



200SMART PLC

Product Catalog

E7-200 SMART

E5-200 SMART

E3-200 SMART

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About us

Shenzhen Huceen Automation Technology Co., Ltd. is specialized in industrial automation products R & D, production, sales and technical services, We rely on professional R & D team and years of industry technology accumulation, to supply high-quality, high-performance, highly competitive automation products and total solutions for customers.

Our company has HUCEEN brand E7 H7 series PLC, Hpanel series HMI, HBox Internet of Things module and HCloud industrial cloud platform and other products.It provides system solutions for auto industry, electric power, chemical industry, metallurgy, environmental protection, water treatment, new energy, rail transportation and other industries, and it is widely used in electronic equipment, plastic machinery, packaging machinery, ceramic machinery, textile machinery, HVAC equipment, medical equipment, CNC equipment and many other industries.

We adhere to the business philosophy of integrity and truth-seeking. We build on the industrial automation with our own intellectual property rights, and promote the competitiveness and profitability of our customers. We work with our customers to create a win-win situation, realize enterprise value and customer value grow together.

Mission

To help customers become industry leaders

Vision

To become a respected and global supplier of industrial automation products and solutions

Value

Integrity, specialty, innovation, sharing

Operation philosophy

Improve customers competitiveness continuously , we not only provide excellent products and services, but also supply customers with more industry knowledge and more professional technical solutions.

700K

Quantity of shipment

30+

Cooperated Listed Company

80+

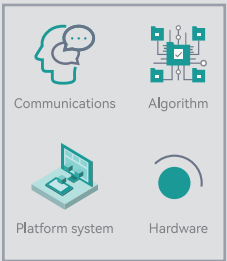
Sales and service network



National High-tech Enterprise



30+ Technology patents



4 core technologies



Huceen product system

PLC

200Smart

E7 200Smart

E5 200Smart

E3 200Smart

H7-1200

Distributed Remote I/O



云组态

客户管理

统计分析

数据报表

HCloud

Internet of Things

H-Box

Smart Box

IoT PLC E7 200 Smart

HCloud industrial cloud platform

HMI

Hpanel 7-inch

Hpanel 10-inch



CATALOG



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E-200 Smart CPU

E 200SMART PLC has three different types of CPUs: Standard Edition, Basic Edition, Economy Edition, fully meeting the various needs of different industries, different customers, and different equipment.
Use "STEP 7-MicroWIN SMART" software for programming, and support editing and forced functions during operation.

SERIES	E7 200Smart CPU Standard Edition			E5 200Smart CPU Basic Edition		E3 200Smart CPU Economy Edition
	ST20	ST30/40/60	SR20/30/40/60	ST20/30/40/60	SR20/30/40/60	SR20/30/40/60
High-speed counter	4 X 200K					
High speed pulse	2 X 100K	3 X 100K	—	2 X 100K	—	—
Ethernet interface				1		
RS485 interface	2 on the main body (up to 3 using 5CM01)			1 on the main body (up to 2 using 5CM01)		1 on the main body
Extension modules	6 E modules					—
Expansion DB board	1					—
RTC	Built-in super capacitor, supports 7 days of retention; using 5BA01, supports 1 year of retention					—

E7 200 Smart CPU Standard Edition

Discrete control process control three-axis motion control

It is fully functional. In addition to general data processing functions, it also has special functions such as three-axis motion control, 32 Ethernet links, DB9 dual serial ports, remote debugging/edge computing, etc. It supports expansion modules and expansion DB boards;

Three-axis motion control, six-channel high-speed counter

Support PID wizard

Support RTC clock

Support expansion of 6 E 200SMART modules and E 200SMART IO signal boards

Support TF card to upgrade firmware and download CPU program


Supports DBLINK board, can be used as IoT PLC on the cloud, supports remote debugging download/remote operation and maintenance/edge computing and other functions

DB9 integrates 2 RS485 ports, supports modbus/PPI/free port communication protocols, and can be expanded to 3 RS485 ports at most when used with 5CM01

Support 4 analog inputs/ 2 analog outputs

Support system/ subroutine hidden encryption

Integrated 1 RJ45 network port, supports free protocol (MbusTCP), GET/PUT and HMI, supports program upload and download, up to 32 links



E5 200 Smart CPU Basic Edition

Discrete control process control

The functions are basically complete. In addition to the basic data processing function, it also has a 4-way high-speed counting function; it supports expansion modules and expansion DB boards;

Support system/ subroutine hidden encryption

DB9 integrates 1 RS485 port, supports modbus/PPI/free port communication protocol, and can be expanded to 2 RS485 ports with 5CM01

Integrated 1 RJ45 network port, supports free protocol (MbusTCP), GET/PUT and HMI, supports program upload and download, up to 5 links

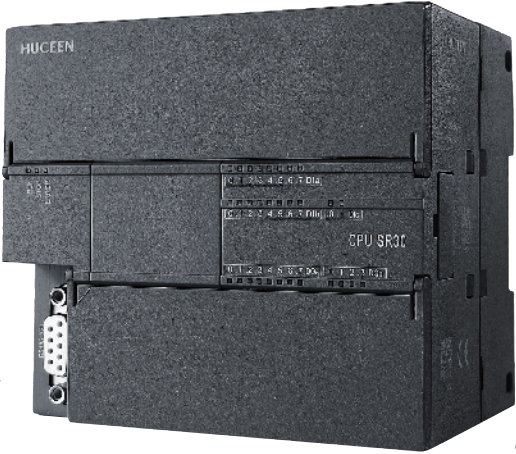
Support 4 single-ended counters and 1 A/B phase counter

Support PID wizard

Support RTC clock

Support expansion of 6 E 200SMART modules and E 200SMART IO signal boards

Support TF card to upgrade firmware and download CPU program



E3 200Smart CPU Economy Edition

Discrete control process control

The functions are relatively simple, and can perform functions such as logic control and data calculation. It does not support expansion modules, RTC clocks, and expansion DB boards.

Support system/subroutine hidden encryption

Integrated 1 DB9-RS485 port, supports modbus/PPI/freeport communication protocols


Maximum program capacity can reach 30K

Integrated with 1 RJ45 port, supports free protocol (MbusTCP), GET/PUT and HMI, supports program upload and download, and shares 5 links

Support 4 single-ended counters and 1 A/B phase counter

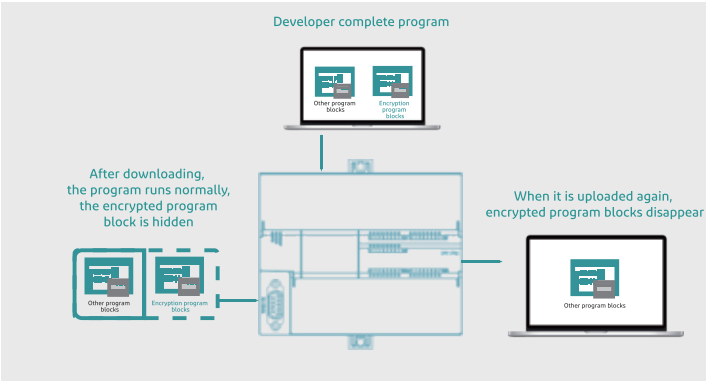
Support PID wizard

Support TF card to upgrade firmware and download CPU program



E 200 SMART PLC innovative functions

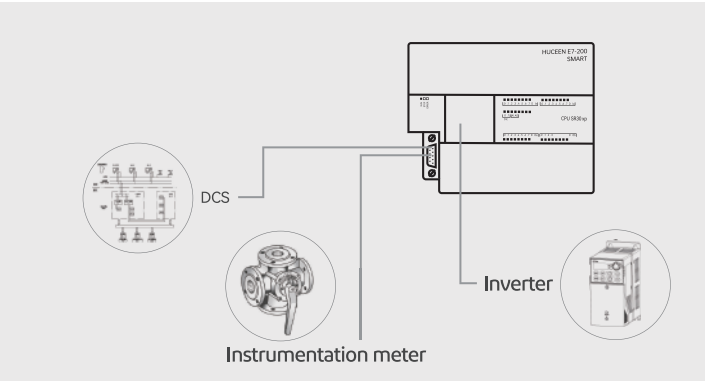
Hidden encryption



E 200 SMART CPU supports the subroutine's custom encryption function - hidden encryption. After the encrypted subroutine is downloaded for the first time, it will enter the hidden mode and the CPU can run normally. However, if the program is uploaded, the custom encrypted subroutine will not be visible, which better protects the developer's intellectual property rights.

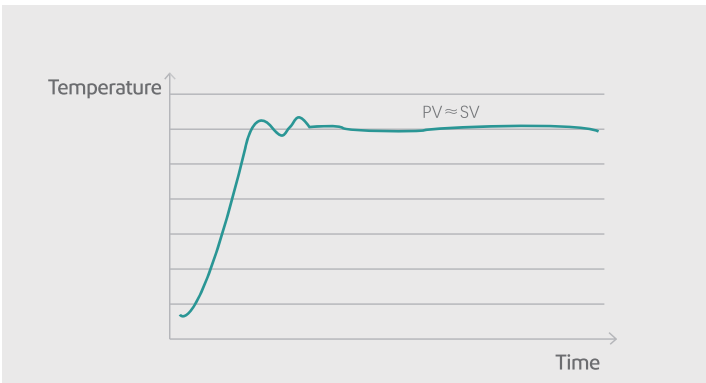
- After the subprogram is encrypted, it cannot be uploaded or copied.
- After the subroutine is encrypted, it can only be deleted by "Clear"

Three serial ports



E7 200 SMART CPU integrates 2 RS485 ports, supports MODBUS/PPI/Freeport communication protocols, and supports Huceen communication board expansion, which can support up to 3 RS485 ports, and can meet customers' application needs for multiple serial ports.

PID self-tuning (temperature control)



CPU with integrated temperature control featuring 16-channel PID self-tuning algorithm. The user only needs to set the target temperature value and press the start button, and the CPU will automatically perform PID tuning calculations to achieve precise control. The PID control output supports PWN or analog, bipolar output, can control heating and cooling, and can be applied to a variety of temperature control occasions.

E 200SMART PLC features

Perfect compatibility, easy to use

The CPU is programmed using "STEP7 MicroWINSMART" software, can run smoothly on Windows 7 or Windows 10 operating systems, supports LAD, STL, and FBD programming languages, and the wiring method is consistent with the S7 series.

Ethernet interconnection is economical and convenient

The CPU is equipped with an Ethernet interface as standard, which integrates powerful Ethernet communication functions. Users can download programs to the PLC via ordinary network cables, which is convenient and fast. It also supports Ethernet protocols S7 and ModbusTCP protocols.

Three-axis pulse, free movement

The CPU integrates up to 3 high-speed pulse outputs with a frequency of up to 100Khz, supports PWN/PTO output mode and a variety of motion modules, and can freely set the motion envelope. With the easy-to-use wizard setting function, it can quickly realize the functions of equipment speed regulation and positioning.

Hidden encryption protects developers

Based on the underlying encryption of the system, the intellectual property of developers is protected. Developers customize the program blocks that need to be encrypted. After encryption, the program is downloaded to the PLC and is "hidden", and cannot be uploaded or copied.


Universal SD card/ Fast update

The CPU body is integrated with a MicroSD card slot, and the program can be updated using a common MicroSD card in the market, that is greatly facilitates the service support of customer engineers to end users.

Intelligent slave with Profinet protocol

Supports operation as a Profinet slave with up to 128 bytes of input/output space, Compatible with S7-200SMART/1200/1500/400 as Profinet masters, Supports bus cycle times as fast as 2 ms.



E7 SMART CPU

Model No.	CPU SR20 AC/DC/RLY	CPU ST20 DC/DC/DC
Order No.	E7 288 1SR20-0AA1	E7 288 1ST20-0AA1
Picture		
Product Description	Standard Edition CPU SR20, Relay	Standard Edition CPU ST20, Transistor
Standard		
Dimension (W×H×D)	90×100×81mm	
Power Consumption	14W	20W
Available Current (SM bus)	max. 1400mA	
Available Current (24V DC)	max. 300mA	
CPU Features		
Program Memory (KB)	30	
Data Memory (KB)	12	
Retentive Memory (KB)	12	
Data Preservation	Permanent	
Built-in I/O		
.Digital Input/Output	12 input /8 output	
.Analog Input/Output	—	
Process Image Size	256-bit input (I) /256-bit output (Q)	
Analog Image	56 words input (AI) /56 words output (AQ)	
Expansion Modules Allowed	up to 6 modules	
High speed Counter (total)	6 in total	
.Single Phase	4 x 200KHz + 2 x 30KHz	
.Quadrature Phase	2 x 100KHz + 2 x 20KHz	
Pulse Output	—	2 x 100K Hz
Timer	Non-holding (or not retained) (TON, TOF):192 Holding (or retained) : 64	
Counters	256	
Bit Memory (M)	256 bits	
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms	
Interrupt Edge	4 up and 4 down	
Real Time Clock	Usually 7 days, at least 6 days at 25°C	
Memory Card	Support	
Signal Expansion Board	Support	
Performance/ Processing Time		
.Boolean	0.35 μs /instruction	
.Moving Word Operations	1.2 μs /instruction	
.Floating Point	1.7 μs /instruction	

E7 SMART CPU

Model No.	CPU SR20 AC/DC/RLY		CPU ST20 DC/DC/DC
Order No.	E7 288 1SR20-0AA1		E7 288 1ST20-0AA1
Communications Built-in			
Ports	Ethernet: 1	Body serial port: 2 (DB9-RS485)	DB board serial port: 1 (CM01-RS485-RS232)
HMI Connections	Ethernet: 8 connections		Serial port: 4 connections
Programming (PG)	1 connection		
Ethernet			
.CPU (PUT/GET)	8 clients and 8 servers connections		
.Open type communication	8 active and 8 passive connections		
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s		
Isolation	Ethernet: transformer isolation, 1500V DC		RS485: None
Type of cable	Ethernet: CAT5e shielded cable		RS485: PROFIBUS network cable
Power			
Input Voltage	85-264V AC		20.4-28.8V DC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC	190mA (w/o 300mA power supply output of the sensor) when CPU only at 24V AC 470mA (w/ 300mA power supply output of the sensor) when CPU only at 24V AC	
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC		680mA at 24V AC
Inrush Current (Max)	9.3A at 264V AC		11.7A at 28.8V DC
Sensor Voltage	20.4-28.8V DC		
Isolation			
Input to logic	1500V AC, 1.0min		No quarantine
Sensor to logic	Not isolated		
Digital Input			
Number of Inputs	12		
Input Type	The sinking /sourcing type (IEC type 1 sinking)		The sinking /sourcing type (IEC type1 sinking, excepting I0.0 to I0.3)
Allowable Continuous Voltage	Max. 30V DC		
Surge Voltage(Max)	35V DC, lasting 0.5s		35V DC, lasting 0.5s
Logic 1 Signal (Min)	15V DC when the current is 2.5mA		1the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA		the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min		
Isolation Group	1		
Filter Time	Each channel can be separately selected (point I0.0 to I1.3): 0.2, 0.4, 0.8, 1.6, 3.2, 6.4 and 12.8 μs; 0.2, 0.4, 0.8, 1.6,3.2, 6.4 and 12.8ms;		
Digital Input			
Number of Inputs	8		
Input Type	Relay, dry contact		Solid-MOSFET (source-type)
Voltage Range	5-30V DC or 5-250V AC		20.4-28.8V DC
Surge Current (Max)	7A when power on		8A, max. lasting 100ms
Rated Current per each point (Max)	2.0A		0.5A
Switching Frequency (Max)	Not recommended		—
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms		from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs
Turn-off Delay (Qa.4-Qa.7)	Up to 10ms		from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs
Optical Isolation (field side and logic side)	500V AC lasting 1.0min		
Contact Lifetime			
.Non-loaded	10,000,000 cycles		—
.Rated load	100,000 cycles		—

E7 SMART CPU

Model No.	CPU SR20XP AC/DC/RLY		CPU ST20XP DC/DC/DC
Order No.	E7 288-1SR20-XPA1		E7 288-1ST20-XPA1
Picture			
Product Description	Standard CPU SR20XP, Relay, integrated 4 input/2 output analog channels		Standard CPU ST20XP, Transistor, integrated 4 input/2 output analog channels
Standard			
Dimension (W×H×D)	110×100×81mm		
Power Consumption	23W		18W
Available Current (SM bus)	max. 1400mA		
Available Current (24V DC)	max. 300mA		
CPU Features			
Program Memory (KB)	30		
Data Memory (KB)	12		
Retentive Memory (KB)	12		
Data Preservation	Permanent		
Built-in I/O			
.Digital Input/Output	12 input /8 output		
.Analog Input/Output	4 input /2 output		
Process Image Size	256-bit input (I) /256-bit output (Q)		
Analog Image	56 words input (AI) /56 words output (AQ)		
Expansion Modules Allowed	up to 6 modules		
High speed Counter (total)	6 in total		
.Single Phase	4 x 200KHz + 2 x 30KHz		
.Quadrature Phase	2 x 100KHz + 2 x 20KHz		
Pulse Output	—	2 x 100K Hz	
Timer	Non-holding (or not retained) (TON, TOF):192 Holding (or retained) : 64		
Counters	256		
Bit Memory (M)	256 bits		
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms		
Interrupt Edge	4 up and 4 down		
Real Time Clock	Usually 7 days, at least 6 days at 25°C		
Memory Card	Support		
Signal Expansion Board	Support		
Performance/Processing Time			
.Boolean	0.35 μs /instruction		
.Moving Word Operations	1.2 μs /instruction		
.Floating Point	1.7 μs /instruction		
Communications Built-in			
Ports	Ethernet:1	Body serial port: 2 (DB9-RS485)	DB board serial port: 1 (CM01-RS485-RS232)
HMI Connections	Ethernet: 8 connections		Serial port: 4 connections
Programming (PG)	1 connection		
Ethernet			
.CPU (PUT/GET)	8 clients and 8 servers connections		
.Open type communication	8 active and 8 passive connections		
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s		
Isolation	Ethernet: transformer isolation, 1500V DC		RS485: None
Type of cable	Ethernet: CAT5e shielded cable		RS485: PROFIBUS network cable
Power			
Input Voltage	85-264V AC		20.4-28.8V DC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC		190mA (w/o 300mA power supply output of the sensor) when CPU only at 24V AC 470mA (w/ 300mA power supply output of the sensor) when CPU only at 24V AC

E7 SMART CPU

Model No.	CPU SR20XP AC/DC/RLY		CPU ST20XP DC/DC/DC
Order No.	E7 288-1SR20-XPA1		E7 288-1ST20-XPA1
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC		680mA at 24V AC
Inrush Current (Max)	8.9A at 264V AC		6A at 28.8V DC
Sensor Voltage	20.4-28.8V DC		
Isolation			
Input to logic	1500V AC, 1.0min	No quarantine	
Sensor to logic	Not isolated		
Digital Input			
Number of Inputs	12		
Input Type	The sinking /sourcing type (IEC type 1 sinking)	The sinking /sourcing type (IEC type1 sinking, excepting I0.0 to I0.3)	
Allowable Continuous Voltage	Max. 30V DC		
Surge Voltage(Max)	35V DC, lasting 0.5s		
Logic 1 Signal (Min)	15V DC when the current is 2.5mA	1the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA	
Logic 0 Signal (Max)	5V DC when the current is 1mA	the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA	
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min		
Isolation Group	1		
Filter Time	Each channel can be separately selected (point I0.0 to I1.5): 0.2, 0.4, 0.8, 1.6, 3.2, 6.4 and 12.8 μs; 0.2, 0.4, 0.8, 1.6,3.2, 6.4 and 12.8ms;		
Digital Input			
Number of Inputs	8		
Input Type	Relay, dry contact	Solid-MOSFET (source-type)	
Voltage Range	5-30V DC or 5-250V AC	20.4-28.8V DC	
Surge Current (Max)	7A when power on	8A, max. lasting 100ms	
Rated Current per each point (Max)	2.0A	0.5A	
Switching Frequency (Max)	Not recommended	—	
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms	from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs	
Turn-off Delay (Qa.4-Qa.7)	Up to 10ms	from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs	
Optical Isolation (field side and logic side)	500V AC lasting 1.0min		
Contact Lifetime			
.Non-loaded	10,000,000 cycles	—	
.Rated load	100,000 cycles	—	
Analog Input			
Number of Inputs	4	4	
Input Type	Voltage or current: 2 can be selected as a group		
Input Range	current: 0-20mA;Voltage: 0-10V		
resolution ratio	Voltage mode: 12bits; Current mode: 12bits		
accuracy	Voltage mode: Typical, 25°: ±0.3%FS; Worst case, from 0 to 55°: ±0.4%FS Current mode: Typical, 25°: ±0.5%FS; Worst case, from 0 to 55°: ±0.6%FS		
Analog-to-digital switching time	50mS(50Hz)		
Analog Output			
Number of Outputs	2	2	
Output Type	Voltage or current		
Output Range	current: 0-20mA;Voltage: 0-10V		
resolution ratio	Voltage mode: 11bits; Current mode: 11bits		
accuracy	Typical, 25°: ±0.5%/±1.0%Full scale range; Worst case, from 0 to 55°: ±0.5%/±1.0%Full scale range		
Diagnose	Voltage mode: Upflow/underflow; 24VDC low voltage Current mode: Upflow/underflow; 24VDC low voltage		
Cable length(max)	100m, Shielded twisted pair		

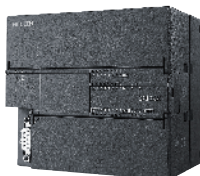
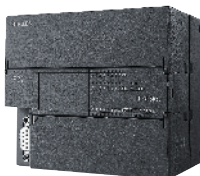
E7 SMART CPU

Model No.	CPU SR30 AC/DC/RLY	CPU ST30 DC/DC/DC
Order No.	E7 288-1SR30-0AA1	E7 288-1ST30-0AA1
Picture		
Product Description	Standard Edition CPU SR30, Relay	Standard Edition CPU ST30, Transistor
Standard		
Dimension (W×H×D)	110×100×81mm	
Power Consumption	23W	18W
Available Current (SM bus)	max. 1400mA	
Available Current (24V DC)	max. 300mA	
CPU Features		
Program Memory (KB)	36	
Data Memory (KB)	16	
Retentive Memory (KB)	12	
Data Preservation	Permanent	
Built-in I/O		
.Digital Input/Output	12 input /8 output	
.Analog Input/Output	—	
Process Image Size	256-bit input (I) /256-bit output (Q)	
Analog Image	56 words input (AI) /56 words output (AQ)	
Expansion Modules Allowed	up to 6 modules	
High speed Counter (total)	6 in total	
.Single Phase	4 x 200KHz + 2 x 30KHz	
.Quadrature Phase	2 x 100KHz + 2 x 20KHz	
Pulse Output	—	3 x 100K Hz
Timer	Non-holding (or not retained) (TON, TOF):192	
	Holding (or retained) : 64	
Counters	256	
Bit Memory (M)	256 bits	
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms	
Interrupt Edge	4 up and 4 down	
Real Time Clock	Usually 7 days, at least 6 days at 25°C	
Memory Card	Support	
Signal Expansion Board	Support	
Performance/ Processing Time		
.Boolean	0.35 μs /instruction	
.Moving Word Operations	1.2 μs /instruction	
.Floating Point	1.7 μs /instruction	

E7 SMART CPU

Model No.	CPU SR30 AC/DC/RLY		CPU ST30 DC/DC/DC
Order No.	E7 288-1SR30-0AA1		E7 288-1ST30-0AA1
Communications Built-in			
Ports	Ethernet: 1	Body serial port: 2 (DB9-RS485)	DB board serial port: 1 (CM01-RS485-RS232)
HMI Connections	Ethernet: 8 connections		Serial port: 4 connections
Programming (PG)	1 connection		
Ethernet			
.CPU (PUT/GET)	8 clients and 8 servers connections		
.Open type communication	8 active and 8 passive connections		
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s		
Isolation	Ethernet: transformer isolation, 1500V DC		RS485: None
Type of cable	Ethernet: CAT5e shielded cable		RS485: PROFIBUS network cable
Power			
Input Voltage	85-264V AC		20.4-28.8V DC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC	190mA (w/o 300mA power supply output of the sensor) when CPU only at 24V AC 470mA (w/ 300mA power supply output of the sensor) when CPU only at 24V AC	
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC		680mA at 24V AC
Inrush Current (Max)	8.9A at 264V AC		6A at 28.8V DC
Sensor Voltage	20.4-28.8V DC		
Isolation			
Input to logic	1500V AC, 1.0min		No quarantine
Sensor to logic	Not isolated		
Digital Input			
Number of Inputs	18		
Input Type	The sinking /sourcing type (IEC type 1 sinking)		The sinking /sourcing type (IEC type1 sinking, excepting I0.0 to I0.3)
Allowable Continuous Voltage	Max. 30V DC		
Surge Voltage(Max)	35V DC, lasting 0.5s		
Logic 1 Signal (Min)	15V DC when the current is 2.5mA		the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA		the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min		
Isolation Group	1		
Filter Time	Each channel can be separately selected (point I0.0 to I1.5): 0.2, 0.4, 0.8, 1.6, 3.2, 6.4 and 12.8μs; 0.2, 0.4, 0.8, 1.6,3.2, 6.4 and 12.8ms; Each channel can be separately selected (I1.6 and larger): 0, 6.4, 12.8ms.		
Digital Input			
Number of Inputs	12		
Input Type	Relay, dry contact		Solid-MOSFET (source-type)
Voltage Range	5-30V DC or 5-250V AC		20.4-28.8V DC
Surge Current (Max)	7A when power on		8A, max. lasting 100ms
Rated Current per each point (Max)	2.0A		0.5A
Switching Frequency (Max)	Not recommended		—
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms		from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs
Turn-off Delay (Qa.4-Qb.3)	Up to 10ms		from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs
Optical Isolation (field side and logic side)	500V AC lasting 1.0min		
Contact Lifetime			
.Non-loaded	10,000,000 cycles		—
.Rated load	100,000 cycles		—

E7 SMART CPU

Model No.	CPU SR30XP AC/DC/RLY		CPU ST30XP DC/DC/DC
Order No.	E7 288-1SR30-XPA1		E7 288-1ST30-XPA1
Picture			
Product Description	Standard CPU SR30XP, Relay, integrated 4 input/ 2 output analog channels		Standard CPU ST30XP, Transistor, integrated 4 input/ 2 output analog channels
Standard			
Dimension (W×H×D)	125×100×81mm		
Power Consumption	23W		18W
Available Current (SM bus)	max. 1400mA		
Available Current (24V DC)	max. 300mA		
CPU Features			
Program Memory (KB)	36		
Data Memory (KB)	16		
Retentive Memory (KB)	12		
Data Preservation	Permanent		
Built-in I/O			
.Digital Input/Output	12 input /8 output		
.Analog Input/Output	4 input /2 output		
Process Image Size	256-bit input (I) /256-bit output (Q)		
Analog Image	56 words input (AI) /56 words output (AQ)		
Expansion Modules Allowed	up to 6 modules		
High speed Counter (total)	6 in total		
.Single Phase	4 x 200KHz + 2 x 30KHz		
.Quadrature Phase	2 x 100KHz + 2 x 20KHz		
Pulse Output	—		3 x 100K Hz
Timer	Non-holding (or not retained) (TON, TOF):192		
	Holding (or retained) : 64		
Counters	256		
Bit Memory (M)	256 bits		
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms		
Interrupt Edge	4 up and 4 down		
Real Time Clock	Usually 7 days, at least 6 days at 25°C		
Memory Card	Support		
Signal Expansion Board	Support		
Performance/ Processing Time			
.Boolean	0.35 μs /instruction		
.Moving Word Operations	1.2 μs /instruction		
.Floating Point	1.7 μs /instruction		
Communications Built-in			
Ports	Ethernet: 1	Body serial port: 2 (DB9-RS485)	DB board serial port: 1 (CM01-RS485-RS232)
HMI Connections	Ethernet: 8 connections		Serial port: 4 connections
Programming (PG)	1 connection		
Ethernet			
.CPU (PUT/GET)	8 clients and 8 servers connections		
.Open type communication	8 active and 8 passive connections		
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s		
Isolation	Ethernet: transformer isolation, 1500V DC		RS485: None
Type of cable	Ethernet: CAT5e shielded cable		RS485: PROFIBUS network cable
Power			
Input Voltage	85-264V AC		20.4-28.8V DC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC		190mA (w/o 300mA power supply output of the sensor) when CPU only at 24V AC 470mA (w/ 300mA power supply output of the sensor) when CPU only at 24V AC

E7 SMART CPU

Model No.	CPU SR30XP AC/DC/RLY		CPU ST30XP DC/DC/DC	
Order No.	E7 288-1SR30-XPA1		E7 288-1ST30-XPA1	
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC		680mA at 24V AC	
Inrush Current (Max)	8.9A at 264V AC		6A at 28.8V DC	
Sensor Voltage	20.4-28.8V DC			
Isolation				
Input to logic	1500V AC, 1.0min		No quarantine	
Sensor to logic	Not isolated			
Digital Input				
Number of Inputs	18			
Input Type	The sinking /sourcing type (IEC type 1 sinking)		The sinking /sourcing type (IEC type1 sinking, excepting I0.0 to I0.3)	
Allowable Continuous Voltage	Max. 30V DC			
Surge Voltage(Max)	35V DC, lasting 0.5s			
Logic 1 Signal (Min)	15V DC when the current is 2.5mA		1the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA	
Logic 0 Signal (Max)	5V DC when the current is 1mA		the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA	
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min			
Isolation Group	1			
Filter Time	Each channel can be separately selected (point I0.0 to I1.5): 0.2, 0.4, 0.8, 1.6, 3.2, 6.4 and 12.8μs; 0.2, 0.4, 0.8, 1.6,3.2, 6.4 and 12.8ms; Each channel can be separately selected (I1.6 and larger): 0, 6.4, 12.8ms.			
Digital Input				
Number of Inputs	12			
Input Type	Relay, dry contact		Solid-MOSFET (source-type)	
Voltage Range	5-30V DC or 5-250V AC		20.4-28.8V DC	
Surge Current (Max)	7A when power on		8A, max. lasting 100ms	
Rated Current per each point (Max)	2.0A		0.5A	
Switching Frequency (Max)	Not recommended		—	
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms		from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs	
Turn-off Delay (Qa.4-Qb.3)	Up to 10ms		from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs	
Optical Isolation (field side and logic side)	500V AC lasting 1.0min			
Contact Lifetime				
.Non-loaded	10,000,000 cycles		—	
.Rated load	100,000 cycles		—	
Analog Input				
Number of Inputs	4		4	
Input Type	Voltage or current: 2 can be selected as a group			
Input Range	current: 0-20mA;Voltage: 0-10V			
resolution ratio	Voltage mode: 12bits; Current mode: 12bits			
accuracy	Voltage mode: Typical, 25°: ±0.3%FS; Worst case, from 0 to 55°: ±0.4%FS Current mode: Typical, 25°: ±0.5%FS; Worst case, from 0 to 55°: ±0.6%FS			
Analog-to-digital switching time	50mS(50Hz)			
Analog Output				
Number of Outputs	2		2	
Output Type	Voltage or current			
Output Range	current: 0-20mA;Voltage: 0-10V			
resolution ratio	Voltage mode: 11bits; Current mode: 11bits			
accuracy	Typical, 25°: ±0.5%/±1.0%Full scale range; Worst case, from 0 to 55°: ±0.5%/±1.0%Full scale range			
Diagnose	Voltage mode: Upflow/underflow; 24VDC low voltage Current mode: Upflow/underflow; 24VDC low voltage			
Cable length(max)	100m, Shielded twisted pair			

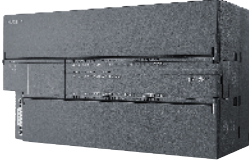
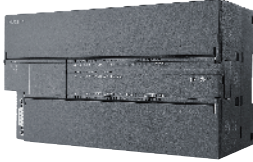
E7 SMART CPU

Model No.	CPU SR40 AC/DC/RLY	CPU ST40 DC/DC/DC
Order No.	E7 288-1SR40-0AA1	E7 288-1ST40-0AA1
Picture		
Product Description	Standard Edition CPU SR40, Relay	Standard Edition CPU ST40, Transistor
Standard		
Dimension (W×H×D)	125×100×81mm	
Power Consumption	23W	18W
Available Current (SM bus)	max. 1400mA	
Available Current (24V DC)	max. 300mA	
CPU Features		
Program Memory (KB)	42	
Data Memory (KB)	20	
Retentive Memory (KB)	12	
Data Preservation	Permanent	
Built-in I/O		
.Digital Input/Output	24 input /16 output	
.Analog Input/Output	—	
Process Image Size	256-bit input (I) /256-bit output (Q)	
Analog Image	56 words input (AI) /56 words output (AQ)	
Expansion Modules Allowed	up to 6 modules	
High speed Counter (total)	6 in total	
.Single Phase	4 x 200KHz + 2 x 30KHz	
.Quadrature Phase	2 x 100KHz + 2 x 20KHz	
Pulse Output	—	3 x 100K Hz
Timer	Non-holding (or not retained) (TON, TOF):192	
	Holding (or retained) : 64	
Counters	256	
Bit Memory (M)	256 bits	
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms	
Interrupt Edge	4 up and 4 down	
Real Time Clock	Usually 7 days, at least 6 days at 25°C	
Memory Card	Support	
Signal Expansion Board	Support	
Performance/ Processing Time		
.Boolean	0.35 μs /instruction	
.Moving Word Operations	1.2 μs /instruction	
.Floating Point	1.7 μs /instruction	

E7 SMART CPU

Model No.	CPU SR40 AC/DC/RLY	CPU ST40 DC/DC/DC
Order No.	E7 288-1SR40-0AA1	E7 288-1ST40-0AA1
Communications Built-in		
Ports	Ethernet: 1 Body serial port: 2 (DB9-RS485) DB board serial port: 1 (CM01-RS485-RS232)	
HMI Connections	Ethernet: 8 connections Serial port: 4 connections	
Programming (PG)	1 connection	
Ethernet		
.CPU (PUT/GET)	8 clients and 8 servers connections	
.Open type communication	8 active and 8 passive connections	
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s	
Isolation	Ethernet: transformer isolation, 1500V DC RS485: None	
Type of cable	Ethernet: CAT5e shielded cable RS485: PROFIBUS network cable	
Power		
Input Voltage	85-264V AC	20.4-28.8V DC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC	190mA (w/o 300mA power supply output of the sensor) when CPU only at 24V AC 470mA (w/ 300mA power supply output of the sensor) when CPU only at 24V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC	680mA at 24V AC
Inrush Current (Max)	16.3A at 264V AC	11.7A at 28.8V DC
Sensor Voltage	20.4-28.8V DC	
Isolation		
Input to logic	1500V AC, 1.0min	No quarantine
Sensor to logic	Not isolated	
Digital Input		
Number of Inputs	24	
Input Type	The sinking /sourcing type (IEC type 1 sinking)	The sinking /sourcing type (IEC type1 sinking, excepting I0.0 to I0.3)
Allowable Continuous Voltage	Max. 30V DC	
Surge Voltage(Max)	35V DC, lasting 0.5s	
Logic 1 Signal (Min)	15V DC when the current is 2.5mA	the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA	the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min	
Isolation Group	1	
Filter Time	Each channel can be separately selected (point I0.0 to I1.5): 0.2, 0.4, 0.8, 1.6, 3.2, 6.4 and 12.8μs; 0.2, 0.4, 0.8, 1.6,3.2, 6.4 and 12.8ms; Each channel can be separately selected (I1.6 and larger): 0, 6.4, 12.8ms.	
Digital Input		
Number of Inputs	16	
Input Type	Relay, dry contact	Solid-MOSFET (source-type)
Voltage Range	5-30V DC or 5-250V AC	20.4-28.8V DC
Surge Current (Max)	7A when power on	8A, max. lasting 100ms
Rated Current per each point (Max)	2.0A	0.5A
Switching Frequency (Max)	Not recommended	—
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms	from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs
Turn-off Delay (Qa.4-Qb.7)	Up to 10ms	from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs
Optical Isolation (field side and logic side)	500V AC lasting 1.0min	
Contact Lifetime		
.Non-loaded	10,000,000 cycles	—
.Rated load	100,000 cycles	—

E7 SMART CPU

Model No.	CPU SR60 AC/DC/RLY	CPU ST60 DC/DC/DC
Order No.	E7 288-1SR60-0AA1	E7 288-1ST60-0AA1
Picture		
Product Description	Standard Edition CPU SR60, Relay	Standard Edition CPU ST60, Transistor
Standard		
Dimension (W×H×D)	175×100×81mm	
Power Consumption	25W	20W
Available Current (SM bus)	max. 1400mA	
Available Current (24V DC)	max. 300mA	
CPU Features		
Program Memory (KB)	48	
Data Memory (KB)	24	
Retentive Memory (KB)	12	
Data Preservation	Permanent	
Built-in I/O		
.Digital Input/Output	24 input /16 output	
.Analog Input/Output	—	
Process Image Size	256-bit input (I) /256-bit output (Q)	
Analog Image	56 words input (AI) /56 words output (AQ)	
Expansion Modules Allowed	up to 6 modules	
High speed Counter (total)	6 in total	
.Single Phase	4 x 200KHz + 2 x 30KHz	
.Quadrature Phase	2 x 100KHz + 2 x 20KHz	
Pulse Output	—	3 x 100K Hz
Timer	Non-holding (or not retained) (TON, TOF):192 Holding (or retained) : 64	
Counters	256	
Bit Memory (M)	256 bits	
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms	
Interrupt Edge	4 up and 4 down	
Real Time Clock	Usually 7 days, at least 6 days at 25°C	
Memory Card	Support	
Signal Expansion Board	Support	
Performance/ Processing Time		
.Boolean	0.35 μs /instruction	
.Moving Word Operations	1.2 μs /instruction	
.Floating Point	1.7 μs /instruction	

E7 SMART CPU

Model No.	CPU SR60 AC/DC/RLY	CPU ST60 DC/DC/DC
Order No.	E7 288-1SR60-0AA1	E7 288-1ST60-0AA1
Communications Built-in		
Ports	Ethernet: 1 Body serial port: 2 (DB9-RS485)	DB board serial port: 1 (CM01-RS485-RS232)
HMI Connections	Ethernet: 8 connections Serial port: 4 connections	
Programming (PG)	1 connection	
Ethernet		
.CPU (PUT/GET)	8 clients and 8 servers connections	
.Open type communication	8 active and 8 passive connections	
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s	
Isolation	Ethernet: transformer isolation, 1500V DC RS485: None	
Type of cable	Ethernet: CAT5e shielded cable RS485: PROFIBUS network cable	
Power		
Input Voltage	85-264V AC	20.4-28.8V DC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC	190mA (w/o 300mA power supply output of the sensor) when CPU only at 24V AC 470mA (w/ 300mA power supply output of the sensor) when CPU only at 24V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC	680mA at 24V AC
Inrush Current (Max)	16.3A at 264V AC	11.5A at 28.8V DC
Sensor Voltage	20.4-28.8V DC	
Isolation		
Input to logic	1500V AC, 1.0min	No quarantine
Sensor to logic	Not isolated	
Digital Input		
Number of Inputs	36	
Input Type	The sinking /sourcing type (IEC type 1 sinking)	The sinking /sourcing type (IEC type1 sinking, excepting I0.0 to I0.3)
Allowable Continuous Voltage	Max. 30V DC	
Surge Voltage(Max)	35V DC, lasting 0.5s	
Logic 1 Signal (Min)	15V DC when the current is 2.5mA	1the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA	the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min	
Isolation Group	1	
Filter Time	Each channel can be separately selected (point I0.0 to I1.5): 0.2, 0.4, 0.8, 1.6, 3.2, 6.4 and 12.8μs; 0.2, 0.4, 0.8, 1.6,3.2, 6.4 and 12.8ms; Each channel can be separately selected (I1.6 and larger): 0, 6.4, 12.8ms.	
Digital Input		
Number of Inputs	24	
Input Type	Relay, dry contact	Solid-MOSFET (source-type)
Voltage Range	5-30V DC or 5-250V AC	20.4-28.8V DC
Surge Current (Max)	7A when power on	8A, max. lasting 100ms
Rated Current per each point (Max)	2.0A	0.5A
Switching Frequency (Max)	Not recommended	—
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms	from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs
Turn-off Delay (Qa.4-Qc.7)	Up to 10ms	from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs
Optical Isolation (field side and logic side)	500V AC lasting 1.0min	
Contact Lifetime		
.Non-loaded	10,000,000 cycles	—
.Rated load	100,000 cycles	—

E5 SMART CPU

Model No.	CPU SR20 AC/DC/RLY	CPU ST20 DC/DC/DC
Order No.	E5 288-1SR20-0AA1	E5 288-1ST20-0AA1
Picture		
Product Description	Basic Edition CPU SR20, Relay	Basic Edition CPU ST20, Transistor
Standard		
Dimension (W×H×D)	90×100×81mm	
Power Consumption	14W	20W
Available Current (SM bus)	max. 1400mA	
Available Current (24V DC)	max. 300mA	
CPU Features		
Program Memory (KB)	30	
Data Memory (KB)	8	
Retentive Memory (KB)	10	
Data Preservation	Permanent	
Built-in I/O		
.Digital Input/Output	12 input /8 output	
.Analog Input/Output	—	
Process Image Size	256-bit input (I) /256-bit output (Q)	
Analog Image	56 words input (AI) /56 words output (AQ)	
Expansion Modules Allowed	up to 6 modules	
High speed Counter (total)	4 in total	
.Single Phase	4 x 50KHz(HSCO-3)	
.Quadrature Phase	1 x 30KHz(HSCO)	
Pulse Output	—	2 x 100K Hz(PLS instruction output)
Timer	Non-holding (or not retained) (TON, TOF):192	
	Holding (or retained) : 64	
Counters	256	
Bit Memory (M)	256 bits	
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms	
Interrupt Edge	4 up and 4 down	
Real Time Clock	Usually 7 days, at least 6 days at 25°C	
Memory Card	Support	
Signal Expansion Board	Support	
Performance/ Processing Time		
.Boolean	0.35 μs /instruction	
.Moving Word Operations	1.2 μs /instruction	
.Floating Point	1.7 μs /instruction	

E5 SMART CPU

Model No.	CPU SR20 AC/DC/RLY	CPU ST20 DC/DC/DC
Order No.	E5 288-1SR20-0AA1	E5 288-1ST20-0AA1
Communications Built-in		
Ports	Ethernet: 1 Body serial port: 1（DB9-RS485）	DB board serial port: 1（CM01-RS485-RS232）
HMI Connections	Ethernet: 5 connections Serial port: 4 connections	
Programming (PG)	1 connection	
Ethernet		
.CPU（PUT/GET）		
.Open type communication	Share 5 connections	
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s	
Isolation	Ethernet: transformer isolation, 1500V DC	RS485: None
Type of cable	Ethernet: CAT5e shielded cable	RS485: PROFIBUS network cable
Power		
Input Voltage	85-264V AC	20.4-28.8V DC
Input Current(CPU only)	130mA（w/o 300mA power supply output of the sensor） when CPU only at 120V AC 250mA（w/ 300mA power supply output of the sensor） when CPU only at 120V AC 80mA（w/o 300mA power supply output of the sensor） when CPU only at 240V AC 150mA（w/ 300mA power supply output of the sensor） when CPU only at 240V AC	190mA（w/o 300mA power supply output of the sensor） when CPU only at 24V AC 470mA（w/ 300mA power supply output of the sensor） when CPU only at 24V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC	680mA at 24V AC
Inrush Current (Max)	9.3A at 264V AC	11.7A at 28.8V DC
Sensor Voltage	20.4-28.8V DC	
Isolation		
Input to logic	1500V AC, 1.0min	No quarantine
Sensor to logic	Not isolated	
Digital Input		
Number of Inputs	12	
Input Type	The sinking /sourcing type（IEC type 1 sinking）	The sinking /sourcing type（IEC type1 sinking, excepting I0.0 to I0.3）
Allowable Continuous Voltage	Max. 30V DC	
Surge Voltage(Max)	35V DC, lasting 0.5s	
Logic 1 Signal (Min)	15V DC when the current is 2.5mA	1the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA	the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min	
Isolation Group	1	
Filter Time	Each channel can be separately selected:0, 6.4ms and 12.8ms;	
Digital Input		
Number of Inputs	8	
Input Type	Relay, dry contact	Solid-MOSFET (source-type)
Voltage Range	5-30V DC or 5-250V AC	20.4-28.8V DC
Surge Current (Max)	7A when power on	8A, max. lasting 100ms
Rated Current per each point (Max)	2.0A	0.5A
Switching Frequency (Max)	Not recommended	—
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms	from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs
Turn-off Delay (Qa.4-Qa.7)	Up to 10ms	from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs
Optical Isolation (field side and logic side)	500V AC lasting 1.0min	
Contact Lifetime		
.Non-loaded	10,000,000 cycles	—
.Rated load	100,000 cycles	—



E5 SMART CPU

Model No.	CPU SR30 AC/DC/RLY	CPU ST30 DC/DC/DC
Order No.	E5 288-1SR30-0AA1	E5 288-1ST30-0AA1
Picture		
Product Description	Basic Edition CPU SR30, Relay	Basic Edition CPU ST30, Transistor
Standard		
Dimension (W×H×D)	110×100×81mm	
Power Consumption	23W	18W
Available Current (SM bus)	max. 1400mA	
Available Current (24V DC)	max. 300mA	
CPU Features		
Program Memory (KB)	30	
Data Memory (KB)	12	
Retentive Memory (KB)	10	
Data Preservation	Permanent	
Built-in I/O		
.Digital Input/Output	18 input /12 output	
.Analog Input/Output	—	
Process Image Size	256-bit input (I) /256-bit output (Q)	
Analog Image	56 words input (AI) /56 words output (AQ)	
Expansion Modules Allowed	up to 6 modules	
High speed Counter (total)	4 in total	
.Single Phase	4 x 50KHz(HSC0-3)	
.Quadrature Phase	1 x 30KHz(HSC0)	
Pulse Output	—	2 x 100K Hz(PLS instruction output)
Timer	Non-holding (or not retained) (TON, TOF):192	
	Holding (or retained) : 64	
Counters	256	
Bit Memory (M)	256 bits	
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms	
Interrupt Edge	4 up and 4 down	
Real Time Clock	Usually 7 days, at least 6 days at 25°C	
Memory Card	Support	
Signal Expansion Board	Support	
Performance/ Processing Time		
.Boolean	0.35 μs /instruction	
.Moving Word Operations	1.2 μs /instruction	
.Floating Point	1.7 μs /instruction	

E5 SMART CPU

Model No.	CPU SR30 AC/DC/RLY		CPU ST30 DC/DC/DC
Order No.	E5 288-1SR30-0AA1		E5 288-1ST30-0AA1
Communications Built-in			
Ports	Ethernet: 1 Body serial port: 1 (DB9-RS485)		DB board serial port: 1 (CM01-RS485-RS232)
HMI Connections	Ethernet: 5 connections		Serial port: 4 connections
Programming (PG)	1 connection		
Ethernet			
.CPU (PUT/GET)			
.Open type communication	Share 5 connections		
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s		
Isolation	Ethernet: transformer isolation, 1500V DC		RS485: None
Type of cable	Ethernet: CAT5e shielded cable		RS485: PROFIBUS network cable
Power			
Input Voltage	85-264V AC		20.4-28.8V DC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC		190mA (w/o 300mA power supply output of the sensor) when CPU only at 24V AC 470mA (w/ 300mA power supply output of the sensor) when CPU only at 24V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC		680mA at 24V AC
Inrush Current (Max)	8.9A at 264V AC		6A at 28.8V DC
Sensor Voltage	20.4-28.8V DC		
Isolation			
Input to logic	1500V AC, 1.0min		No quarantine
Sensor to logic	Not isolated		
Digital Input			
Number of Inputs	18		
Input Type	The sinking /sourcing type (IEC type 1 sinking)		The sinking /sourcing type (IEC type1 sinking, excepting I0.0 to I0.3)
Allowable Continuous Voltage	Max. 30V DC		
Surge Voltage(Max)	35V DC, lasting 0.5s		
Logic 1 Signal (Min)	15V DC when the current is 2.5mA		1the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA		the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min		
Isolation Group	1		
Filter Time	Each channel can be separately selected:0, 6.4ms and 12.8ms;		
Digital Input			
Number of Inputs	12		
Input Type	Relay, dry contact		Solid-MOSFET (source-type)
Voltage Range	5-30V DC or 5-250V AC		20.4-28.8V DC
Surge Current (Max)	7A when power on		8A, max. lasting 100ms
Rated Current per each point (Max)	2.0A		0.5A
Switching Frequency (Max)	Not recommended		—
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms		from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs
Turn-off Delay (Qa.4-Qb.3)	Up to 10ms		from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs
Optical Isolation (field side and logic side)	500V AC lasting 1.0min		
Contact Lifetime			
.Non-loaded	10,000,000 cycles		—
.Rated load	100,000 cycles		—

E5 SMART CPU

Model No.	CPU SR40 AC/DC/RLY	CPU ST40 DC/DC/DC
Order No.	E5 288-1SR40-0AA1	E5 288-1ST40-0AA1
Picture		
Product Description	Basic Edition CPU SR40, Relay	Basic Edition CPU ST40, Transistor
Standard		
Dimension (W×H×D)	125×100×81mm	
Power Consumption	23W	18W
Available Current (SM bus)	max. 1400mA	
Available Current (24V DC)	max. 300mA	
CPU Features		
Program Memory (KB)	30	
Data Memory (KB)	16	
Retentive Memory (KB)	10	
Data Preservation	Permanent	
Built-in I/O		
.Digital Input/Output	24 input /16 output	
.Analog Input/Output	—	
Process Image Size	256-bit input (I) /256-bit output (Q)	
Analog Image	56 words input (AI) /56 words output (AQ)	
Expansion Modules Allowed	up to 6 modules	
High speed Counter (total)	4 in total	
.Single Phase	4 x 50KHz(HSC0-3)	
.Quadrature Phase	1 x 30KHz(HSC0)	
Pulse Output	—	2 x 100K Hz(PLS instruction output)
Timer	Non-holding (or not retained) (TON, TOF):192 Holding (or retained) : 64	
Counters	256	
Bit Memory (M)	256 bits	
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms	
Interrupt Edge	4 up and 4 down	
Real Time Clock	Usually 7 days, at least 6 days at 25°C	
Memory Card	Support	
Signal Expansion Board	Support	
Performance/ Processing Time		
.Boolean	0.35 μs /instruction	
.Moving Word Operations	1.2 μs /instruction	
.Floating Point	1.7 μs /instruction	

E5 SMART CPU

Model No.	CPU SR40 AC/DC/RLY	CPU ST40 DC/DC/DC
Order No.	E5 288-1SR40-0AA1	E5 288-1ST40-0AA1
Communications Built-in		
Ports	Ethernet: 1 Body serial port: 1（DB9-RS485）	DB board serial port: 1（CM01-RS485-RS232）
HMI Connections	Ethernet: 5 connections Serial port: 4 connections	
Programming (PG)	1 connection	
Ethernet		
.CPU（PUT/GET）		
.Open type communication	Share 5 connections	
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s	
Isolation	Ethernet: transformer isolation, 1500V DC	RS485: None
Type of cable	Ethernet: CAT5e shielded cable	RS485: PROFIBUS network cable
Power		
Input Voltage	85-264V AC	20.4-28.8V DC
Input Current(CPU only)	130mA（w/o 300mA power supply output of the sensor） when CPU only at 120V AC 250mA（w/ 300mA power supply output of the sensor） when CPU only at 120V AC 80mA（w/o 300mA power supply output of the sensor） when CPU only at 240V AC 150mA（w/ 300mA power supply output of the sensor） when CPU only at 240V AC	190mA（w/o 300mA power supply output of the sensor） when CPU only at 24V AC 470mA（w/ 300mA power supply output of the sensor） when CPU only at 24V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC	680mA at 24V AC
Inrush Current (Max)	16.3A at 264V AC	11.7A at 28.8V DC
Sensor Voltage	20.4-28.8V DC	
Isolation		
Input to logic	1500V AC, 1.0min	No quarantine
Sensor to logic	Not isolated	
Digital Input		
Number of Inputs	24	
Input Type	The sinking /sourcing type（IEC type 1 sinking）	The sinking /sourcing type （IEC type1 sinking, excepting I0.0 to I0.3）
Allowable Continuous Voltage	Max. 30V DC	
Surge Voltage(Max)	35V DC, lasting 0.5s	
Logic 1 Signal (Min)	15V DC when the current is 2.5mA	1the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA	the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min	
Isolation Group	1	
Filter Time	Each channel can be separately selected:0, 6.4ms and 12.8ms;	
Digital Input		
Number of Inputs	16	
Input Type	Relay, dry contact	Solid-MOSFET (source-type)
Voltage Range	5-30V DC or 5-250V AC	20.4-28.8V DC
Surge Current (Max)	7A when power on	8A, max. lasting 100ms
Rated Current per each point (Max)	2.0A	0.5A
Switching Frequency (Max)	Not recommended	—
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms	from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs
Turn-off Delay (Qa.4-Qb.7)	Up to 10ms	from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs
Optical Isolation (field side and logic side)	500V AC lasting 1.0min	
Contact Lifetime		
.Non-loaded	10,000,000 cycles	—
.Rated load	100,000 cycles	—


E5 SMART CPU

Model No.	CPU SR60 AC/DC/RLY	CPU ST60 DC/DC/DC
Order No.	E5 288-1SR60-0AA1	E5 288-1ST60-0AA1
Picture		
Product Description	Basic Edition CPU SR60, Relay	Basic Edition CPU ST60, Transistor
Standard		
Dimension (W×H×D)	175×100×81mm	
Power Consumption	25W	20W
Available Current (SM bus)	max. 1400mA	
Available Current (24V DC)	max. 300mA	
CPU Features		
Program Memory (KB)	30	
Data Memory (KB)	20	
Retentive Memory (KB)	10	
Data Preservation	Permanent	
Built-in I/O		
.Digital Input/Output	36 input /24 output	
.Analog Input/Output	—	
Process Image Size	256-bit input (I) /256-bit output (Q)	
Analog Image	56 words input (AI) /56 words output (AQ)	
Expansion Modules Allowed	up to 6 modules	
High speed Counter (total)	4 in total	
.Single Phase	4 x 50KHz(HSC0-3)	
.Quadrature Phase	1 x 30KHz(HSC0)	
Pulse Output	—	2 x 100K Hz(PLS instruction output)
Timer	Non-holding (or not retained) (TON, TOF):192	
	Holding (or retained) : 64	
Counters	256	
Bit Memory (M)	256 bits	
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms	
Interrupt Edge	4 up and 4 down	
Real Time Clock	Usually 7 days, at least 6 days at 25°C	
Memory Card	Support	
Signal Expansion Board	Support	
Performance/ Processing Time		
.Boolean	0.35 μs /instruction	
.Moving Word Operations	1.2 μs /instruction	
.Floating Point	1.7 μs /instruction	

E5 SMART CPU

Model No.	CPU SR60 AC/DC/RLY		CPU ST60 DC/DC/DC
Order No.	E5 288-1SR60-0AA1		E5 288-1ST60-0AA1
Communications Built-in			
Ports	Ethernet: 1 Body serial port: 1 (DB9-RS485)		DB board serial port: 1 (CM01-RS485-RS232)
HMI Connections	Ethernet: 5 connections		Serial port: 4 connections
Programming (PG)	1 connection		
Ethernet			
.CPU (PUT/GET)	Share 5 connections		
.Open type communication			
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s		
Isolation	Ethernet: transformer isolation, 1500V DC		RS485: None
Type of cable	Ethernet: CAT5e shielded cable		RS485: PROFIBUS network cable
Power			
Input Voltage	85-264V AC		20.4-28.8V DC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC		190mA (w/o 300mA power supply output of the sensor) when CPU only at 24V AC 470mA (w/ 300mA power supply output of the sensor) when CPU only at 24V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC		680mA at 24V AC
Inrush Current (Max)	16.3A at 264V AC		11.5A at 28.8V DC
Sensor Voltage	20.4-28.8V DC		
Isolation			
Input to logic	1500V AC, 1.0min		No quarantine
Sensor to logic	Not isolated		
Digital Input			
Number of Inputs	36		
Input Type	The sinking /sourcing type (IEC type 1 sinking)		The sinking /sourcing type (IEC type1 sinking, excepting I0.0 to I0.3)
Allowable Continuous Voltage	Max. 30V DC		
Surge Voltage(Max)	35V DC, lasting 0.5s		
Logic 1 Signal (Min)	15V DC when the current is 2.5mA		1the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 8mA, other input: 15V DC at 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA		the voltage is 4V DC when it ranges from I0.0 to I0.3 I0.6 to I0.7: 1mA, other input: 5V DC at 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min		
Isolation Group	1		
Filter Time	Each channel can be separately selected:0, 6.4ms and 12.8ms;		
Digital Input			
Number of Inputs	24		
Input Type	Relay, dry contact		Solid-MOSFET (source-type)
Voltage Range	5-30V DC or 5-250V AC		20.4-28.8V DC
Surge Current (Max)	7A when power on		8A, max. lasting 100ms
Rated Current per each point (Max)	2.0A		0.5A
Switching Frequency (Max)	Not recommended		—
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms		from the disconnection to connection(Max): 1.0 μs; from the connection to disconnection(Max): 3.0 μs
Turn-off Delay (Qa.4-Qc.7)	Up to 10ms		from the disconnection to connection(Max): 50 μs; from the connection to disconnection(Max): 200 μs
Optical Isolation (field side and logic side)	500V AC lasting 1.0min		
Contact Lifetime			
.Non-loaded	10,000,000 cycles		—
.Rated load	100,000 cycles		—


E3 SMART CPU

Model No.	CPU SR20
Order No.	E3 288-1SR20-0AA1
Picture	
Product Description	Standalone CPU SR20, Relay
Standard	
Dimension (W×H×D)	90×100×81mm
Power Consumption	14W
Available Current (SM bus)	max. 1400mA
Available Current (24V DC)	max. 300mA
CPU Features	
Program Memory (KB)	12
Data Memory (KB)	8
Retentive Memory (KB)	10
Data Preservation	Permanent
Built-in I/O	
.Digital Input/Output	12 input /8 output
.Analog Input/Output	—
Process Image Size	256-bit input (I) /256-bit output (Q)
Analog Image	56 words input (AI) /56 words output (AQ)
Expansion Modules Allowed	
High speed Counter (total)	4 in total
.Single Phase	4 x 50KHz(HSC0-3)
.Quadrature Phase	1 x 30KHz(HSC0)
Pulse Output	—
Timer	Non-holding (or not retained) (TON, TOF):192 Holding (or retained) : 64
Counters	256
Bit Memory (M)	256 bits
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms
Interrupt Edge	4 up and 4 down
Real Time Clock	/
Memory Card	Support
Signal Expansion Board	/
Performance/ Processing Time	
.Boolean	0.35 μs /instruction
.Moving Word Operations	1.2 μs /instruction
.Floating Point	1.7 μs /instruction

E3 SMART CPU

Model No.	CPU SR20
Order No.	E3 288-1SR20-0AA1
Communications Built-in	
Ports	Ethernet: 1 Serial port: 1 (DB9-RS485)
HMI Connections	Ethernet: 5 connections Serial port: 4 connections
Programming (PG)	1 connection
Ethernet	
.CPU (PUT/GET)	
.Open type communication	Share 5 connections
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s
Isolation	Ethernet: transformer isolation, 1500V DC RS485: None
Type of cable	Ethernet: CAT5e shielded cable RS485: PROFIBUS network cable
Power	
Input Voltage	85-264V AC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC
Inrush Current (Max)	9.3A at 264V AC
Sensor Voltage	20.4-28.8V DC
Isolation	
Input to logic	1500V AC, 1.0min
Sensor to logic	Not isolated
Digital Input	
Number of Inputs	12
Input Type	The sinking /sourcing type (IEC type 1 sinking)
Allowable Continuous Voltage	30V DC
Surge Voltage(Max)	35V DC, lasting 0.5s
Logic 1 Signal (Min)	15V DC when the current is 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min
Isolation Group	1
Filter Time	Each channel can be separately selected : 0, 6.4ms and 12.8ms;
Digital Input	
Number of Inputs	8
Input Type	Relay, dry contact
Voltage Range	5-30V DC or 5-250V AC
Surge Current (Max)	7A when power on
Rated Current per each point (Max)	2.0A
Switching Frequency (Max)	Not recommended
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms
Turn-off Delay (Qa.4-Qa.7)	Up to 10ms
Optical Isolation (field side and logic side)	500V AC lasting 1.0min
Contact Lifetime	
.Non-loaded	10,000,000 cycles
.Rated load	100,000 cycles

E3 SMART CPU

Model No.	CPU SR20XP	
Order No.	E3 288-1SR20-XPA1	
Picture		
Product Description	Standalone CPU SR20XP, Relay , integrated 4 input/3 output analog channels	
Standard		
Dimension (W×H×D)	110×100×81mm	
Power Consumption	10W	
Available Current (SM bus)	—	
Available Current (24V DC)	max. 300mA	
CPU Features		
Program Memory (KB)	18	
Data Memory (KB)	12	
Retentive Memory (KB)	10	
Data Preservation	Permanent	
Built-in I/O		
.Digital Input/Output	12 input /8 output	
.Analog Input/Output	4 input /3 output	
Process Image Size	256-bit input (I) /256-bit output (Q)	
Analog Image	56 words input (AI) /56 words output (AQ)	
Expansion Modules Allowed	—	
High speed Counter (total)	4 in total	
.Single Phase	4 x 50KHz(HSC0-3)	
.Quadrature Phase	1 x 30KHz(HSC0)	
Pulse Output	—	
Timer	Non-holding (or not retained) (TON, TOF):192 Holding (or retained) : 64	
Counters	256	
Bit Memory (M)	256 bits	
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms	
Interrupt Edge	4 up and 4 down	
Real Time Clock	—	
Memory Card	Support	
Signal Expansion Board	—	
Performance/ Processing Time		
.Boolean	0.35 μs /instruction	
.Moving Word Operations	1.2 μs /instruction	
.Floating Point	1.7 μs /instruction	
Communications Built-in		
Ports	Ethernet: 1 Body serial port: 2 (DB9-RS485)	
HMI Connections	Ethernet: 5 connections Serial port: 4 connections	
Programming (PG)	1 connection	
Ethernet		
.CPU(PUT/GET)		
.Open type communication	Share 5 connections	
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s	
Isolation	Ethernet: transformer isolation, 1500V DC RS485: None	
Type of cable	Ethernet: CAT5e shielded cable RS485: PROFIBUS network cable	
Power		
Input Voltage	85-264V AC	
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC	
	250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC	
	80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC	
	150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC	

E3 SMART CPU

Model No.	CPU SR20XP
Order No.	E3 288-1SR20-XPA1
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC
Inrush Current (Max)	9.3A at 264V AC
Sensor Voltage	20.4-28.8V DC
Isolation	
Input to logic	1500V AC, 1.0min
Sensor to logic	Not isolated
Digital Input	
Number of Inputs	12
Input Type	The sinking /sourcing type (IEC type 1 sinking)
Allowable Continuous Voltage	30V DC
Surge Voltage(Max)	35V DC, lasting 0.5s
Logic 1 Signal (Min)	15V DC when the current is 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min
Isolation Group	1
Filter Time	Each channel can be separately selected : 0, 6.4ms and 12.8ms;
Digital Input	
Number of Inputs	8
Input Type	Relay, dry contact
Voltage Range	5-30V DC or 5-250V AC
Surge Current (Max)	7A when power on
Rated Current per each point (Max)	2.0A
Switching Frequency (Max)	Not recommended
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms
Turn-off Delay (Qa.4-Qa.7)	Up to 10ms
Optical Isolation (field side and logic side)	500V AC lasting 1.0min
Contact Lifetime	
.Non-loaded	10,000,000 cycles
.Rated load	100,000 cycles
Analog Input	
Number of Inputs	4
Input Type	Voltage or current: 2 can be selected as a group
Input Range	Voltage: 0-10V; current: 0-20mA
resolution ratio	Voltage mode: 12bits; Current mode: 12bits
accuracy	Voltage mode: ±0.3%/±0.5% Full scale range; Current mode: ±0.4%/±0.6% Full scale range
Analog-to-digital switching time	50mS(50Hz)
Analog Output	
Number of Outputs	3
Output Type	Voltage or current (configurable)
Output Range	Voltage: 0-10V; current: 0-20mA
resolution ratio	Voltage mode: 11bits; Current mode: 11bits
accuracy	Voltage: 25 ° C: ± 0.5%; 0 ° to 55 °: ± 1.0% Current: 25 ° C: ± 0.6%; 0 ° to 55 °: ± 1.1%
Diagnose	Upflow/underflow
Cable length(max)	100m , Shielded twisted pair

E3 SMART CPU

Model No.	CPU SR30
Order No.	E3 288-1SR30-0AA1
Picture	
Product Description	Standalone CPU SR30, Relay
Standard	
Dimension (W×H×D)	110×100×81mm
Power Consumption	23W
Available Current (SM bus)	max. 1400mA
Available Current (24V DC)	max. 300mA
CPU Features	
Program Memory (KB)	18
Data Memory (KB)	12
Retentive Memory (KB)	10
Data Preservation	Permanent
Built-in I/O	
.Digital Input/Output	18 input /12 output
.Analog Input/Output	—
Process Image Size	256-bit input (I) /256-bit output (Q)
Analog Image	56 words input (AI) /56 words output (AQ)
Expansion Modules Allowed	—
High speed Counter (total)	4 in total
.Single Phase	4 x 50KHz(HSC0-3)
.Quadrature Phase	1 x 30KHz(HSC0)
Pulse Output	
Timer	Non-holding (or not retained) (TON, TOF):192 Holding (or retained) : 64
Counters	256
Bit Memory (M)	256 bits
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms
Interrupt Edge	4 up and 4 down
Real Time Clock	/
Memory Card	Support
Signal Expansion Board	/
Performance/ Processing Time	
.Boolean	0.35 μs /instruction
.Moving Word Operations	1.2 μs /instruction
.Floating Point	1.7 μs /instruction

E3 SMART CPU

Model No.	CPU SR30
Order No.	E3 288-1SR30-0AA1
Communications Built-in	
Ports	Ethernet: 1 Serial port: 1 (DB9-RS485)
HMI Connections	Ethernet: 5 connections Serial port: 4 connections
Programming (PG)	1 connection
Ethernet	
.CPU (PUT/GET)	
.Open type communication	Share 5 connections
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s
Isolation	Ethernet: transformer isolation, 1500V DC RS485: None
Type of cable	Ethernet: CAT5e shielded cable RS485: PROFIBUS network cable
Power	
Input Voltage	85-264V AC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC
Inrush Current (Max)	8.9A at 264V AC
Sensor Voltage	20.4-28.8V DC
Isolation	
Input to logic	1500V AC, 1.0min
Sensor to logic	Not isolated
Digital Input	
Number of Inputs	18
Input Type	The sinking /sourcing type (IEC type 1 sinking)
Allowable Continuous Voltage	Max. 30V DC
Surge Voltage(Max)	35V DC, lasting 0.5s
Logic 1 Signal (Min)	15V DC when the current is 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min
Isolation Group	1
Filter Time	Each channel can be separately selected : 0, 6.4ms and 12.8ms;
Digital Input	
Number of Inputs	12
Input Type	Relay, dry contact
Voltage Range	5-30V DC or 5-250V AC
Surge Current (Max)	7A when power on
Rated Current per each point (Max)	2.0A
Switching Frequency (Max)	Not recommended
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms
Turn-off Delay (Qa.4-Qb.3)	Up to 10ms
Optical Isolation (field side and logic side)	500V AC lasting 1.0min
Contact Lifetime	
.Non-loaded	10,000,000 cycles
.Rated load	100,000 cycles

E3 SMART CPU

Model No.	CPU SR40
Order No.	E3 288-1SR40-0AA1
Picture	
Product Description	Standalone CPU SR40, Relay
Standard	
Dimension (W×H×D)	125×100×81mm
Power Consumption	23W
Available Current (SM bus)	max. 1400mA
Available Current (24V DC)	max. 300mA
CPU Features	
Program Memory (KB)	24
Data Memory (KB)	16
Retentive Memory (KB)	10
Data Preservation	Permanent
Built-in I/O	
.Digital Input/Output	24 input /16 output
.Analog Input/Output	—
Process Image Size	256-bit input (I) /256-bit output (Q)
Analog Image	56 words input (AI) /56 words output (AQ)
Expansion Modules Allowed	—
High speed Counter (total)	4 in total
.Single Phase	4 x 50KHz(HSC0-3)
.Quadrature Phase	1 x 30KHz(HSC0)
Pulse Output	—
Timer	Non-holding (or not retained) (TON, TOF):192 Holding (or retained) : 64
Counters	256
Bit Memory (M)	256 bits
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms
Interrupt Edge	4 up and 4 down
Real Time Clock	/
Memory Card	Support
Signal Expansion Board	/
Performance/ Processing Time	
.Boolean	0.35 μs /instruction
.Moving Word Operations	1.2 μs /instruction
.Floating Point	1.7 μs /instruction

E3 SMART CPU

Model No.	CPU SR40
Order No.	E3 288-1SR40-0AA1
Communications Built-in	
Ports	Ethernet: 1 Serial port: 1 (DB9-RS485)
HMI Connections	Ethernet: 5 connections Serial port: 4 connections
Programming (PG)	1 connection
Ethernet	
.CPU (PUT/GET)	
.Open type communication	Share 5 connections
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s
Isolation	Ethernet: transformer isolation, 1500V DC RS485: None
Type of cable	Ethernet: CAT5e shielded cable RS485: PROFIBUS network cable
Power	
Input Voltage	85-264V AC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC
Inrush Current (Max)	16.3A at 264V AC
Sensor Voltage	20.4-28.8V DC
Isolation	
Input to logic	1500V AC, 1.0min
Sensor to logic	Not isolated
Digital Input	
Number of Inputs	24
Input Type	The sinking /sourcing type (IEC type 1 sinking)
Allowable Continuous Voltage	Max. 30V DC
Surge Voltage(Max)	35V DC, lasting 0.5s
Logic 1 Signal (Min)	15V DC when the current is 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min
Isolation Group	1
Filter Time	Each channel can be separately selected : 0, 6.4ms and 12.8ms;
Digital Input	
Number of Inputs	16
Input Type	Relay, dry contact
Voltage Range	5-30V DC or 5-250V AC
Surge Current (Max)	7A when power on
Rated Current per each point (Max)	2.0A
Switching Frequency (Max)	Not recommended
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms
Turn-off Delay (Qa.4-Qb.7)	Up to 10ms
Optical Isolation (field side and logic side)	500V AC lasting 1.0min
Contact Lifetime	
.Non-loaded	10,000,000 cycles
.Rated load	100,000 cycles

E3 SMART CPU

Model No.	CPU SR60
Order No.	E3 288-1SR60-0AA1
Picture	
Product Description	Standalone CPU SR60, Relay
Standard	
Dimension (W×H×D)	175×100×81mm
Power Consumption	25W
Available Current (SM bus)	max. 1400mA
Available Current (24V DC)	max. 300mA
CPU Features	
Program Memory (KB)	30
Data Memory (KB)	20
Retentive Memory (KB)	10
Data Preservation	Permanent
Built-in I/O	
.Digital Input/Output	36 input /24 output
.Analog Input/Output	—
Process Image Size	256-bit input (I) /256-bit output (Q)
Analog Image	56 words input (AI) /56 words output (AQ)
Expansion Modules Allowed	—
High speed Counter (total)	4 in total
.Single Phase	4 x 50KHz(HSC0-3)
.Quadrature Phase	1 x 30KHz(HSC0)
Pulse Output	—
Timer	Non-holding (or not retained) (TON, TOF):192 Holding (or retained) : 64
Counters	256
Bit Memory (M)	256 bits
Cycle Interrupt	2 in total, T32 and T96 have a resolution of 1ms
Interrupt Edge	4 up and 4 down
Real Time Clock	/
Memory Card	Support
Signal Expansion Board	/
Performance/ Processing Time	
.Boolean	0.35 μs /instruction
.Moving Word Operations	1.2 μs /instruction
.Floating Point	1.7 μs /instruction





E3 SMART CPU

Model No.	CPU SR60
Order No.	E3 288-1SR60-0AA1
Communications Built-in	
Ports	Ethernet: 1 Serial port: 1 (DB9-RS485)
HMI Connections	Ethernet: 5 connections Serial port: 4 connections
Programming (PG)	1 connection
Ethernet	
.CPU (PUT/GET)	
.Open type communication	Share 5 connections
Data Transmission Rate	Ethernet:10/100 Mb/s RS485 System Protocol: 9600, 19200 and 187500b/s RS485 free port:1200 to 115200b/s
Isolation	Ethernet: transformer isolation, 1500V DC RS485: None
Type of cable	Ethernet: CAT5e shielded cable RS485: PROFIBUS network cable
Power	
Input Voltage	85-264V AC
Input Current(CPU only)	130mA (w/o 300mA power supply output of the sensor) when CPU only at 120V AC 250mA (w/ 300mA power supply output of the sensor) when CPU only at 120V AC 80mA (w/o 300mA power supply output of the sensor) when CPU only at 240V AC 150mA (w/ 300mA power supply output of the sensor) when CPU only at 240V AC
Input Current(Including CPU and all extensions accessories)	300mA at 120V AC 190mA at 240V AC
Inrush Current (Max)	16.3A at 264V AC
Sensor Voltage	20.4-28.8V DC
Isolation	
Input to logic	1500V AC, 1.0min
Sensor to logic	Not isolated
Digital Input	
Number of Inputs	36
Input Type	The sinking /sourcing type (IEC type 1 sinking)
Allowable Continuous Voltage	Max. 30V DC
Surge Voltage(Max)	35V DC, lasting 0.5s
Logic 1 Signal (Min)	15V DC when the current is 2.5mA
Logic 0 Signal (Max)	5V DC when the current is 1mA
Optical Isolation(field side and logic side)	500V AC, lasting 1.0min
Isolation Group	1
Filter Time	Each channel can be separately selected : 0, 6.4ms and 12.8ms;
Digital Input	
Number of Inputs	24
Input Type	Relay, dry contact
Voltage Range	5-30V DC or 5-250V AC
Surge Current (Max)	7A when power on
Rated Current per each point (Max)	2.0A
Switching Frequency (Max)	Not recommended
Turn-on Delay (Qa.0-Qa.3)	Up to 10ms
Turn-off Delay (Qa.4-Qc.7)	Up to 10ms
Optical Isolation (field side and logic side)	500V AC lasting 1.0min
Contact Lifetime	
.Non-loaded	10,000,000 cycles
.Rated load	100,000 cycles





Digital input module

Model No.	EM DE08		EM DE16	
Order No.	E 288-2DE08-0AA1		E 288-2DE16-0AA1	
Picture				
Product Description	8-digital input, 24VDC		16-digital input, 24VDC	
Standard				
Dimension (W×H×D)	47×100×81mm			
Power Consumption	1.5W		2.3W	
Current Consumption (SM bus)	120mA		130mA	
Current Consumption (24V DC)	4mA for each input point used			
Digital Input				
Number of Inputs	8		16	
Input Type	PNP/NPN (IEC type 1 sinking)			
Rated Voltage	24V DC when the current is 4mA, Rated Value			
Allowable Continuous Voltage	Max 30V DC			
Surge Voltage(Max)	35V DC, lasting 0.5s			
Logic 1 Signal (Min)	it is 15V DC when the current is 2.5mA			
Logic 0 Signal (Max)	it is 5V DC when the current is 1mA			
Optical Isolation (field side and logic side)	500V AC, lasting 1.0min			
Isolation Group	2		4	
Filter Time	—		—	
Number of inputs that connect at the same time	8		16	
.55° (horizontal)			All	
.45° (vertical)			All	
Cable Length(Max)				
.Shield			500M	
.Unshielded			300M	





Digital output module

Model No.	EM DR08	EM DT08	EM QR16	EM QT16
Order No.	E 288-2DR08-0AA1	E 288-2DT08-0AA1	E 288-2QR16-0AA1	E 288-2QT16-0AA1
Picture				
Product Description	8-digital output, relay	8-digital output, transistor	16-digital output, relay	16-digital output, transistor
Standard				
Dimension (W×H×D)	47×100×81mm			
Power Consumption	4.5W	1.5W	4.5W	1.7W
Current Consumption (SM bus)	120mA	120mA	110mA	120mA
Current Consumption (24V DC)	9mA for each relay coil used	—	9mA for each relay coil used	—
Digital Output				
Number of Outputs	8		16	
Output Type	Relay	Solid-MOSFET (source type)	Relay	Solid-MOSFET (source type)
Voltage Range	5-30V DC or 5-250V AC	20.4-28.8V DC	5-30V DC or 5-250V AC	20.4-28.8V DC
Surge Current (Max)	7A when power on	8A, lasting 100ms	7A when power on	8A, lasting 100ms
Rated Current per point (Max)	2.0A	0.75A	2.0A	0.75A
Switching Delay	Up to 10ms	from the disconnection to connection(Max): 50μs; from the connection to disconnection(Max): 200μs	Up to 10ms	from the disconnection to connection(Max): 50μs; from the connection to disconnection(Max): 200μs
Optical Isolation(field side and logic side)	1500V AC, lasting 1.0min(coil and contact), None(coil and logic side)	500V AC, lasting 1.0min)	1500V AC, lasting 1.0min(coil and contact), None(coil and logic side)	500V AC, lasting 1.0min
Isolation Group	2		4	
Output Status in STOP Mode	previous value or replacement value (default is 0)			
Contact Lifetime				
.Non-loaded	10,000,000 break / close cycles	—	10,000,000 break / close cycles	—
.Rated load	100,000 break / close cycles	—	100,000 break / close cycles	—
Number of Inputs that connect at the same time	8		16	
.55° (horizontal)	All			
.45° (vertical)	All			
Cable Length(Max)				
.Shield	500M			
.Unshielded	150M			





Digital input/output module

Model No.	EM DR16	EM DT16	EM DR32	EM DT32
Order No.	E 288-2DR16-0AA1	E 288-2DT16-0AA1	E 288-2DR32-0AA1	E 288-2DT32-0AA1
Picture				
Product Description	8-digital input/ 8-digital output, relay	8-digital input/ 8-digital output, transistor	16-digital input/ 16-digital output, relay	16-digital input/ 16-digital output, transistor
Standard				
Dimension (W×H×D)	47×100×81mm		72×100×81mm	
Power Consumption	5.5W	2.5W	10W	4.5W
Current Consumption (SM bus)	145mA	145mA	180mA	180mA
Current Consumption (24V DC)	4mA for each input point used, each relay coil used is 11mA	4mA for each input point used	4mA for each input point used, each relay coil used is 11mA	4mA for each input point used
Digital Input				
Number of Outputs	8		16	
Input Type	PNP/NPN (IEC type 1 sinking)			
Surge Voltage(Max)	35V DC, lasting 0.5s			
Logic 1 Signal (Min)	15V DC			
Logic 0 Signal (Max)	5V DC			
Optical Isolation (field side and logic side)	500V AC, lasting 1min			
Isolation Group	2			
Filter Time	0.2,0.4,0.8,1.6, 3.2, 6.4,12.8ms (optional, 4 inputs form one group)			
Number of Inputs that connect at the same time	8		16	
Cable Length(M)	500M(shield), 150M(unshielded)			
Digital Output				
Number of Outputs	8		16	
Output Type	Relay	Solid-MOSFET (source type)	Relay	Solid-MOSFET (source type)
Voltage Range	5~30V DC or 5~250V AC	20.4~28.8V DC	5~30V DC or 5~250V AC	20.4~28.8V DC
Surge Current	7A when power on	8A, max. lasting 100ms	7A when power on	8A, max. lasting 100ms
Rated Current per point (Max)	2.0A	0.75A	2.0A	0.75A
Switching Delay	from the disconnection to connection(Max): 50μs; from the connection to disconnection(Max): 200μs	Up to 10ms	from the disconnection to connection(Max): 50μs; from the connection to disconnection(Max): 200μs	Up to 10ms
Optical Isolation(field side and logic side)	1500V AC, lasting 1.0min (coil and contact), None(coil and logic side)	500V AC, lasting 1.0min	1500V AC, lasting 1.0min (coil and contact), None(coil and logic side)	500V AC, lasting 1.0min
Isolation Group	2		4	3
Output Status in STOP Mode	previous value or replacement value (default is 0)			
Number of Inputs that connect at the same time	8		16	
.55° (horizontal)	All			
.45° (vertical)	All			
Cable Length (M)				
.Shield	500M			
.Unshielded	150M			





Analog input module

Model No.	EM AE04		EM AE08	
Order No.	E 288-3AE04-0AA0		E 288-3AE08-0AA1	
Picture				
Product Description	Bipolar, 4-channel analog input, resolution 12 bits, full channel support current/voltage input		Unipolarity, 4-channel analog input, resolution 12 bits, full channel support current/voltage input	
Standard				
Dimension (W×H×D)	47×100×81mm			
Power Consumption	1W			
Current Consumption (SM bus)	90mA			
Current Consumption (24V DC)	20mA			
Analog Input				
Number of Inputs	4		8	
Input Type	voltage or current (differential): 2 can be selected as a group range	Voltage or current (single ended): 2 can be s elected as a group	voltage or current (differential): 2 can be selected as a group range	Voltage or current (single ended): 2 can be selected as a group
Input Range				
Electric Current	0~20mA			
Supply Voltage	±2.5V, ±5V, ±10V	0-10V	±2.5V, ±5V, ±10V	0-10V
Data Word Format				
.Unipolarity	0~+27648	0~+27648	0~+27648	0~+27648
.Bipolar	±27648	0~+27648	±27648	0~+27648
Max. Voltage Resistance	±35V			
Max. Current Resistance	±40mA			
Smoothness	None, weak, medium or strong			
Noise Supression	400,60,50 or 10Hz	50 or 10Hz	400,60,50 or 10Hz	50Hz
Resolution				
Voltage Mode	12 bits + symbol bits	12 bits	12 bits + symbol bits	12 bits
Current Mode	12 bits			
Isolation (field side and logic side)	1500V AC			
Precision (25°C/0~55°C)				
.Voltage Mode	full range ±0.1%/±0.2%	full range ±0.3%/±0.5%	full range ±0.1%/±0.2%	full range ±0.3%/±0.5%
.Current Mode	full range ±0.2%/±0.3%	full range ±0.4%/±0.6%	full range ±0.2%/±0.3%	full range ±0.2%/±0.3%
Analog to digital Conversion Time	625 μs (400Hz inhibited)	500ms(50HZ)	625 μs (400Hz inhibited)	500ms(50HZ)
Common mode Rejection	40dB, DC to 60HZ	—	40dB, DC to 60HZ	—
Working Signal Range	signal plus common mode voltage ≤12V	—	signal plus common mode voltage ≤12V	—
Diagnosis	Overflow/ underflow, 24V DC low voltage		Overflow/ underflow, 24V DC low voltage	
Cable Length (M)	100m, shielded twisted pair		100m, shielded twisted pair	

Analog output module

Model No.	EM AQ02		EM AQ04	
Order No.	E 288-3AQ02-0AA0	E 288-3AQ02-0AA1	E 288-3AQ04-0AA0	E 288-3AQ04-0AA1
Picture				
Product Description	Bipolar,2-channel analog output, full-channel support current/ voltage output	Unipolarity, 2-channel analog output, full-channel support current/ voltage output	Bipolar,4-channel analog output, full-channel support current/ voltage output	Unipolarity,4-channel analog output, full-channel support current/ voltage output
Standard				
Dimension (W×H×D)	47×100×81mm			
Power Consumption	1.5W		2.1W	
Current Consumption (SM bus)	90mA			
Current Consumption (24V DC)	50mA		70mA	
Analog Output				
Number of Outputs	2		4	
Output Type	Voltage or current			
Output Range	—			
.Current Output	0-20mA			
.Voltage Output	±10V	0-10V	±10V	0-10V
Data Word Format	—			
.Current Output	0-27648			
.Voltage Output	±27648	0-27648	±27648	0-27648
Resolution				
Voltage Mode	11 bits + symbol bits	11 bits	11 bits + symbol bits	11 bits
Current Mode	11 bits			
Isolation (field side and logic side)	500V AC			
Precision				
.Typical, 25°	full range ±0.5%			
.Worst, 0°to 55°	full range ±1.0%			
Output Status in STOP Mode	previous value or replacement value (default is 0)			
Diagnosis				
.Voltage Mode	Overflow/ underflow, short circuit to ground, 24V DC low voltage	Overflow/ underflow, 24V DC low voltage	Overflow/ underflow, short circuit to ground, 24V DC low voltage	Overflow/ underflow, 24V DC low voltage
.Current Mode	Overflow/ underflow, wire break, 24V DC low voltage	Overflow/ underflow, 24V DC low voltage	Overflow/ underflow, wire break, 24V DC low voltage	Overflow/ underflow, 24V DC low voltage
Cable Length (M)	100m, shielded twisted pair			

Analog input/output module


Model No.	EM AM03		EM AM06	
Order No.	E 288-3AM03-0AA0	E 288-3AM03-0AA1	E 288-3AM06-0AA0	E 288-3AM06-0AA1
Picture				
Product Description	Bipolar,2-channel analog input/ 1-channel analog output, full-channel support current/voltage type	Unipolarity, 2-channel analog input/ 1-channel analog output, full-channel support current/voltage type	Bipolar,4-channel analog input/ 2-channel analog output, full-channel support current/voltage type	Unipolarity, 4-channel analog input/ 2-channel analog output, full-channel support current/voltage type
Standard				
Dimension (W×H×D)	47×100×81mm			
Power Consumption	1.1W		2.0W	
Current Consumption (SM bus)	90mA			
Available Current (24V DC)	30mA		60mA	
Analog Input				
Number of Inputs	2		4	
Input Type	voltage or current (differential): 2 can be selected as a group range	Voltage or current (single ended): 2 can be selected as a group	voltage or current (differential): 2 can be selected as a group range	Voltage or current (single ended): 2 can be selected as a group
Input Range				
.Electric Current	0~20mA			
.Supply Voltage	±2.5V, ±5V, ±10V	0-10V	±2.5V, ±5V, ±10V	0-10V
Resolution				
Voltage Mode	12 bits + symbol bits	12 bits	12 bits + symbol bits	12 bits
Current Mode	12 bits			
Precision				
.Voltage Mode	±0.2%/±0.3% full range	±0.3%/±0.5% full range	±0.2%/±0.3% full range	±0.3%/±0.5% full range
.Current Mode	±0.2%/±0.3% full range	±0.4%/±0.6% full range	±0.2%/±0.3% full range	±0.4%/±0.6% full range
Analog to digital Conversion Time	625μs(400Hz inhibited)	50 or 10Hz	625μs(400Hz inhibited)	50 or 10Hz
Analog Output				
Number of Outputs	1		2	
Output Type	Voltage/current			
Output Range	—			
.Current Output	0-20mA			
.Voltage Output	±10V	0-10V	±10V	0-10V
Resolution	—			
Voltage Mode	11 bits + symbol bits	11 bits	11 bits + symbol bits	11 bits
Current Mode	11 bits			
Isolation (field side and logic side)	500V AC			
Precision				
.Typical, 25°	full range ±0.5%			
.Worst, 0°to 55°	full range ±1.0%			
Diagnosis				
.Voltage Mode	Overflow/ underflow, short circuit to ground, 24V DC low voltage	Overflow/ underflow, 24V DC low voltage	Overflow/ underflow, short circuit to ground, 24V DC low voltage	Overflow/ underflow, 24V DC low voltage
.Current Mode	Overflow/ underflow, short circuit, 24V DC low voltage	Overflow/ underflow, 24V DC low voltage	Overflow/ underflow, short circuit, 24V DC low voltage	Overflow/ underflow, 24V DC low voltage
Cable Length (M)	100m, shielded twisted pair			

Thermocouple module



Model No.	EM AT04			
Order No.	E 288-3AT04-0AA1			
Picture				
Product Description	4-channel thermocouple module			
Standard				
Dimension (W×H×D)	47×100×81mm			
Power Consumption	1.5W			
Current Consumption (SM bus)	120mA			
Current Consumption (24V DC)	40mA			
Analog Input				
Number of Inputs	4			
Range Rated Range (Data word) Overshoot/Undershoot Range (Data word) Overflow/underflow (Data word)	Please refer to the thermocouple selection table			
Measuring Principle	Sigma-Delta			
Resolution				
.Temperature	0.1°C / 0.1°F			
.Voltage	15 bits+ symbol bits			
Max. Voltage Resistance	±60V			
Isolation				
.Field side and logic side	500V AC			
.Field side and 24V DC side	500V AC			
.24V DC side and Logic side	500V AC			
Channel to channel Isolation	Support			
Common mode Rejectio	>120dB at 120V AC			
Repeatability	±0.05%FS			
The cold end temperature error	±1.5°C			
Cable Loop Resistance (Max)	100Ω			
Diagnosis	Overflow/ underflow, circuit break, 24V DC low voltage			
Cable Length	100m, shielded twisted pair			
Rejection Frequency Selection	400Hz(2.5ms) 60Hz(16.6ms) 50Hz(20ms) 10Hz(100ms)			

Remark: when 400Hz inhibition is selected, the integration time should be 10ms to ensure the resolution and precision of module. Meanwhile this selection will also suppress noise at frequency of 100Hz and 200Hz. It is recommended to use an integration time of 100ms while measuring thermocouple. Using smaller integration time will increase repeatability error of temperature reading.

Thermocouple module

Model No.	EM AT08		
Order No.	E 288-3AT08-0AA1		
Picture			
Product Description	8-channel thermocouple module, resolution 16 bits		
Standard			
Dimension (W×H×D)	47×100×81mm		
Power Consumption	1.5W		
Current Consumption (SM bus)	50mA		
Current Consumption (24V DC)	40mA		
Analog Input			
Number of Inputs	8		
Input Type	TC		
Input Range			
.Type	EJKNRST		
.Voltage Range	±80mV		
Data Word Format	Voltage: -27648 to +27648		
Measuring Principle	Sigma-Delta		
Resolution			
.Temperature	0.1°C / 0.1°F		
.Voltage	15 bits+ symbol bits		
.Resistance	—		
Max. Voltage Resistance	±60V		
Isolation			
.Field side and logic side	500V AC		
.Field side and 24V DC side	500V AC		
.24V DC side and Logic side	500V AC		
Channel to channel Isolation	Support		
Common mode Rejection	120V AC, >120dB		
Repeatability	±0.05%FS		
The cold end temperature error	±1.5°C		
Cable Loop Resistance (Max)	100Ω		
Cable Length	100m		

RTD modules

Model No.	EM AR02	EM AR04
Order No.	E 288-3AR02-0AA1	E 288-3AR04-0AA1
Picture		
Product Description	2-channel RTD module, resolution 16 bits	4-channel RTD module, resolution 16 bits
Standard		
Dimension (W×H×D)	47×100×81mm	
Power Consumption	1.5W	
Current Consumption (SM bus)	120mA	
Current Consumption (24V DC)	40mA	
Analog Input		
Number of Inputs	2	4
Range Rated Range (Data word) Overshoot/Undershoot Range (Data word) Overflow/underflow (Data word)	Please refer to RTD sensor selection table	
Measuring Principle	Sigma-Delta	
Resolution		
.Temperature	0.1°C / 0.1°F	
.Voltage	15 bits+ symbol bits	
Max. Voltage Resistance	±60V	
Isolation		
.Field side and logic side	500V AC	
.Field side and 24V DC side	500V AC	
.24V DC side and Logic side	500V AC	
Channel to channel Isolation	Support	
Common mode Rejection	>120dB	
Repeatability	0.05%FS	
Max Power Consumption of the Sensor	0.5mW	
Cable Loop Resistance (Max)	20Ω, for Cu10, the maximum is 2.7Ω	
Diagnosis	Overflow/ underflow, circuit break, 24V DC low voltage	
Cable Length	100m, shielded twisted pair	
Rejection Frequency Selection	400Hz(2.5ms) 60Hz(16.6ms) 50Hz(20ms) 10Hz(100ms)	


Remark: When selecting 400Hz filter, and maintaining the resolution and accuracy of the module, the integration time should be 10ms. Meanwhile this selection will also suppress noise at frequency of 100Hz and 200Hz.

DB expansion board

RS485/RS232 signal boards


Model No.	SB CM01	
Order No.	E 288-5CM01-0AA1	
Picture		
Standard		
Dimension (W×H×D)	35×52.2×16mm	
Weight	18.2g	
Power dissipation	0.5W	
Current consumption (5V DC)	50mA	
Current consumption (24V DC)	N/A	
RS485 Transmitter and receiver		
Common mode voltage range	-7V to +12V;1 second, 3VRMS continuous	
Isolation		
RS 485 signal to chassis ground	None	
RS485 signal to CPU logic com - mon		
Cable length, shielded	With isolated repeater: 1000 m up to 187.5 Kbps	Without isolated repeater: 50 m
RS232 Transmitter and receiver		
Transmitter output voltage	+/-5 V min. at RL = 3K Ω	
Transmit output voltage	+/- 15 V DC max.	
Isolation		
RS232 signal to chassis ground	None	
RS232 signal to CPU logic com - mon		
Cable length, shielded	10 m max.	

Battery board signal boards

Model No.	SB BA01	
Order No.	E 288-5BA01-0AA1	
Picture		
Standard		
Power dissipation	0.6W	
Current consumption (5V DC)	18mA	
Current consumption (24V DC)	N/A	
Hold up time	Approximately 1 year	
Battery type	CR2032	
Nominal voltage	3V	
Nominal capacity	240mAh	
Features	Uses CR2032 battery; comes with a red LED (Alarm) to indicate low battery, and a green LED (PW) to indicate that the CPU is powered on and the battery card is connected normally. It can power the RTC clock inside the PLC and retain data for up to 1 year.	

DB expansion board

Analog signal boards


Model No.	SB AE01	
Order No.	E 288-5AE01-0AA1	
Picture		
Standard		
Dimension (W×H×D)	35×52.2×16mm	
Weight	20g	
Current consumption (SM Bus)	0.4W	
Current consumption (5V DC)	50 mA (5 V and 3.3V combined)	
Analog inputs		
Number of inputs	1	
Type	Voltage or current (differential)	
Range	±2.5V、±5V、±10V or 0 to 20mA	
Resolution	11 bits + sign bit (voltage mode)	11 bits (current mode)
Full scale range (data word)	-27648 to 27648	
Cable length (max.)	100 m twisted and shielded	
Diagnostic		
Overflow/underflow	√	

Analog signal boards

Model No.	SB AQ01	
Order No.	E 288-5AQ01-0AA1	
Picture		
Standard		
Dimension (W×H×D)	35×52.2×16mm	
Weight	17.4g	
Power dissipation	1.5W	
Current consumption (SM Bus)	15mA	
Current consumption (24V DC)	40mA(no load)	
Analog outputs		
Number of outputs	1	
Type	Voltage or current	
Range	±10V,0 to 20mA	
Resolution	11 bits + sign bit (voltage mode)	11 bits (current mode)
Full scale range (data word)	Voltage: -27648 to 27648 (-10 V to 10 V)	Current: 0 to 27648 (0 to 20 mA)
Load impedance	Voltage: ≥ 1000 Ω	Current: ≤ 600 Ω
Output behavior in STOP	Last value, substitute value (default value 0)	
Isolation (field side to logic)	None	
Cable length (max.)	10 m twisted and shielded	
Diagnostic		
Overflow/underflow	√	

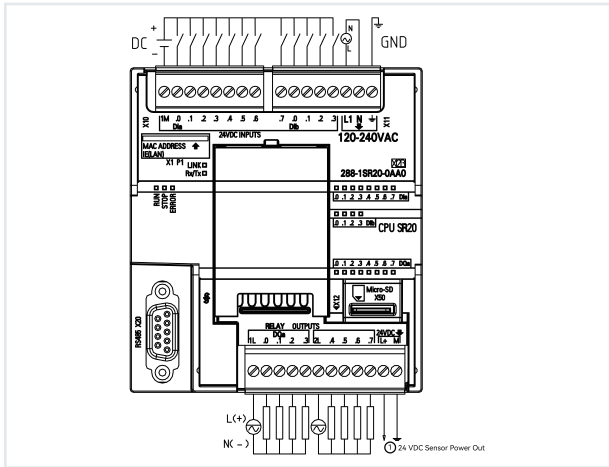
DB expansion board

Digital signal boards

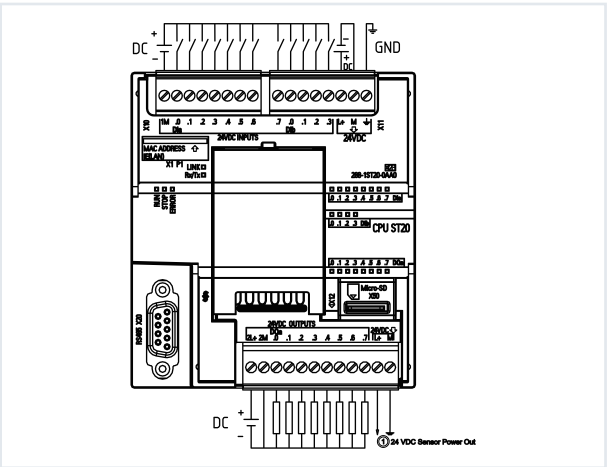
Model No.	SB DT04	
Order No.	E 288-5DT04-0AA1	
Picture		
Standard		
Dimension (W×H×D)	35×52.2×16mm	
Weight	18.1g	
Power dissipation	1.0W	
Current consumption (SM Bus)	50mA	
Current consumption (24V DC)	4 mA / Input used	
Digital inputs		
Number of inputs	2	
Type	Sink (IEC Type 1 sink)	
Rated voltage	24 V DC at 4 mA, nominal	
Continuous permissible voltage	30 V DC max.	
Surge voltage	35 V DC for 0.5 sec.	
Logic 1 signal (min.)	15 V DC at 2.5 mA	
Logic 0 signal (max.)	5 V DC at 1 mA	
Isolation (field side to logic)	500 V AC for 1 minute	
Isolation groups	1	
Filter times	0.2/0.4/0.8/1.6/3.2/6.4/12.8ms	
Number of inputs on simultane-ously	2	
Cable length (max.)	Shielded: 500 m normal inputs	Unshielded: 300 m normal inputs
Digital outputs		
Number of outputs	2	
Output type	Solid state - MOSFET (sourcing)	
Voltage range	20.4 to 28.8 V DC	
Logic 1 signal at max. current	20 V DC min.	
Logic 0 signal at max. current	0.1 V DC max.	
Rated current per point (max.)	0.5A	
Lamp load	5W	
On state contact resistance	0.6 Ω max.	
Leakage current per point	10 μA max.	
Surge current	5 A for 100 ms max.	
Overload protection	No	
Isolation (field side to logic)	500 V AC for 1 minute	
Isolation groups	1	
Rated current per common (max.)	1A	
Inductive clamp voltage	L+ minus 48 V, 1 W dissipation	
Switching delay	0.2ms max. off to on	0.2ms max. on to of
Output behavior in STOP	Last value or substitute value (default value 0)	
Number of outputs on simultane-ously	2	
Cable length (max.)	Shielded: 500 m normal inputs	Unshielded: 150 m normal inputs

Appendix 1: E-Series 200 SMART Wiring Diagram

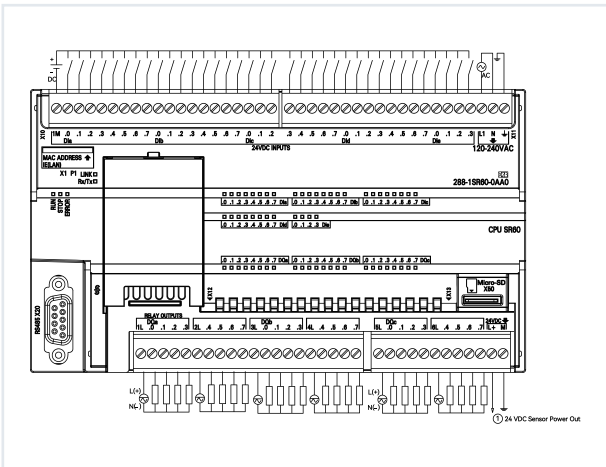
Appendix 1: E-Series 200 SMART Wiring Diagram



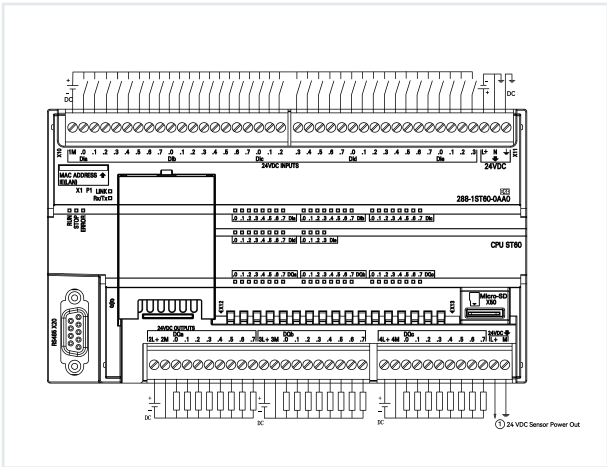
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E3 288-1SR20-0AA1



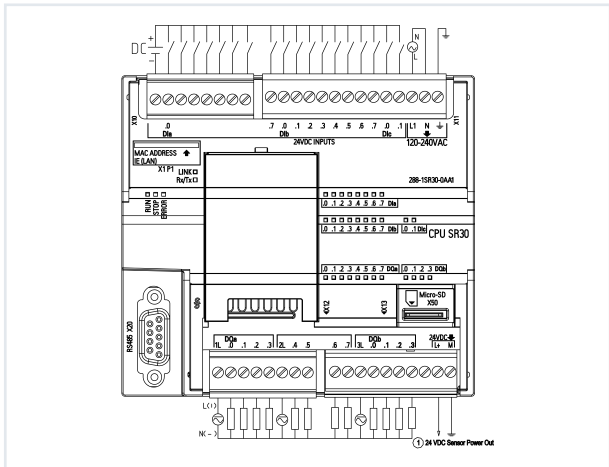
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E5 288-1ST20-0AA1



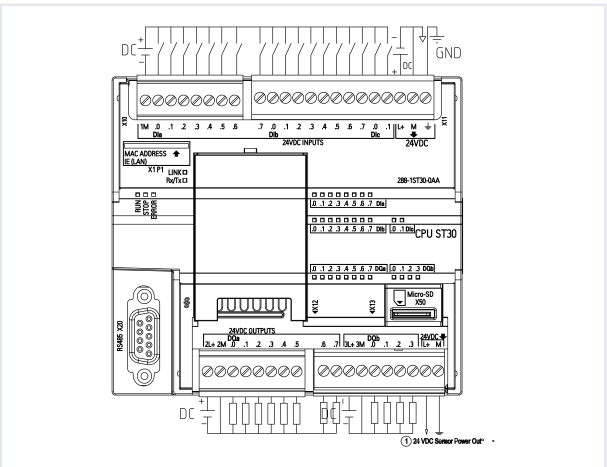
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E3 288-1SR60-0AA1



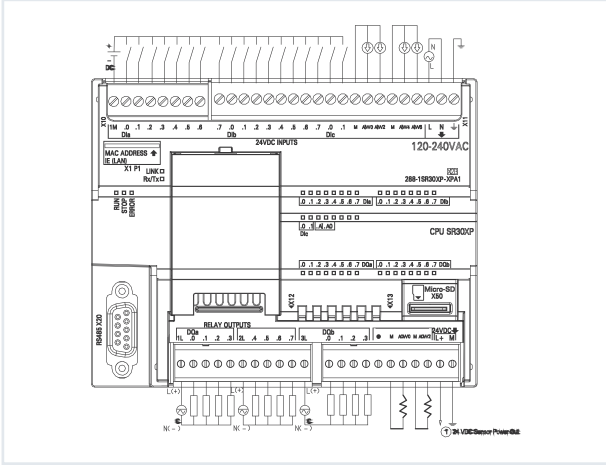
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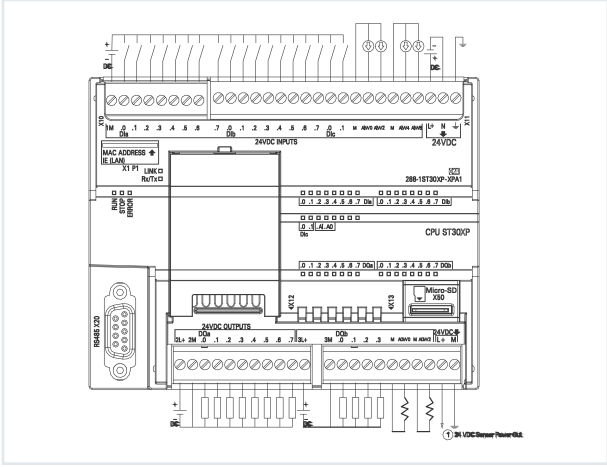
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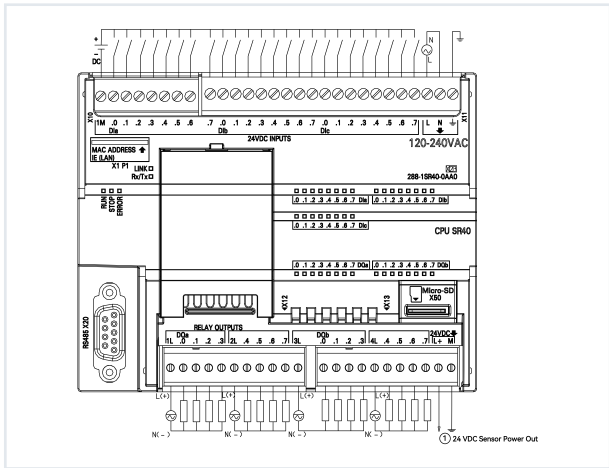
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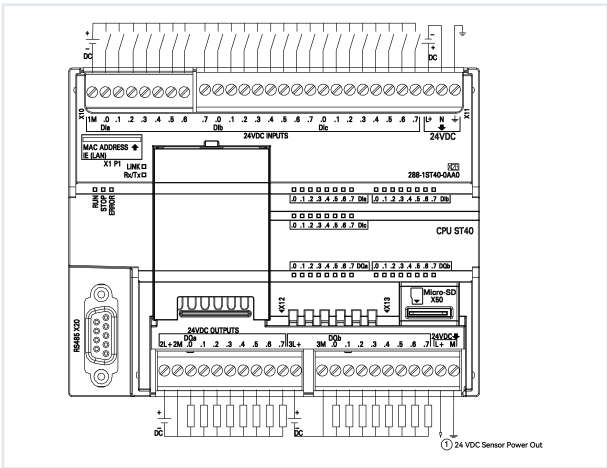
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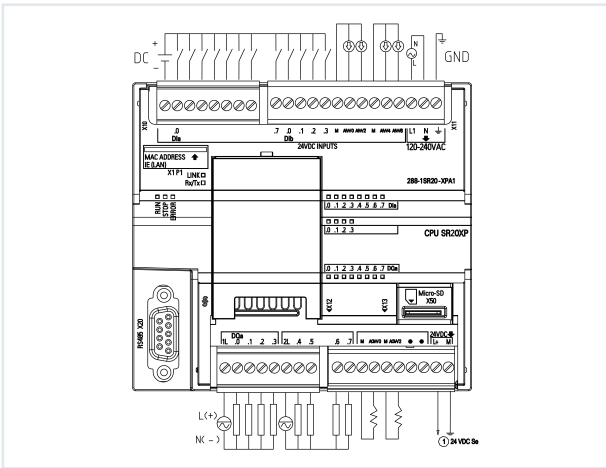
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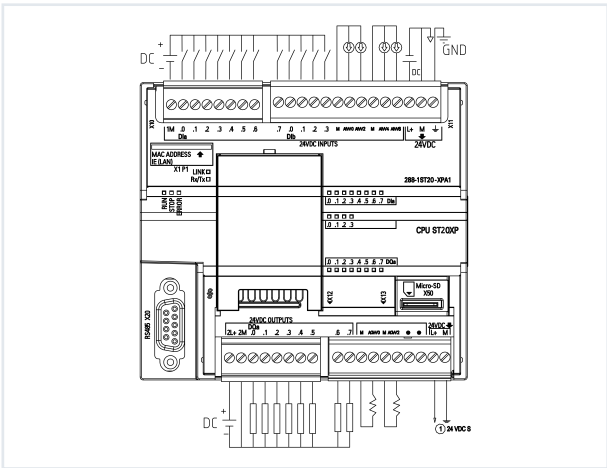
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E3 288-1SR40-0AA1



E7 288-1ST40-0AA1
E5 288-1ST40-0AA1



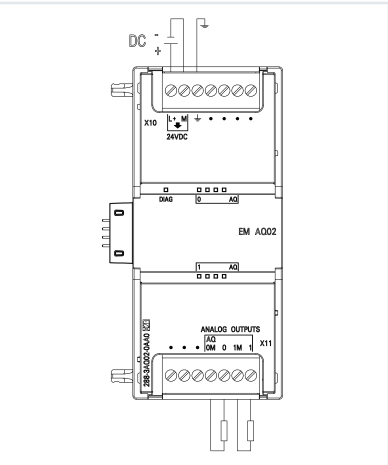
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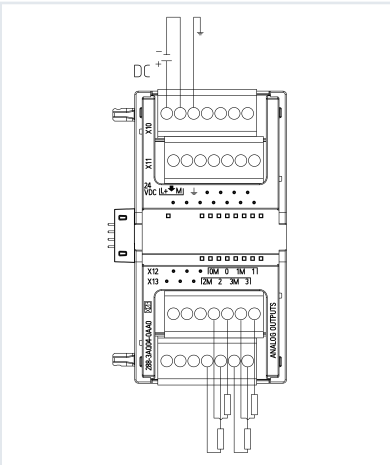
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Appendix 1: E-Series 200 SMART Wiring Diagram

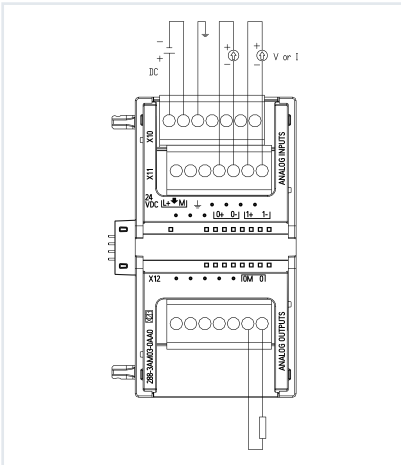
Appendix 1: E-Series 200 SMART Wiring Diagram



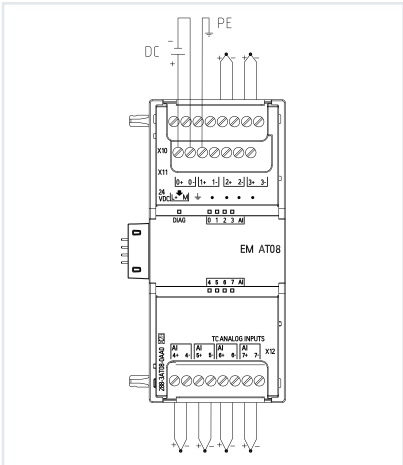
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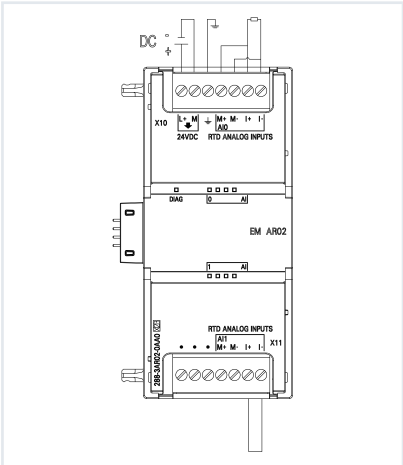
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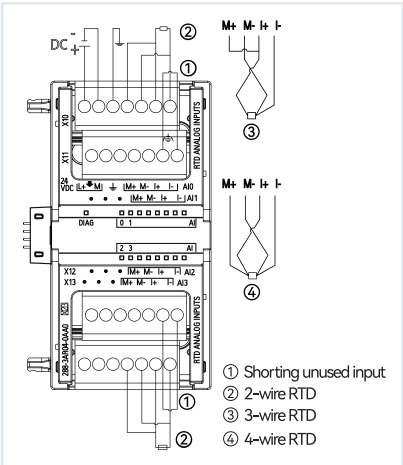
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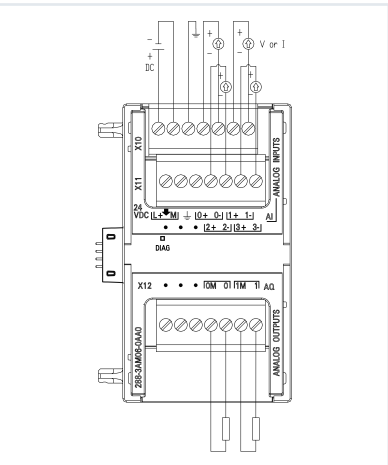
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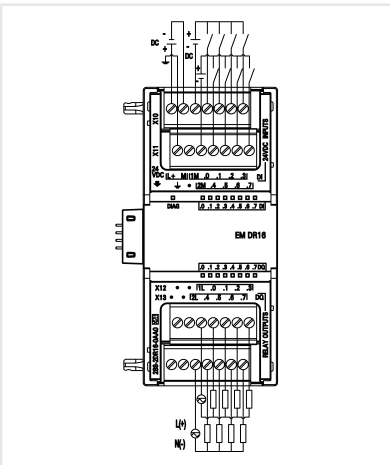
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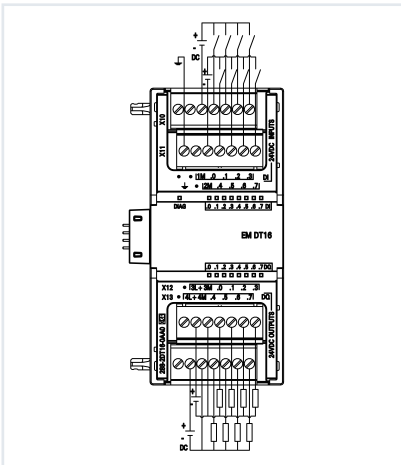
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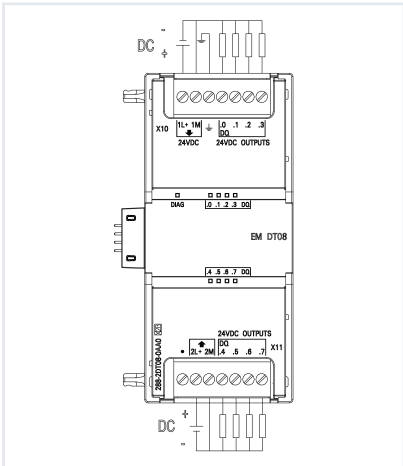
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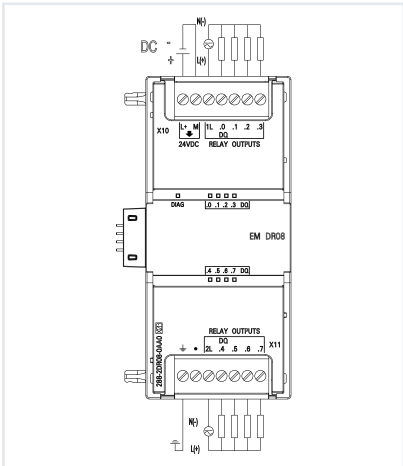
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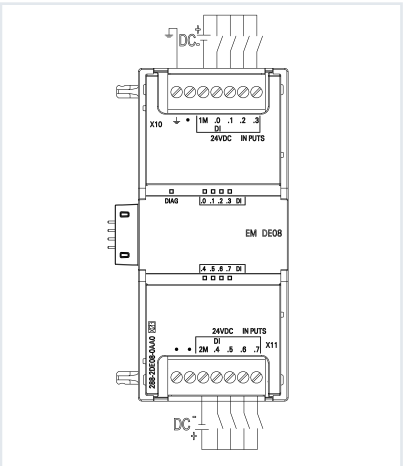
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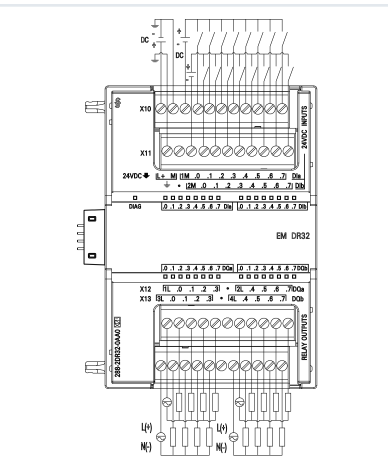
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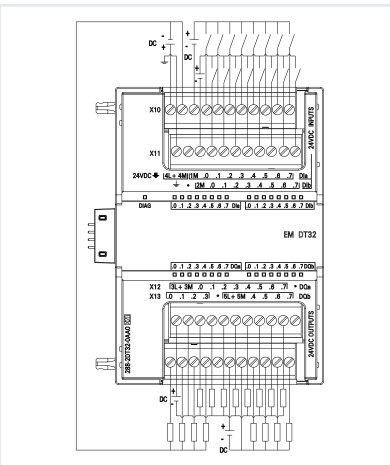
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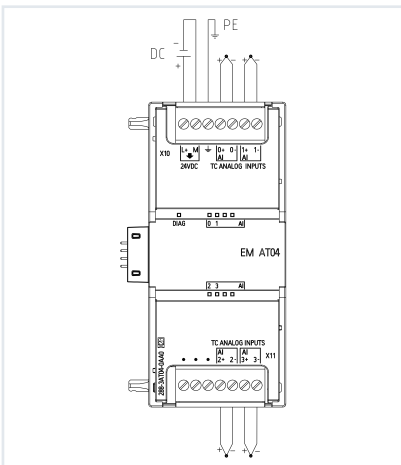
E 288-2DE08-0AA1



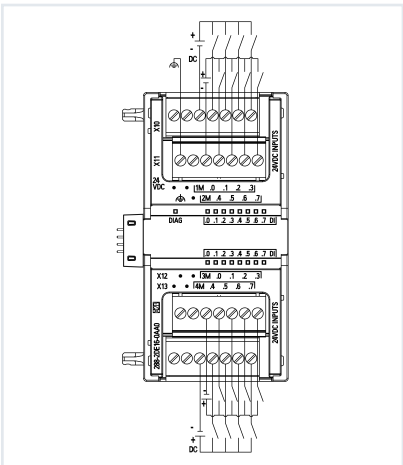
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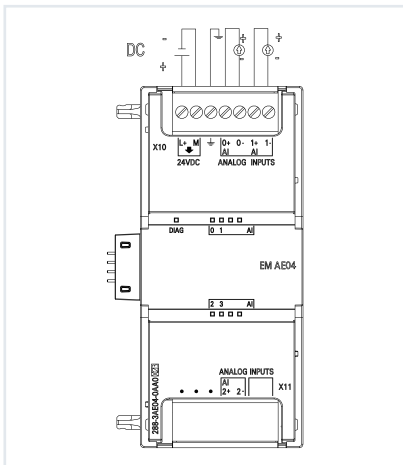
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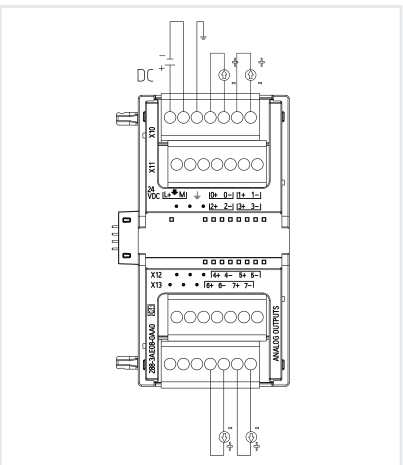
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E 288-2DE16-0AA1

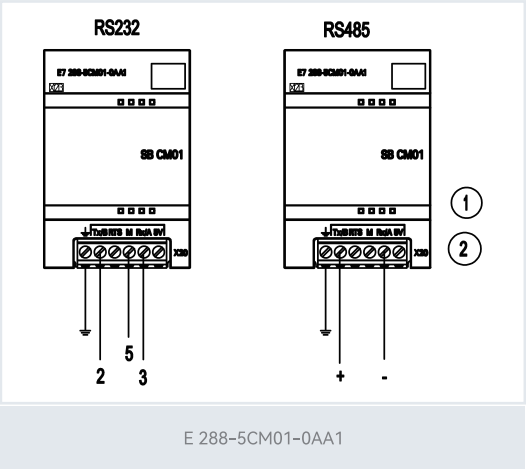
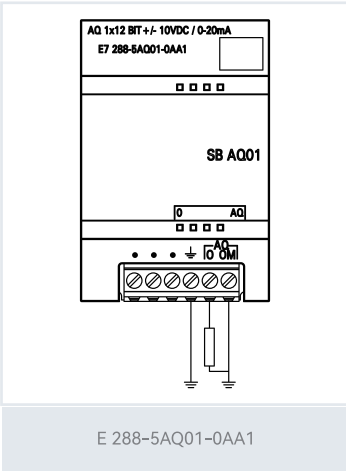
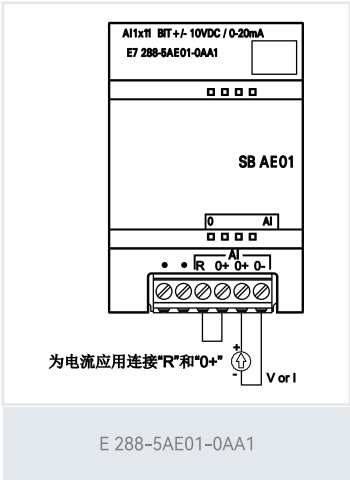
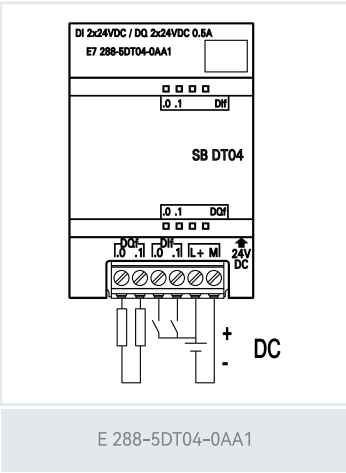
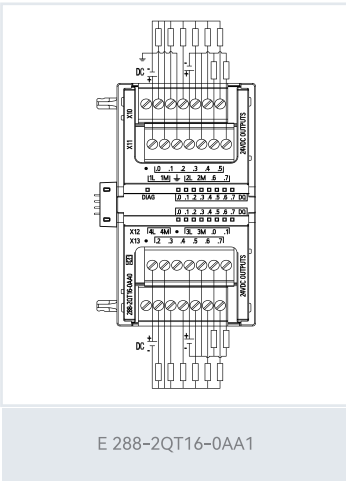
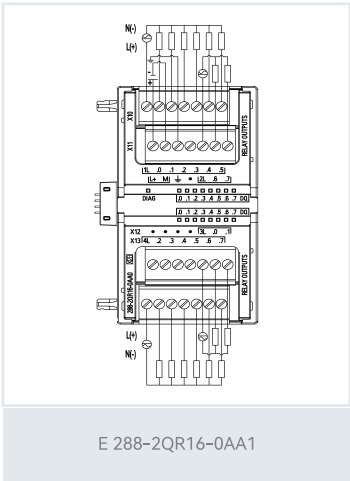
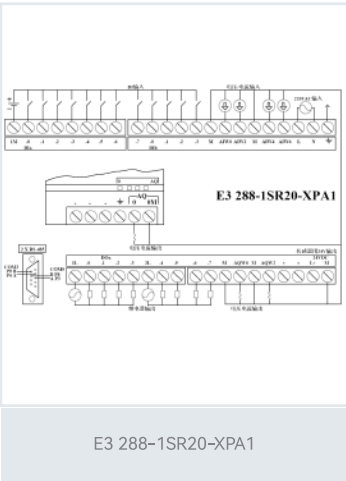


E 288-3AE04-0AA0
E 288-3AE04-0AA1



E 288-3AE08-0AA0
E 288-3AE08-0AA1

Appendix 1: E-Series 200 SMART Wiring Diagram



Appendix2:The corresponding table of SMART AT08 module DIP switch Settings

Model number		E-288-3AT08-0AA1
Location	Select an item	Set
SW1 ~ SW3	Thermocouple type: J、K、T、E、R、S、N、±80mV	H 7/E 7smart AT08 thermocouple module type selection and DIP switch SW1-SW3 corresponding table
SW4	Keep it unused	
SW5	Detection direction of broken wire	0: positive calibration (3276.7) 1: negative calibration (-3276.8)
SW6	Break-line detection enabled	0: Enable 1: prohibit
SW7	Choice of unit of measurement	0: Celsius, 1: Fahrenheit
SW8	Cold end compensation	0: Yes 1: No

TC type	SW1	SW2	SW3
J(Default)	0	0	0
K	0	0	1
T	0	1	0
E	0	1	1
R	1	0	0
S	1	0	1
N	1	1	0
+/-80mv	1	1	1

Appendix 3: Ordering Data

E7 200Smart CPU Standard Edition

Model no.	Description	Order no.
E7 ST20	CPU ST20 Transistor , 12DI/8DO,1*RJ45, 2*RS485, 2*100KHz high-speed pulse, Expandable to 6IO	E7 288-1ST20-0AA1
E7 SR20	CPU SR20 Relay, 12DI/8DO,1*RJ45, 2*RS485, Expandable to 6IO	E7 288-1SR20-0AA1
E7 ST30	CPU ST30 Transistor , 18DI/12DO,1*RJ45, 2*RS485, 3*100KHz high-speed pulse, Expandable to 6IO	E7 288-1ST30-0AA1
E7 SR30	CPU SR30 Relay, 18DI/12DO,1*RJ45, 2*RS485, Expandable to 6IO	E7 288-1SR30-0AA1
E7 ST40	CPU ST40 Transistor , 24DI/16DO,1*RJ45, 2*RS485, 3*100KHz high-speed pulse, Expandable to 6IO	E7 288-1ST40-0AA1
E7 SR40	CPU SR40 Relay, 24DI/16DO,1*RJ45, 2*RS485, Expandable to 6IO	E7 288-1SR40-0AA1
E7 ST60	CPU ST60 Transistor , 36DI/24DO,1*RJ45, 2*RS485, 3*100KHz high-speed pulse, Expandable to 6IO	E7 288-1ST60-0AA1
E7 SR60	CPU SR60 Relay, 36DI/24DO,1*RJ45, 2*RS485, Expandable to 6IO	E7 288-1SR60-0AA1
E7 ST20XP	CPU ST20XP Transistor , 12DI/8DO/4AI/2AO,1*RJ45, 2*RS485, 3*100KHz high-speed pulse, Expandable to 6IO	E7 288-1ST20-XPA1
E7 SR20XP	CPU SR20XP Relay, 12DI/8DO/4AI/2AO,1*RJ45, 2*RS485, Expandable to 6IO	E7 288-1SR20-XPA1
E7 ST30XP	CPU ST30XP Transistor , 18DI/12DO/4AI/2AO,1*RJ45, 2*RS485, 3*100KHz high-speed pulse, Expandable to 6IO	E7 288-1ST30-XPA1
E7 SR30XP	CPU SR30XP Relay, 18DI/12DO/4AI/2AO,1*RJ45, 2*RS485, Expandable to 6IO	E7 288-1SR30-XPA1

E5 200Smart CPU Basic Edition

Model no.	Description	Order no.
E5 ST20	CPU ST20 Transistor , 12DI/8DO, 1*RJ45, 1*RS485, Expandable to 6IO	E5 288-1ST20-0AA1
E5 SR20	CPU SR20 Relay, 12DI/8DO, 1*RJ45, 1*RS485, Expandable to 6IO	E5 288-1SR20-0AA1
E5 ST30	CPU ST30 Transistor , 18DI/12DO, 1*RJ45, 1*RS485, Expandable to 6IO	E5 288-1ST30-0AA1
E5 SR30	CPU SR30 Relay, 18DI/12DO, 1*RJ45, 1*RS485, Expandable to 6IO	E5 288-1SR30-0AA1
E5 ST40	CPU ST40 Transistor , 24DI/16DO, 1*RJ45, 1*RS485, Expandable to 6IO	E5 288-1ST40-0AA1
E5 SR40	CPU SR40 Relay, 24DI/16DO, 1*RJ45, 1*RS485, Expandable to 6IO	E5 288-1SR40-0AA1
E5 ST60	CPU ST60 Transistor , 36DI/24DO, 1*RJ45, 1*RS485, Expandable to 6IO	E5 288-1ST60-0AA1
E5 SR60	CPU SR60 Relay, 36DI/24DO, 1*RJ45, 1*RS485, Expandable to 6IO	E5 288-1SR60-0AA1

E3 200Smart CPU Economy Edition

Model no.	Description	Order no.
E3 SR20	CPU SR20 Relay, 12DI/8DO, 1*RJ45, 1*RS485, No extension support	E3 288-1SR20-0AA1
E3 SR20XP	CPU SR20XP Relay, 12DI/8DO/4AI/3AO, 1*RJ45, 2*RS485, No extension support	E3 288-1SR20-XPA1
E3 SR30	CPU SR30 Relay, 18DI/12DO, 1*RJ45, 1*RS485, No extension support	E3 288-1SR30-0AA1
E3 SR40	CPU SR40 Relay, 24DI/16DO, 1*RJ45, 1*RS485, No extension support	E3 288-1SR40-0AA1
E3 SR60	CPU SR60 Relay, 36DI/24DO, 1*RJ45, 1*RS485, No extension support	E3 288-1SR60-0AA1

Appendix 3: Ordering Data

E 200Smart Digital Module

Model no.	Description	Order no.
E DE08	EM DE08 Digital Input Modules, 8DI, 24VDC	E 288-2DE08-0AA1
E DE16	EM DE16 Digital Input Modules, 16DI, 24VDC	E 288-2DE16-0AA1
E DR08	EM DR08 Digital Output Modules, 8DO, Relay output	E 288-2DR08-0AA1
E DT08	EM DT08 Digital Output Modules, 8DO, Transistor output	E 288-2DT08-0AA1
E QR16	EM QR16 Digital Output Modules, 16DO, Relay output	E 288-2QR16-0AA1
E QT16	EM QT16 Digital Output Modules, 16DO, Transistor output	E 288-2QT16-0AA1
E DR16	EM DR16 Digital Input/Output Modules, 8DI/8DO, Relay output	E 288-2DR16-0AA1
E DT16	EM DT16 Digital Input/Output Modules, 8DI/8DO, Transistor output	E 288-2DT16-0AA1
E DR32	EM DR32 Digital Input/Output Modules, 16DI/16DO, Relay output	E 288-2DR32-0AA1
E DT32	EM DT32 Digital Input/Output Modules, 16DI/16DO, Transistor output	E 288-2DT32-0AA1

E 200Smart Analog Module Unipolar Version (Unipolarity)

Model no.	Description	Order no.
E AE04	EM AE04 Analog Input Modules, 4AI, 0-20mA/0-10V	E 288-3AE04-0AA1
E AE08	EM AE08 Analog Input Modules, 8AI, 0-20mA/0-10V	E 288-3AE08-0AA1
E AQ02	EM AQ02 Analog Output Modules, 2AO, 0-20mA/0-10V	E 288-3AQ02-0AA1
E AQ04	EM AQ04 Analog Output Modules, 4AO, 0-20mA/0-10V	E 288-3AQ04-0AA1
E AM03	EM AM03 Analog Input/Output Modules, 2AI/1AO, 0-20mA/0-10V	E 288-3AM03-0AA1
E AM06	EM AM06 Analog Input/Output Modules, 4AI/2AO, 0-20mA/0-10V	E 288-3AM06-0AA1

E 200Smart Analog Module Bipolar Version (Bipolar)

Model no.	Description	Order no.
E AE04-b	EM AE04 Analog Input Modules, 4AI, 0-20mA/±2.5V/±5V/±10V	E 288-3AE04-0AA0
E AE08-b	EM AE08 Analog Input Modules, 8AI, 0-20mA/±2.5V/±5V/±10V	E 288-3AE08-0AA0
E AQ02-b	EM AQ02 Analog Output Modules, 2AO, 0-20mA/±10V	E 288-3AQ02-0AA0
E AQ04-b	EM AQ04 Analog Output Modules, 4AO, 0-20mA/±10V	E 288-3AQ04-0AA0
E AM03-b	EM AM03 Analog Input/Output Modules, 2AI/1AO, 0-20mA/±2.5V/±5V/±10V	E 288-3AM03-0AA0
E AM06-b	EM AM06 Analog Input/Output Modules, 4AI/2AO, 0-20mA/±2.5V/±5V/±10V	E 288-3AM06-0AA0

E 200Smart Temperature Measurement Module (Temperature measurement)

Model no.	Description	Order no.
E AR02	EM AR02 Thermal Resistor Input Module, 2RTD	E 288-3AR02-0AA1
E AR04	EM AR04 Thermal Resistor Input Module, 4RTD	E 288-3AR04-0AA1
E AT04	EM AT04 Thermocouple Input Module, 4TC	E 288-3AT04-0AA1
E AT08	EM AT08 Thermocouple Input Module, 8TC	E 288-3AT08-0AA1

E 200Smart Communication DB expansion board

Model no.	Description	Order no.
E DB CM01	DB CM01 Serial port expansion signal board, RS 485, Support E7/E5 series CPU expansion	E 288-5CM01-0AA1
E DB DT04	DB DT04 Digital expansion signal board, Digital Input/Output Modules, 2DI/2DO, Transistor output	E 288-5DT04-0AA1
E DB AE01	DB AE01 Analog expansion signal board, Analog input, 1AI	E 288-5AE01-0AA1
E DB AQ01	DB AQ01 Analog expansion signal board, Analog output, 1AO	E 288-5AQ01-0AA1
E DB BA01	Battery signal board, model comes with a built-in button cell battery, no additional purchase required by the user	E 288-5BA01-0AA1

Service and pledge

The stage behind is the key to success, and after-sales service is the guarantee of life



3 years warranty

Within 3 years from the date of delivery, we can offer the unconditional free maintenance once occurring product quality problem.



Lifetime maintenance

We offer lifelong maintenance and repair services for the users of HUCEEN products