tion	Ethernet frame	DIX format
<u>ig</u>	Topology	Star
specif	Transmission path	Single bus
uo	Transmission	Category 5
Transmission specifications	cable/cable length	Twisted pair cable: Max.100m
ans	Node count	Up to 254 nodes/system
Tr	Maximum number of FL911 modules installed	Up to 16 modules/controller
	Communication	100BASE-TX、10BASE-T(auto
	interface	switching)
		RJ-45 connector
Functional specifications	Protocol	UDP/IP, FA link protocol
Funct	Transmission method	Cyclic transmission

Category	Item	Specification
	Data transmission speed	Max. 9600bps
Serial specifications	Synchronization method	Asynchronous
ecifica	Transmission cable	Cross cable with 9-pin-9-pin D-sub connector
ds	Cable length	Max. 15m
Serial	Communication method	Half duplex
	Communication	Parity bit: None
	setting	Character length: 8 bits
		Stop bit: 1 bit
Current consumption		DC24V - 0.5A or less
Grounding		D-class grounding with ground
		resistance of 100Ω or less
		(proposed by the Japanese
		Ministerial Ordinance)
Cooling		Natural air cooling
Applicable base unit		BU901
Outside dimensions (mm)		35W×185H×95D
Weight		250g or less

(Note) Perform a transmission check of transmission data in the application level.

•Signal Conditioner

Table 45 CISO5 specifications

Category	Item	Specification
Pet name		CISO5
	Input signal	mVDC voltage
Ø	Span	DC 5-200 mV
ion		Standard range : CISO5-11: 0-10
cat		mV CISO5-21: 0-20 mV
cifi		CISO5-31: 0-50 mV CISO5-41:
be		0-100 mV
×		CISO5-51: 0-200 mV Other
Input block specifications		ranges also available.
Ħ	Input	1 MΩor higher (1 MΩor higher upon
du	resistance	power failure)
_	Allowable	30 VDC continuous
	input voltage	51
	Output signal	First output: 1-5 VDC
		Second output: 1-5 VDC
Ø	Maximum	For voltage output: 2 mA
ion	output current	
cat	Minimum	-0.6 VDC (Typ.)
ĊĦ	output voltage	- 1/20 (T
spe	Maximum	+7 VDC (Typ.)
Output block specifications	output voltage	A
) S	Zero point	Approx. ±2% of span (The range
Ħ	adjustment	can be varied by a trimmer on the
utp	range	panel front face.)
Ō	Span	Approx. ±2% of span (The range
	adjustment	can be varied by a trimmer on the panel front face.)
	range	'
	Burnout Conversion	Downscale Within ±0.1% FS (at 25±5°C)
		Willin ±0.1% F3 (at 25±5 C)
92	accuracy Temperature	±0.29/ or loss of apan with respect
naı	characteristic	±0.2% or less of span with respect to variation of 10°C
forr	Standard	Approx. 2 Hz-3 dB
Jeri		Αρρίολ. 2 Π2-0 UD
Reference p	· ·	Downscale: during the time period
		·
		'
Reference performance	response time Input disconnection characteristic	Downscale: during the time period until the output reaches 1 V upon disconnection with 100% input Approx. input span (mV) × 0.1 sec or less

Category	Item	Specification
	CMRR	100 dB or higher (500 VAC, 50/60 Hz)
	Signal isolation	Input - first output - second output - power supply; isolated
	Insulating	100 MΩor higher (@ 500 VDC)
	resistance	Input - first output - second output - power supply
ance	Withstand voltage	Input - [first output, second output, power supply]: 1,500 VDC; 1 min First output - second output - power supply: 500 VAC; 1 min
rforma	SWC	Compliant with ANSI/IEEE C37.90.1-1989
Reference performance	Operating environment	Temperature: 0-55°C Humidity: 90% RH or lower (no condensation)
efer	Power supply	24 VDC±10%
A A	Power supply	Within ±0.1% of output value (when
	sensitivity	variation = 10%)
	Power supply fuse	300-mA fuse
	Power consumption	DC24V – 20mA or less
	Storage temperature	-10 to +60°C
	Applicable module	Al959B (analog input module)
be	Installation method	Installation on dedicated terminal block unit (UTBA7)
& sha	Wiring method	Wiring on dedicated terminal block unit (UTBA7)
o	Outside	W 19.5 × H 53 × D 84
Installation & shape	dimensions (mm)	
	Weight	Approx. 80 g
	Hot swap	OK
<u> </u>	Housing	ABS resin (UL-94 5V)
Material	Board	Double sided glass epoxy board
■ Ma	Damp proof	HumiSeal coating (polyurethane
	treatment	resin, xylene, ethylbenzene)

Table 46 CISO6 specifications

Category	Item	Specification		
Pet name		CISO6		
	Input signal	DC 4-20 mA Standard range		
"		CISO6-11: DC 4-20 mA		
용 등	Input	250 Ω		
blo	resistance			
Input block specifications	Internal	5 V		
ln pe	voltage drop			
σ σ	Allowable	40 mA continuous		
	input voltage			
	Output signal	First output: 1-5 VDC		
		Second output: 1-5 VDC		
	Maximum	For voltage output: 2 mA		
	output			
Output block specifications	current			
atio	Minimum	-0.6 VDC (Typ.)		
<u>i</u>	output			
ec.	voltage			
ds	Maximum	+7 VDC (Typ.)		
첫	output			
piq	voltage	00/ 6 (7)		
but	Zero point	Approx. ±2% of span (The range can		
Out	adjustment	be varied by a trimmer on the panel		
	range	front face.)		
	Span	Approx. ±2% of span (The range can		
	adjustment	be varied by a trimmer on the panel front face.)		
	range Burnout	Downscale		
	Conversion	Within ±0.1% of maximum input signal		
	accuracy	(at 25±5°C)		
nce	Temperature	±0.2% or less of span with respect to		
na	characteristic	variation of 10°C		
fori	Response	80 ms or less (0-90%) @ 100% step		
Reference performance	speed	input		
	Input	Downscale: during the time period		
	disconnection	until the output reaches 1 V upon		
	characteristic	disconnection with 100% input		
Re		Approx. 60 ms or less		
	CMRR	100 db or higher (500 VAC, 50/60 Hz)		
		111 111 111 111 (000 1710, 00700 112)		

Category	Item	Specification		
	Signal	Input - first output - second output -		
	isolation	power supply; isolated		
	Insulating	100 MΩor higher (@ 500 VDC)		
	resistance	Input - first output - second output -		
		power supply; isolated		
	Withstand	Input - [first output, second output,		
	voltage	power supply]: 1,500 VDC; 1 min		
		First output - second output - power		
ce		supply: 500 VAC; 1 min		
Reference performance	SWC	Compliant with ANSI/IEEE C37.		
orm		90.1-1989		
erfc	Operating	Temperature: 0-55°C		
ď	environment	Humidity: 90% RH or lower (no		
nce		condensation)		
ere	Power supply	24 VDC±10%		
Refe	Power supply	Within ±0.1% of output value (when		
Ľ	sensitivity	variation = 10%)		
	Power supply	300-mA fuse		
	fuse			
	Power	DC24V – 20mA or less		
	consumption			
	Storage	-20 to +75°C		
	temperature			
	Applicable	Al959B (analog input module)		
	module			
4)	Installation	Installation on dedicated terminal		
эре	method	block unit (UTBA7)		
Installation & shape	Wiring	Wiring on dedicated base (UTBA7)		
∞ ~	method			
ion	Outside	W 19.5 × H 53 × D 84		
llat	dimensions			
sta	(mm)			
<u>u</u>	Weight	Approx. 80 g		
	Hot swap	OK		
a	Housing	ABS resin (UL94 5V)		
teri	Board	Double sided glass epoxy board		
_	Damp proof	HumiSeal coating (polyurethane		
	treatment	resin, xylene, ethylbenzene)		

Table 47 CISO7 specifications

Category	Item	Specification
Pet name		CISO7
	Input signal	1-5 VDC Standard range CISO7-11: 1-5 VDC Other ranges also available.
Input block specifications	Input resistance	1 M Ω or higher (1 M Ω or higher upon power failure)
ls	Allowable input voltage	30 VDC continuous
	Output signal	First output: 1-5 VDC Second output: 1-5 VDC
suo	Maximum output current	2 mA
cificati	Minimum output voltage	-0.6 VDC (Typ.)
spec >	Maximum output voltage	+7 VDC (Typ.)
Output block specifications	Zero point adjustment range	Approx. ±2% of span (The range can be varied by a trimmer on the panel front face.)
Out	Span adjustment range	Approx. ±2% of span (The range can be varied by a trimmer on the panel front face.)
	Burnout	Downscale
	Conversion accuracy	Within ±0.1% of maximum input signal (at 25±5°C)
e J	Temperature characteristic	±0.2% or less of span with respect to variation of 10°C
ormar	Response speed	80 ms or less (0-90%) @ 100% step input
Reference performance	Input disconnection characteristic	Downscale: during the time period until the output reaches 1 V upon disconnection with 100% input CISO7: Approx. 7 sec or less
Ref	CMRR	100 db or higher (500 VAC, 50/60 Hz)
	Signal isolation	Input - first output - second output - power supply; isolated

Category	Item	Specification
	Insulating	100 MΩor higher (@ 500 VDC)
	resistance	Input - first output - second output -
		power supply
	Withstand	Input - [first output, second output,
	voltage	power supply]: 1,500 VDC; 1 min
		First output - second output - power
	01440	supply: 500 VAC; 1 min
oce	SWC	Compliant with ANSI/IEEE C37.
Reference performance	0 "	90.1-1989
orn	Operating environment	Temperature: 0-55°C
erf	environment	Humidity: 90% RH or lower (no condensation)
еρ	Dower ownsky	24 VDC±10%
uc	Power supply	
ë	Power supply	Within ±0.1% of output value (when
Ref	sensitivity	variation = 10%) 300-mA fuse
_	Power supply fuse	300-IIIA luse
	Power	DC24V – 20mA or less
	consumption	2011// 01 1000
	Storage	-20 to +75°C
	temperature	
	Applicable	Al959B (analog input module)
	module	, , , ,
υ	Installation	Installation on dedicated terminal
ар	method	block unit (UTBA7)
S.	Wiring	Wiring on dedicated terminal block
∞ ⊔	method	unit (UTBA7)
atio	Outside	W 19.5 × H 53 × D 84
alla	dimensions	
Installation & shape	(mm)	
_	Weight	Approx. 80 g
a	Housing	ABS resin (UL94 5V)
teri	Board	Double sided glass epoxy board
Material	Damp proof	HumiSeal coating (polyurethane
	treatment	resin, xylene, ethylbenzene)

Table 48 CDIS7 specifications

Category	Item	Specification
Pet name		CDIS7
	Input signal	Standard range of various kinds of 2-wire transmitters at DC 4-20 mA CDIS7-11: DC 4-20 mA
	Input resistance	250 Ω
ications	Transmitter power supply	Output voltage: EX (V) = 26 - (250 × input current) DC Maximum current: approx. 24 mA (Typ.)
Input block specifications	Transmitter load resistance	550 Ω or lower
Input blo	Limit current for short-circuit protection	24 mA (Typ.)
	Allowable short circuit duration	No limit
	Transmitter power supply switch	The power supply can be turned ON/OFF by a slide switch on the front face.
	Output signal	First output: 1-5 VDC
Output block specifications	Maximum output current	Second output: 1-5 VDC 2 mA
	Minimum output voltage	-0.6 VDC (Typ.)
ock spe	Maximum output voltage	+7 VDC (Typ.)
utput blo	Zero point adjustment range	Approx. ±2% of span (The range can be varied by a trimmer on the panel front face.)
0	Span adjustment range	Approx. ±2% of span (The range can be varied by a trimmer on the panel front face.)
9 O	Conversion accuracy	Within ±0.1% of maximum input signal (at 25±5℃)
Reference performance	Temperature characteristic	±0.2% or less of span with respect to variation of 10°C
Re	Response speed	80 ms or less (0-90%) @ 100% step input

Input disconnection characteristic Comparison Comparison	Category	Item	Specification	
Signal Input - first output - second output - power supply; isolated Insulating resistance Input - first output - second output - power supply Withstand Voltage Power supply: 1,500 VDC; 1 min First output - second output - power supply: 1,500 VDC; 1 min First output - second output - power supply: 500 VAC; 1 min SWC Compliant with ANSI/IEEE C37.90.1-1989 Operating environment Power supply Within ±0.1% of output value (when sensitivity variation = 10%) Power supply 300-mA fuse Power Consumption Storage Consumption Storage Labellation and dedicated terminal isolated terminal.		disconnection	until the output reaches 1 V upon disconnection with 100% input	
isolation power supply; isolated Insulating resistance 100 MΩor higher (@ 500 VDC) Input - first output - second output - power supply Withstand voltage Input - [first output, second output, power supply]: 1,500 VDC; 1 min First output - second output - power supply: 500 VAC; 1 min SWC Compliant with ANSI/IEEE C37.90.1-1989 Operating Temperature: 0-55°C; Humidity: 90% RH or lower Power supply 24 VDC±10% Power supply Within ±0.1% of output value (when variation = 10%) Power supply 300-mA fuse For example DC24V - 60mA or less Consumption Storage -20 to +75°C Example Lestellation Lestellation and dedicated terminal Installation Installation Installation and dedicated terminal Installation Installa		CMRR	100 db or higher (500 VAC, 50/60	
resistance Input - first output - second output - power supply Withstand voltage Input - [first output, second output, power supply]: 1,500 VDC; 1 min First output - second output - power supply: 500 VAC; 1 min SWC Compliant with ANSI/IEEE C37.90.1-1989 Operating Temperature: 0-55°C; Humidity: 90% RH or lower Power supply 24 VDC±10% Power supply Within ±0.1% of output value (when variation = 10%) Power supply 300-mA fuse Power DC24V - 60mA or less consumption Storage -20 to +75°C temperature Applicable Al959B (analog input module) Installation Installation and dedicated tempinal		isolation	power supply; isolated	
Power supply Power supply Sensitivity Power supply Sensitivity Power supply fuse Power Consumption Storage Applicable Module Power supply fuse Power Consumption Storage Applicable Module Power supply Allocated for a supply			Input - first output - second output -	
Power supply Power supply Sensitivity Power supply Sensitivity Power supply fuse Power Consumption Storage Applicable Module Power supply fuse Power Consumption Storage Applicable Module Power supply Allocated for a supply	erformance		power supply]: 1,500 VDC; 1 min First output - second output - power	
Power supply Power supply Sensitivity Power supply Sensitivity Power supply fuse Power Consumption Storage Applicable Module Power supply fuse Power Consumption Storage Applicable Module Power supply Allocated for a supply	ance p	SWC	Compliant with ANSI/IEEE	
Power supply Power supply Sensitivity Power supply Sensitivity Power supply fuse Power Consumption Storage Applicable Module Power supply fuse Power Consumption Storage Applicable Module Power supply Allocated for a supply	Refere	environment	90% RH or lower	
sensitivity variation = 10%) Power supply fuse Power DC24V – 60mA or less consumption Storage -20 to +75°C temperature Applicable Al959B (analog input module) module	_		24 VDC±10%	
Power supply fuse Power DC24V – 60mA or less consumption Storage -20 to +75°C temperature Applicable Al959B (analog input module) module				
fuse Power consumption Storage Applicable module Potellation Storage Applicable module Installation Applicated tograined				
consumption Storage -20 to +75°C temperature Applicable Al959B (analog input module) module			300-mA fuse	
Storage -20 to +75°C temperature Applicable M959B (analog input module) module			DC24V – 60mA or less	
module		Storage	-20 to +75°C	
Installation process of the process			Al959B (analog input module)	
Wiring wiring on dedicated terminal block unit (UTBA7) Outside Wing wiring on dedicated terminal block unit (UTBA7) Outside Wing wiring on dedicated terminal block unit (UTBA7) Wiring wiring on dedicated terminal block unit (UTBA7)	lape		block unit (UTBA7)	
Outside W 19.5 × H 53 × D 84 dimensions	n & sh	method	Wiring on dedicated terminal block unit (UTBA7)	
ত l(mm) l	stallation		W 19.5 × H 53 × D 84	
Weight Approx. 80 g	<u>_</u>		Approx. 80 g	
Housing ARS resin (LII 94 5\/)	_			
Board Double sided glass epoxy board	eria 9			
Damp proof HumiSeal coating (polyurethane	Material		HumiSeal coating (polyurethane	
treatment resin, xylene, ethylbenzene)				

Table 49 CTC** specifications

Category	Item	Specification				
Pet name		_		CJ2/ CTCE2	/ CTCR2/	
Certaine	T		CS2/ CT			
	Input signal	JIS	S thermod	couple		
	Span		K (CA)	CTCK2-1*:	CTCK2-2*:	
			type	0-300°C	0-600°C	
				CTCK2-3*:	CTCK2-4*:	
				0-1200°C	600-1200°C	
			J (IC)	CTCJ2-1*:	CTCJ2-2*:	
			type	0-200°C	0-400°C	
				CTCJ2-3*:	CTCJ2-4*:	
				0-600°C	300-600°C	
		e Je	E	CTCE2-1*:	CTCE2-2*:	
		Standard range	(CRC)	0-200°C	0-400°C	
		d r	type	CTCE2-3*:	CTCE2-4*:	
		dar		0-600°C	0-800°C	
		an	R type	CTCR2-1*:	CTCR2-2*:	
		St		0-1000°C	0-1600°C	
				CTCR2-3*:		
Su				800-1600°C		
Input block specifications			S type	CTCS2-1*:	CTCS2-2*:	
ξĞ				0-1000°C	0-1600°C	
ec.				CTCS2-3*:		
ds				800-1600°C		
첫			T type	CTCT2-1*:		
ğ				0-300°C		
out		1:	Input disc	connection ch	naracteristic:	
<u>=</u>		up	scale			
		2: Input disconnection characteristic:				
		do	wnscale			
					lso available.	
					rce should be	
			nV or hig			
	Input			her (1 MΩor		
	resistance			upon power f	ailure)	
	Allowable	1 k	(Ω			
	signal source					
	resistance					
	Allowable	30 VDC continuous				
	input voltage	A temperature concer is recorded as				
	Cold junction	A temperature sensor is mounted on				
	compensatio	the dedicated terminal block unit				
	n method	(UTBA7). Built-in linearizer (up to 6 segments)				
	Linearizer				segments)	
	Output signal					
	Maxim			put: 1-5 VDC		
	Maximum	2 r	nA			
	output					
ટા	current	0.7	EVDO (T	(n.)		
tior	Minimum	U.C	S VDC (T	yp.)		
<u>.ca</u>	output					
ğ	voltage	, 7	VDC /T	(n.)		
spe	Maximum	+/	VDC (Ty	ψ. <i>)</i>		
Š	output voltage					
Output block specifications	Zero point	Δn	nrov ±E	% in terms of	input (The	
	· ·			% in terms of be varied by a		
	adjustment range			ont face.)	a ammilei OH	
0	Span	_		% of span (Th	ne range can	
	adjustment			y a trimmer o		
	range		nt face)	, a animilei 0	ii tiic pailei	
	Burnout			unscale (Po	fer to the type	
	Barriout	list		apacaie (ive	ici to the type	
	l		,			

Category	Item	Specification		
	Conversion	Within ±(0.1% FS + 0.3°C		
	accuracy	(temperature sensor accuracy) +		
		linearization accuracy) (at 25±5°C)		
		*The linearization accuracy may be		
		varied depending on the measurement span. (0.1% FS typ.)		
	Temperature	±0.2% or less of span with respect to		
	characteristic	variation of 10°C		
	Input	Downscale: during the time period		
	disconnection	until the output reaches 1 V upon		
	characteristic	disconnection with 100% input		
		Approx. input span (mV) × 0.1 sec or less		
		Upscale: during the time period until		
		the output reaches 5 V upon		
		disconnection with 0% input		
		Approx. input span (mV) × 0.1 sec or		
		less		
	Response	150 ms or less (0-90%) @ 100% step		
45	speed CMRR	input 100 db or higher (500 VAC, 50/60		
Reference performance	Civilata	Hz)		
rms	Signal	Input - first output - second output -		
erfo	isolation	power supply; isolated		
o e	Insulating	100 MΩor higher (@ 500 VDC)		
auce.	resistance	Input - first output - second output - power supply		
fere	Withstand	Input - [first output, second output,		
Rei	voltage	power supply]: 1,500 VDC; 1 min		
		First output - second output - power		
		supply: 500 VAC; 1 min		
	SWC	Compliant with ANSI/IEEE C37.90.1-1989		
	Operating	Temperature: 0-55°C		
	environment	Humidity: 90% RH or lower (no		
		condensation)		
	Power	24 VDC±10%		
	supply	MCH-in 10 40/ of autout value (char		
	Power supply	Within ±0.1% of output value (when variation = 10%)		
	sensitivity	variation – 1070)		
	Power	300-mA fuse		
	supply fuse			
	Power	DC24V - 25mA or less		
	consumption	-20 to +75°C		
	Storage temperature	-20 to +75 C		
	Applicable	Al959B (analog input module)		
	module	(= 1.3 p. 1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		
Ф	Installation	Installation on dedicated terminal		
hap	method	block unit (UTBA7)		
ഗ &	Wiring method	Wiring on dedicated terminal block		
Installation & shape	Outside	unit (UTBA7) W 19.5 × H 53 × D 84		
	dimensions	10.0 % 11 00 % D 04		
	(mm)			
	Weight	Approx. 80 g		
<u>a</u>	Housing	ABS resin (UL94 5V)		
Materia	Board	Double sided glass epoxy board		
	Damp proof	HumiSeal coating (polyurethane		
	treatment	resin, xylene, ethylbenzene)		

Table 50 CRTD* specifications

Category	Item	Specification				
Pet name		CRTD4/ CRTD5				
	Input signal		JIS resistance temperature			
		detector				
	Span		Pt (JIS '89)	CRTD4-1 1: 0-150°C	CRTD4-21: 0-300°C	
				CRTD4-3 1: 0-500°C	CRTD4-41: -50 - +100°C	
શ્		d range		CRTD4-5 1: -150 - +50°C		
ecification		Standard range	JPt (JIS '89)	CRTD5-1 1: 0-150°C	CRTD5-21: 0-300°C	
Input block specifications				CRTD5-3 1: 0-500°C	CRTD5-41: -50 - +100°C	
				CRTD5-5 1: -150 - +50°C		
				ndard range	s also	
			ilable.			
	Excitation current	Approx. 1 mA				
	Input resistance	1 MΩor higher (10 kΩ or higher upon power failure)				
	Input lead wire resistance	200	Ω or I	ower per lea	ad wire	
	Output signal	Firs	t outp	ut: 1-5 VDC		
				utput: 1-5 VI	OC .	
suc	Maximum output current	2 m		•		
icatio	Minimum output voltage	0.6	VDC (Тур.)		
speci	Maximum	+7	VDC (Гур.)		
Output block specifications	output voltage	۸۳۰	rov !	20/ of once	(The range	
	Zero point adjustment			2% of span	(The range nmer on the	
out	range			t face.)		
Out	Span			2% of span	(The range	
	adjustment				nmer on the	
	range	panel front face.)				
	Burnout	Ups	Upscale (in any case of A, B or B')			

Category	Item	Specification		
	Conversion	Within ±(0.15% FS + 0.1℃) (at		
	accuracy	25±5°C)		
	Temperature	±0.2% or less of span with respect		
	characteristic	to variation of 10°C		
	Input	Upscale: during the time period		
	disconnection	until the output reaches 5 V upon		
	characteristic	disconnection with 0% input		
		30 ms or less		
	Response	150 ms or less (0-90%) @ 100%		
	speed	step input		
	CMRR	100 db or higher (500 VAC, 50/60 Hz)		
	Signal	Input - first output - second output -		
	isolation	power supply; isolated		
e S	Insulating	100 MΩ or higher (@ 500 VDC)		
anc	resistance	Input - first output - second output -		
ш		power supply		
erfo	Withstand	Input - [first output, second output,		
e pe	voltage	power supply]: 1,500 VDC; 1 min		
nce		First output - second output - power		
ere	01110	supply: 500 VAC; 1 min		
Reference performance	SWC	Compliant with ANSI/IEEE		
	0	C37.90.1-1989		
	Operating environment	Temperature: 0-55°C		
	environment	Humidity: 90% RH or lower (no condensation)		
	Power supply	24 VDC±10%		
	Power supply	Within ±0.1% of output value (when		
	sensitivity	variation = 10%)		
	Power supply	300-mA fuse		
	fuse			
	Power	DC24V - 25mA or less		
	consumption			
	Storage	-10 - +60°C		
	temperature			
	Applicable	Al959B (analog input module)		
	module			
-	Installation	Installation on dedicated terminal		
эре	method	block unit (UTBA7)		
sh	Wiring method	Wiring on dedicated terminal block		
۸ ر	0.1.1	unit (UTBA7)		
tior	Outside	W 19.5 × H 53 × D 84		
alla	dimensions			
Installation & shape	(mm) Weight	Approx. 80 g		
드	Hot swap	OK		
	Housing	ABS resin (UL94 5V)		
Material	Board	Double sided glass epoxy board		
ate	Damp proof	HumiSeal coating (polyurethane		
Ma	treatment	resin, xylene, ethylbenzene)		
	asaanont	room, Ayiono, Guryibonzonoj		

Table 51 CCTI1 specifications

Category	Item	Specification
Pet name		CCTI1
	Input signal	AC signal
တ		CCTI1-11: AC 0-1 A
ion Sc		CCTI1-21: AC 0-5 A
blc	Input	CCTI1-11: 5 MΩ
Input block specifications	resistance	CCTI1-21: 25 MΩ
in a	Allowable	Continuous: 120% rated input
0,	input voltage	Instant: rated input × 10 (for 3 sec)
	Crest factor	3 or lower
	Output signal	First output: 1-5 VDC
		Second output: 1-5 VDC
SC	Maximum	2 mA
ţi	output current	
ica	Minimum	+1 VDC (Typ.)
ecil	output voltage	
ds	Maximum	+7 V (Typ.)
충	output voltage	
old	Zero point	Approx. ±2% of span (The range
Ħ	adjustment	can be varied by a trimmer on the
Output block specifications	range	panel front face.)
0	Span	Approx. ±2% of span (The range
	adjustment	can be varied by a trimmer on the
	range	panel front face.)
	Conversion	Within ±0.25% of maximum input
	accuracy	signal (10% or more of span at
		25±5°C)
e	Temperature	±0.2% or less of span with respect
auc	characteristic	to variation of 10°C
Ē	Response	0.4 sec or less (0-90%) @ 100%
irfo	speed	step input
b b	Input	Downscale: during the time period
JCe	disconnection	until the output reaches 10% upon
ie	characteristic	disconnection with 100% input
Reference performance		0.6 sec or less
<u>~</u>	CMRR	100 db or higher (500 VAC, 50/60
		Hz)
	Signal	Input - first output - second output -
	isolation	power supply; isolated

Category	Item	Specification	
	Insulating resistance	100 MΩ or higher (@ 500 VDC) Input - first output - second output - power supply	
	Withstand voltage	Input - [first output, second output, power supply]: 1,500 VDC; 1 min First output - second output - power supply: 500 VAC; 1 min	
ance	SWC	Compliant with ANSI/IEEE C37.90.1-1989	
Reference performance	Operating environment	Temperature: 0-55°C; Humidity: 90% RH or lower (no condensation)	
ď	Power supply	24 VDC±10%	
nce	Power supply	Within ±0.1% of output value (when	
<u>e</u>	sensitivity	variation = 10%)	
Refe	Power supply fuse	300-mA fuse	
_	Power	DC24V - 30mA or less	
	consumption	DC24V - SUITIA OF IESS	
	Storage	-20 to +75°C	
	sigunarliosate		
	mperature		
	Applicable module	Al959B (analog input module)	
	Installation	Installation on dedicated terminal	
	method	block unit (UTBA7)	
Installation & shape	Wiring method	Wiring on dedicated terminal block unit (UTBA7)	
თ ≪ბ		The shunt resistor supplied with the	
В		product should be attached to the	
lati		terminal block (with fittings A and B).	
stal	Outside	W 19.5 × H 53 × D 84	
<u>=</u>	dimensions		
	(mm)		
	Weight	Approx. 55 g	
a	Housing	ABS resin (UL94 5V)	
teri	Board	Double sided glass epoxy board	
Material	Damp proof	HumiSeal coating (polyurethane	
	treatment	resin, xylene, ethylbenzene)	

Table 52 CPTI1 specifications

Category	Item	Specification
Pet name		CPTI1
	Input signal	AC signal CPTI1-11: 0-100 VAC CPTI1-21: 0-110 VAC
cific		CPTI1-31: 0-150 VAC CPTI1-41: 0-250 VAC
Input block specifications	Input resistance Allowable input	1 M Ω or higher (upon power failure: 1 M Ω or higher) Continuous: 120% rated input
nput	voltage	Instant: rated input × 1.5 (for 5 sec)
	Crest factor	3 or lower
	Output signal	First output: 1-5 VDC Second output: 1-5 VDC
ions	Maximum output current	2 mA
ecifical	Minimum output voltage	+1 VDC (Typ.)
ock spe	Maximum output voltage	+7 V (Typ.)
Output block specifications	Zero point adjustment range	Approx. ±2% of span (The range can be varied by a trimmer on the panel front face.)
0	Span adjustment range	Approx. ±2% of span (The range can be varied by a trimmer on the panel front face.)
	Conversion accuracy	Within ±0.25% of maximum input signal (10% or more of span at 25±5°C)
ance	Temperature characteristic	±0.2% or less of span with respect to variation of 10°C
Reference performance	Response speed	0.4 sec or less (0-90%) @ 100% step input
	Input disconnection characteristic	Downscale: during the time period until the output reaches 10% upon disconnection with 100% input 0.6 sec or less
	CMRR	100 db or higher (500 VAC, 50/60 Hz)
	Signal isolation	Input - first output - second output - power supply; isolated

Cotomore	Itom	Specification
Category	Item	Specification
	Insulating resistance	100 MΩor higher (@ 500 VDC) Input - first output - second output - power supply
	Withstand voltage	Input - [first output, second output, power supply]: 1,500 VDC; 1 min First output - second output - power supply: 500 VAC; 1 min
ance	SWC	Compliant with ANSI/IEEE C37.90.1-1989
Reference performance	Operating environment	Temperature: 0-55°C; Humidity: 90% RH or lower (no condensation)
ce	Power supply	24 VDC±10%
eferer	Power supply sensitivity	Within ±0.1% of output value (when variation = 10%)
ž	Power supply fuse	300-mA fuse
	Power consumption	DC24V - 30mA or less
	Storage temperature	-20 to +75°C
	Applicable module	Al959B (analog input module)
	Installation method	Installation on dedicated terminal block unit (UTBA7)
Material Installation & shape	Wiring method	Wiring on dedicated terminal block unit (UTBA7)
		The shunt resistor supplied with the product should be attached to the terminal block (with fittings A and B).
	Outside dimensions (mm)	W 19.5 × H 53 × D 84
	Weight	Approx. 55 g
	Housing	ABS resin (UL94 5V)
	Board	Double sided glass epoxy board
	Damp proof treatment	HumiSeal coating (polyurethane resin, xylene, ethylbenzene)

Table 53 CISO8 specifications

		Table 33 Cid
Category	Item	Specification
Pet name		CISO8
Input block specifications	Input signal	0.4-2 VDC CISO8-11
	Input	1 MΩor higher
	resistance	
ndu	Allowable	30 VDC continuous max.
_ o	input voltage	
	Output signal	DC 4-20 mA
S	Maximum	750 Ω
fion	output load	DOO A (T.)
ca	Minimum	DC 0 mA (Typ.)
ecif	output current Maximum	DC 124 mA (T/m)
spe	output current	DC +24 mA (Typ.)
Output block specifications	Zero point	Approx. ±2% of span (The range
plo	adjustment	can be varied by a trimmer on the
ont	range	panel front face.)
Out	Span	Approx. ±2% of span (The range
0	adjustment	can be varied by a trimmer on the
	range	panel front face.)
	Conversion	±0.125% or less of maximum input
	accuracy	signal (at 25±5°C)
	Temperature	±0.2% or less of span with respect
	characteristic	to variation of 10°C
	Standard	13 ms or less (0-90%) @ 100%
	response time	step input
Jce	Input	Downscale: during the time period
nar	disconnection	until the output reaches 4 mA upon
forr	characteristic	disconnection with 100% input
er 1		Approx. 1.5 sec or less
e G	Output	Open collector output (maximum
anc en	disconnection	rating: 35 V, 4 mA): The transistor is
Reference per formance	characteristic	turned ON when the output falls
	Datastian	below the detection voltage.
	Detection	Approx. 2 mA
	current Detection	Approx 1 sec (0.63%)
	voltage time	Approx. 1 sec (0-63%)
	constant	
	CMRR	100 db or higher (500 VAC, 50/60
	Civil (i C	Hz)
		ı · ·=,

Category	Item	Specification
	Signal	Input - output - power supply;
	isolation	isolated
	Insulating	100 MΩ or higher (@ 500 VDC)
	resistance	Input - output - power supply
	Withstand	Input - power supply : 500 VAC; 1
	voltage	min
		Output - [input, power supply]: 1,500 VDC; 1 min
9	SWC	Compliant with ANSI/IEEE
Jan	00	C37.90.1-1989
orn	Operating	Temperature: 0-55°C
i i	environment	Humidity: 90% RH or lower (no
ď		condensation)
Reference per formance	Power supply	24 VDC±10%
ere	Power supply	Within ±0.1% of output value (when
Zef	sensitivity	variation = 10%)
"	Power supply	300-mA fuse
	fuse	
	Power	DC24V - 45mA or less
	consumption	
	Storage	-20 to +75°C
	temperature	
	Applicable	AO969B (analog output module)
	module	
0	Installation	Installation on dedicated terminal
ape	method	block unit (UTBA8)
Installation & shape	Wiring method	Wiring on dedicated terminal block
	Outside	unit (UTBA8) W 19.5 × H 53 × D 84
	dimensions	W 19.5 × H 55 × D 64
	(mm)	
	Weight	Approx. 80 g
	Hot swap	OK
Material	Housing	ABS resin (UL94 5V)
	Board	Double sided glass epoxy board
	Damp proof	HumiSeal coating (polyurethane
	treatment	resin, xylene, ethylbenzene)
		, ,,,

■Marshaling Unit Specifications

Table 54 UMAS3C specifications

Item	Specification
Pet name	UMAS3C
Name	Marshaling unit (for VLCPX1/VLCPX2)
Applicable base unit	BU928F
Applicable terminal	VTBUX1, VTBUX5
block unit	
Terminal block	CN1, 2: For BU928F connection
connection	CN11, 13: For VTBUX1 connection
connector	Cn12, 14: For VTBUX5 connection
Applicable cable	Cable for BU928F (3Y8C1573G001)
Outside dimensions	200W×274H×25D
(mm)	
Weight	1.2kg or less

Table 55 UMAS4C specifications

Item	Specification
Pet name	UMAS4C
Name	Marshaling unit (for VLCPX4)
Applicable base unit	BU928F
Applicable terminal	VTBUX8, VTBUX5
block unit	
Terminal block	CN1A, 1 B: For BU928F connection
connection	CN11A, 11B: For VTBUX8 connection
connector	CN13A, 16A, 13B, 16B:
	For VTBUX5 connection
Applicable cable	Cable for BU928F (3Y8C1573G001)
Outside dimensions	200W×274H×25D
(mm)	
Weight	1.2kg or less

■Outside Dimensions

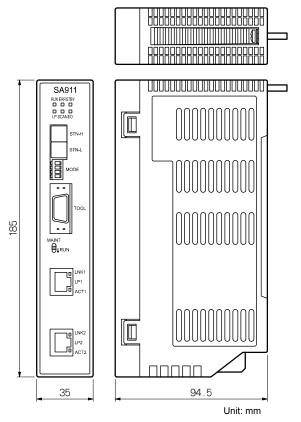


Fig. 5 SA911/ SA931/ SA941 outside dimension

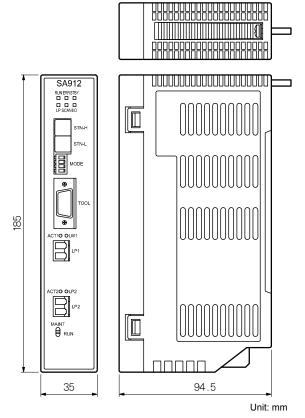


Fig. 6 SA912 outside dimension

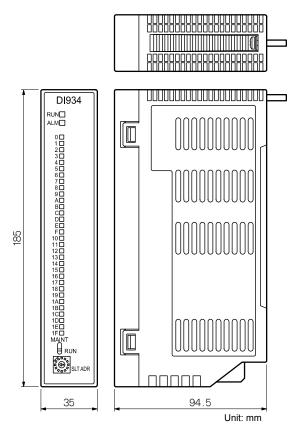


Fig. 7 I/O module outside dimension

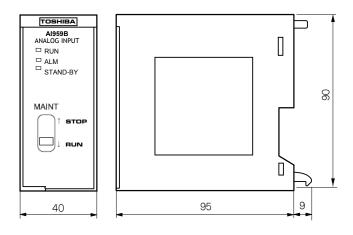


Fig. 8 Al959B outside dimension

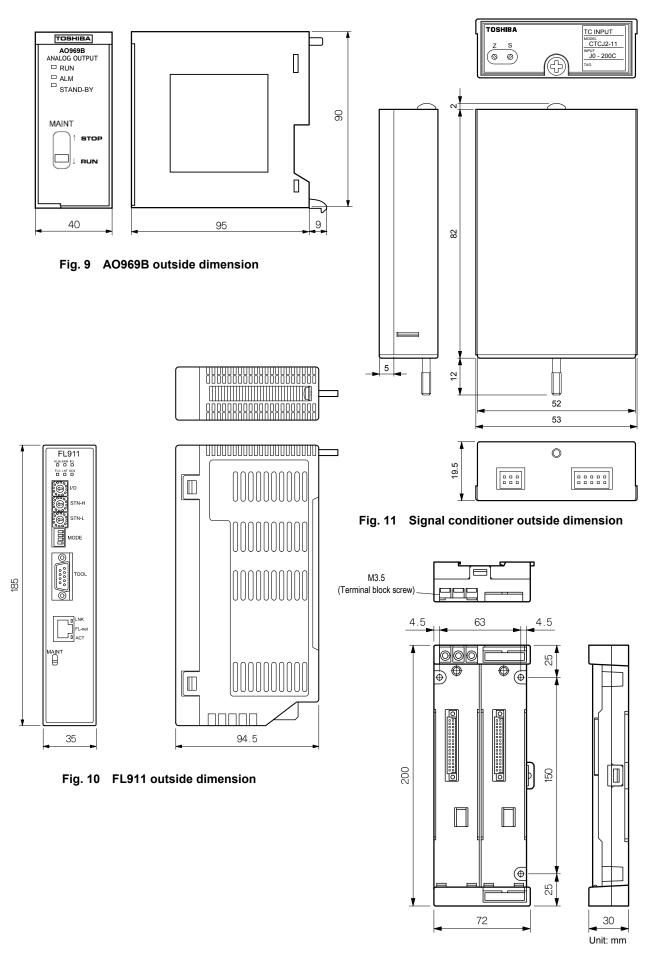
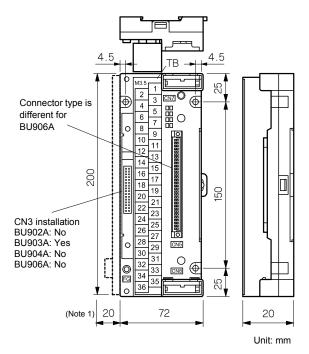


Fig. 12 BU901 outside dimension



(Note 1) The common bar/short bar can be attached to BU902A/903A/904A/906A, however, make sure to secure this wiring space because the maximum of 20mm of wiring terminal will protrude to the left.

Fig. 13 BU902A/903A/904A/906A outside dimension

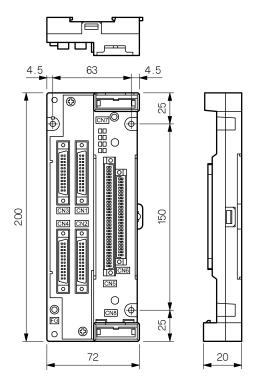


Fig. 14 BU905 outside dimension

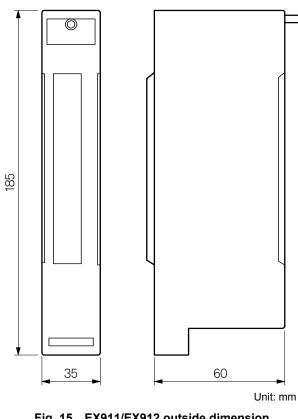


Fig. 15 EX911/EX912 outside dimension

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