HUCEEN

HUCEEN

200SMART PLC

Product Catalog

E7-200 SMART
E5-200 SMART
E3-200 SMART

Shenzhen Huceen Automation Technology CO.,LTD

5F, NO.1 Building, Esun 3D Industrial Park, Zhongwu Community, Hangcheng Street, BaoAn District, Shenzhen.

+86 13713990149 Caroline liu

info@huceen.com

www.huceen.com

www.huceen.com

About us

Founded in 2015, Shenzhen Huceen Automation Technology Co., Ltd. focuses on the R&D, production, sales, and technical services of core industrial automation products.

With a strong R&D team and extensive industry experience, HUCEEN delivers high-quality, high-performance, and cost-competitive automation products and integrated solutions.

The company has established an international sales and service network covering major cities in China and operates multiple overseas offices. Total product shipments have exceeded one million units, and HUCEEN has cooperated with more than 40 listed companies.

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.

100W+
Quantity of shipment

40+
Cooperated Listed Company

100+
Sales and service network

National High-tech Enterprise

30+ Technology patents

4 core technologies

Huceen product system

PLC

E 200Smart

E7 200Smart
E5 200Smart
E3 200Smart

H7-1200

Distributed Remote I/O

Internet of Things

H-Box
Smart Box
IoT PLC E7 200 Smart
HCloud industrial cloud platform

HMI

Hpanel 7-inch
Hpanel 10-inch

HUCEEN

CATALOG

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 "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
- Integrated 1 RJ45 network port, supports free protocol (MbusTCP), GET/PUT and HMI, supports program upload and download, up to 32 links
- Support PID wizard
- Support RTC clock
- Support system/ subroutine hidden encryption
- Support expansion of 6 E 200SMART modules and E 200SMART IO signal boards
- Support 4 analog inputs/ 2 analog outputs
- Support TF card to upgrade firmware and download CPU program
- 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
- 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

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 4 single-ended counters and 1 A/B phase counter
- Integrated 1 RJ45 network port, supports free protocol (MbusTCP), GET/PUT and HMI, supports program upload and download, up to 5 links
- Support PID wizard
- Support RTC clock
- Support system/ subroutine hidden encryption
- Support expansion of 6 E 200SMART modules and E 200SMART IO signal boards
- DB9 integrates 1 RS485 port, supports modbus/PPI/free port communication protocol, and can be expanded to 2 RS485 ports with 5CM01
- Support TF card to upgrade firmware and download CPU program

E3 200Smart CPU Economy Edition

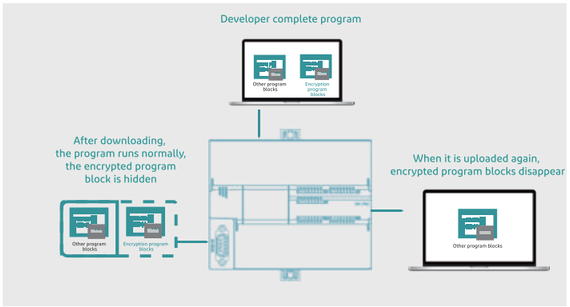
Discrete control · process control

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 4 single-ended counters and 1 A/B phase counter
- Integrated with 1 RJ45 port, supports free protocol (MbusTCP), GET/PUT and HMI, supports program upload and download, and shares 5 links
- Support PID wizard
- Maximum program capacity can reach 30K
- Integrated 1 DB9-RS485 port, supports modbus/PPI/freeport communication protocols
- Support TF card to upgrade firmware and download CPU program
- Support system/subroutine hidden encryption

E 200 SMART PLC innovative functions

Hidden encryption



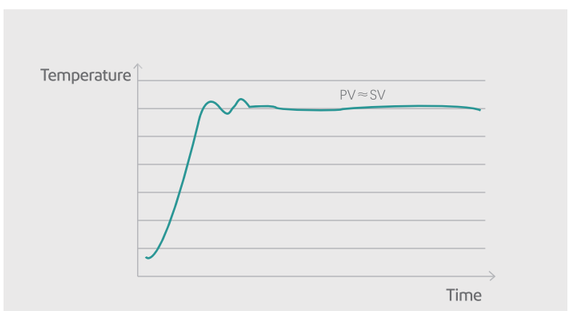
E 200 SMART CPU supports the subroutine's custom encryption function - hidden encryption. After the encrypted subroutine is downloaded for the first time, it will enter the hidden mode and the CPU can run normally. However, if the program is uploaded, the custom encrypted subroutine will not be uploaded and 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 "SMART" software, can run smoothly on Windows 7 or Windows 10 operating systems, supports LAD, STL, and FBD programming languages.

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

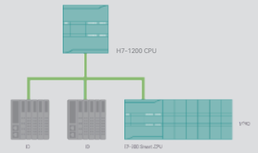
The CPU integrates up to 3 high-speed pulse outputs with a frequency of up to 100Khz, supports PWN/PTO output mode and a variety of motion modules, and can freely set the motion envelope. With the easy-to-use wizard setting function, it can quickly realize the functions of equipment speed regulation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

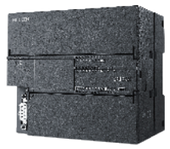
E7 SMART CPU

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℃	
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	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	–

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	

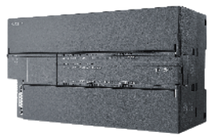
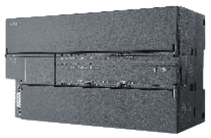
E7 SMART CPU

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℃	
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	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	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℃	
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(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℃	
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）	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)	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℃	
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）	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)	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	–

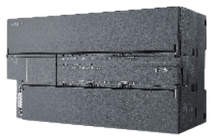
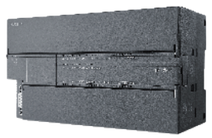
E5 SMART CPU

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℃	
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）	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	11.7A 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℃	
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）	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
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

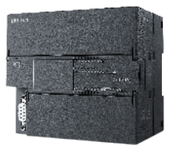
E3 SMART CPU

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 Interrupt Edge	2 in total, T32 and T96 have a resolution of 1ms 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)	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
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）	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
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

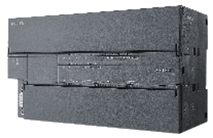
E3 SMART CPU

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）	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
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）	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
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 288-3AE04-0AA1	E 288-3AE08-0AA0	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	Bipolar, 8-channel analog input, resolution 12 bits, full channel support current/voltage input	Unipolarity, 8-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℃/0~55℃）				
.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 voltag	Overflow/ underflow, short circuit to ground, 24V DC low voltage	Overflow/ underflow, 24V DC low voltag
.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℃ / 0.1℉
.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℃
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℃ / 0.1℉
.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℃
Cable Loop Resistance (Max)	100Ω
Cable Length	100m

PID module

Model No.	EM AT04-PID
Order No.	E 288-3AT04-PIA1
Picture	
Product Description	4-channel thermocouple input PID module
Standard	
Dimension (W×H×D)	47×100×81mm
Power Consumption	1.5W
Current Consumption(SM bus)	120mA
Current Consumption(24V DC)	40mA
Adapt to CPU types	E7 series
Thermocouple input	
Number of Inputs	4
Input type	TC type: S, T, R, E, N, K, J (choose one) Voltage range: +/- 80 mV

Measurement accuracy Measurement range	Type	Below the min value of the range[1]	Lower limit of rated range	Upper limit of rated range	Max value outside range[2]	Rated range accuracy at 25℃	Rated range accuracy from -20℃ to 60℃
	J	-210.0°C	-150.0°C	1200.0°C	1450.0°C	±0.3 °C	±0.6 °C
	K	-270.0°C	-200.0°C	1372.0°C	1622.0°C	±0.4°C	±1.0°C
	T	-270.0°C	-200.0°C	400.0°C	540.0°C	±0.5 °C	±1.0°C
	E	-270.0 °C	-200.0 °C	1000.0°C	1200.0 °C	±0.3 °C	±0.6°C
	R & S	-50.0°C	100.0°C	1768.0°C	2019.0°C	±1.0°C	±2.5°C
	B	0.0°C	200.0°C	800.0°C	--	±2.0 °C	±2.5°C
		--	800.0°C	1820.0°C	1820°C	±1.0°C	±2.3°C
	N	-270.0°C	-200.0°C	1300.0°C	1550.0°C	±1.0 °C	±1.6°C
	C	0.0°C	100.0°C	2315.0°C	2500.0°C	±0.7°C	±2.7°C
	TXK/XK(L)	-200.0°C	-150.0°C	800.0°C	1050°C	±0.6 °C	±1.2°C
	Voltage	-32512	-27648 -80mV	27648 80mV	32511	±0.05%	±0.1%

[1] "Below the min value of the range"The following thermocouple value is reported as -32768.

[2] "Max value outside range"The thermocouple value exceeding the maximum value was reported as 32767.

Measuring principle	Sigma-delta
Resolution	
Temperature	0.1°C / 0.1°F
Voltage	15 bits+ symbol bits
Max withstand voltage	±60V
Noise suppression	For the selected filter settings (10 Hz, 50 Hz, 60 Hz, or 400 Hz) is 85 dB
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 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
Full channel update time	1220ms（10Hz inhibition）260ms（50Hz inhibition）220ms（60Hz inhibition）
PID Calculation Specifications	
PID Calculation Channels	4-channel
PID Algorithm	PID+FUZZY parameter self-tuning
Sampling Time	0.5 s
Min Output Pulse Width	10ms (max pulse output frequency 100Hz)
PID Type	P, PI, PD, PID type
PID Output Type	Analog or PWM pulse width control
PID Output Polarity	Bipolar or unipolar
PID Output Stages	Supports up to two stages in series
PID Parameter Address	A=(2048+S*256)+16*C
PID Positive Pulse Output Address	X=(2048+S*256)+12
PID Negative Pulse Output Address	Y=(2048+S*256)+13

S represents the slot number of the module (range: 0-5).
C represents the channel number; 0-7 for 3AT08-PIA1, and 0-3 for 3AT04-PIA1.

PID module

Model No.	EM AT08-PID
Order No.	E 288-3AT08-PIA1
Picture	
Product Description	8-channel thermocouple input PID module
Standard	
Dimension (W×H×D)	47×100×81mm
Power Consumption	1.5W
Current Consumption(SM bus)	120mA
Current Consumption(24V DC)	45mA
Adapt to CPU types	E7 series
Thermocouple input	
Number of Inputs	8
Input type	TC type: S, T, R, E, N, K, J (choose one) Voltage range: +/- 80 mV

Measurement accuracy Measurement range	Type	Below the min value of the range[1]	Lower limit of rated range	Upper limit of rated range	Max value outside range[2]	Rated range accuracy at 25℃	Rated range accuracy from -20℃ to 60℃
	J	-210.0°C	-150.0°C	1200.0°C	1450.0°C	±0.3 °C	±0.6 °C
	K	-270.0°C	-200.0°C	1372.0°C	1622.0°C	±0.4°C	±1.0°C
	T	-270.0°C	-200.0°C	400.0°C	540.0°C	±0.5 °C	±1.0°C
	E	-270.0 °C	-200.0 °C	1000.0°C	1200.0 °C	±0.3 °C	±0.6°C
	R & S	-50.0°C	100.0°C	1768.0°C	2019.0°C	±1.0°C	±2.5°C
	B	0.0°C	200.0°C	800.0°C	--	±2.0 °C	±2.5°C
		--	800.0°C	1820.0°C	1820°C	±1.0°C	±2.3°C
	N	-270.0°C	-200.0°C	1300.0°C	1550.0°C	±1.0 °C	±1.6°C
	C	0.0°C	100.0°C	2315.0°C	2500.0°C	±0.7°C	±2.7°C
	TXK/XK(L)	-200.0°C	-150.0°C	800.0°C	1050°C	±0.6 °C	±1.2°C
	Voltage	-32512	-27648 -80mV	27648 80mV	32511	±0.05%	±0.1%

[1] "Below the min value of the range"The following thermocouple value is reported as -32768.

[2] "Max value outside range"The thermocouple value exceeding the maximum value was reported as 32767.

Measuring principle	Sigma-delta
Resolution	
Temperature	0.1°C / 0.1°F
Voltage	15 bits+ symbol bits
Max withstand voltage	±60V
Noise suppression	For the selected filter settings (10 Hz, 50 Hz, 60 Hz, or 400 Hz) is 85 dB
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时，>120dB
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
Full channel update time	2420ms（10Hz inhibition）500ms（50Hz inhibition）420ms（60Hz inhibition）
PID Calculation Specifications	
PID Calculation Channels	8-channel
PID Algorithm	PID+FUZZY parameter self-tuning
Sampling Time	0.5 s
Min Output Pulse Width	10ms (max pulse output frequency 100Hz)
PID Type	P, PI, PD, PID type
PID Output Type	Analog or PWM pulse width control
PID Output Polarity	Bipolar or unipolar
PID Output Stages	Supports up to two stages in series
PID Parameter Address	A=(2048+S*256)+16*C
PID Positive Pulse Output Address	X=(2048+S*256)+12
PID Negative Pulse Output Address	Y=(2048+S*256)+13

S represents the slot number of the module (range: 0-5).
C represents the channel number; 0-7 for 3AT08-PIA1, and 0-3 for 3AT04-PIA1.

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 Rejectio	>120dB	
Repeatability	0.05%FS	
Max Power Consumption of the Sensor r	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	None
RS 485 signal to chassis ground	
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	None
RS232 signal to chassis ground	
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
	
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

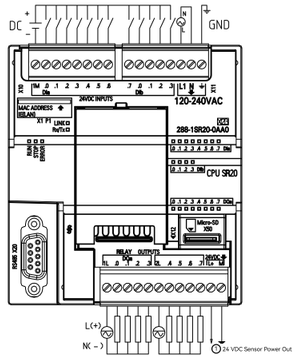
Digital signal boards

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

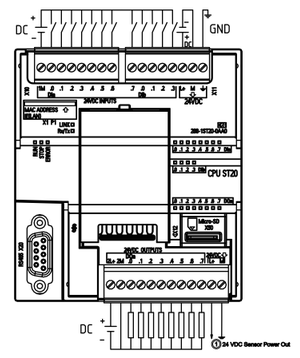
DB expansion board

SB AR02	SB AR02						
Order No.	E 288 5AR02 0AA1						
Order No.							
Standard							
Dimension (W×H×D)	35×52.2×16						
Weight	17.4g						
Power Consumption	1.5W						
Current Consumption (SM Bus)	70mA						
Current Consumption (24V DC)	--						
Analog input							
Input points	2						
Type	Module reference RTD and Ω						
scope	±10V or 0-20mA						
Measurement accuracy Measurement range	Temperature coefficient	RTD type	Below minimum range	Lower limit of rated range	Upper limit of rated range	Max value outside range	Rated range accuracy at 25℃
	PT 0.003850	Pt 100	-243.0℃	-200.0℃	850.0℃	1000.0℃	±0.5℃
	ITS90	Pt 500					
	DIN EN 60751	Pt 1000					
	NI 0.006180	Ni120	-105.0℃	-60.0℃	250.0℃	295.0℃	±0.5℃
		Ni500					
		Ni1000					
	LG-NI 0.005000	LG-Ni 1000	-105.0℃	-60.0℃	250.0℃	295.0℃	±0.5℃
	CU 0.004280	Cu10	-240.0℃	200.0℃	200.0℃	240.0℃	±4.0℃
		Cu50	-240.0℃	200.0℃	200.0℃	240.0℃	±1.7℃
	Resistance type	Below the min value of the range	Below minimum range	Upper limit of rated range	Max value outside range	Rated range accuracy at 25℃	Rated range accuracy from 20 ℃ to 60 ℃
	48Ω	Not applicable	0 (0 Ω)	27648 (48 Ω)	56.4384 Ω	±0.4%	±0.5%
	150Ω	Not applicable	0 (0 Ω)	27648 (150 Ω)	176.383 Ω	±0.05%	±0.1%
	300Ω	Not applicable	0 (0 Ω)	27648 (300 Ω)	352.767 Ω	±0.05%	±0.1%
	600Ω	Not applicable	0 (0 Ω)	27648 (600 Ω)	705.534 Ω	±0.05%	±0.1%
	3000Ω	Not applicable	0 (0 Ω)	27648 (3000Ω)	3527.4 Ω	±0.05%	±0.1%
Resolution	temperature: 0.1 °C/0.1 °F						
Max Voltage Withstand	± 60VDC						
Noise Suppression	85 dB (10 Hz/50 Hz/60 Hz/400 Hz)						
Common-Mode Rejection	> 120 dB						
Input Impedance	≥ 10 MΩ						
Isolation (Field side vs. Logic side)	500 V AC						
Channel isolation	none						
Repeatability	±0.05% FS						
Max sensor power consumption	0.5 m W						
Measurement principle	Sigma-Delta						
Full channel update time	1967ms（10Hz inhibition） 520ms（50Hz inhibition） 470ms（60Hz inhibition） 270ms（400Hz inhibition）						
Wire breakage detection time	A disconnection detection is performed every 2 seconds, with each detection taking approximately 23ms.						
Wire resistance	10Ω RTD except: 20 Ω 10 Ω RTD: 2.7 Ω						
Cable length (max)	100m, shielded twisted pair						
Communication interaction							
CM01 configuration	Address 2, RS485/232 optional, baud rate 19200 bps						
RTD channel data address	Channel 0: VW7984 Channel 1: VW7986						
Interaction with CPU	Interaction method: Direct writing to the V area via PPI protocol Interaction timing: Write once every 100ms, each write operation involves 2 channels and a total of 4 bytes.						
Diagnosis							
Overflow/Underflow/Broken Line	√						

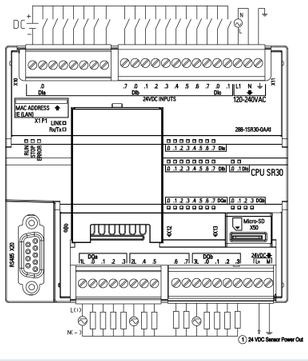
Appendix 1: E-Series 200 SMART Wiring Diagram



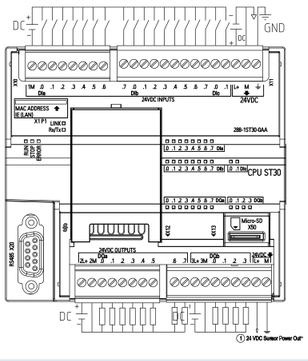
E7 288-1SR20-0AA1 E5 288-1SR20-0AA1
E3 288-1SR20-0AA1



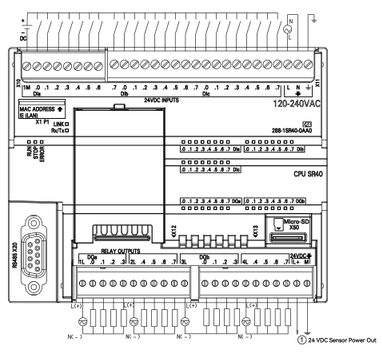
E7 288-1ST20-0AA1 E5 288-1ST20-0AA1



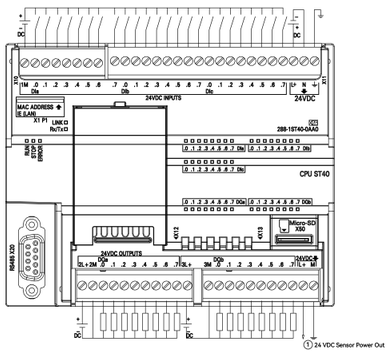
E7 288-1SR30-0AA1 E5 288-1SR30-0AA1
E3 288-1SR30-0AA1



E7 288-1ST30-0AA1 E5 288-1ST30-0AA1

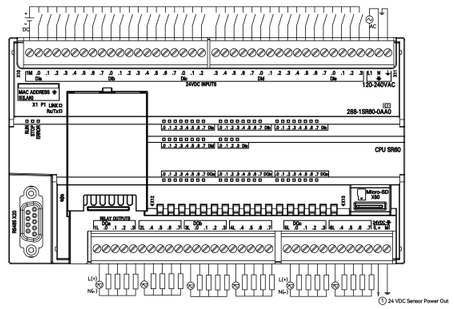


E7 288-1SR40-0AA1 E5 288-1SR40-0AA1
E3 288-1SR40-0AA1

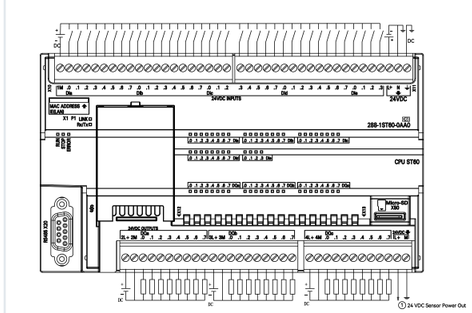


E7 288-1ST40-0AA1 E5 288-1ST40-0AA1

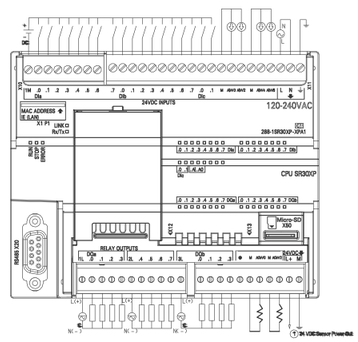
Appendix 1: E-Series 200 SMART Wiring Diagram



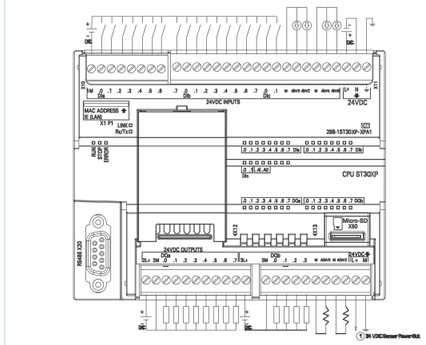
E7 288-1SR60-0AA1 E5 288-1SR60-0AA1
E3 288-1SR60-0AA1



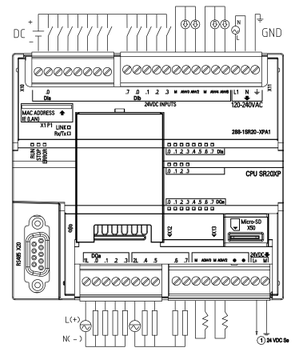
E7 288-1ST60-0AA1
E5 288-1ST60-0AA1



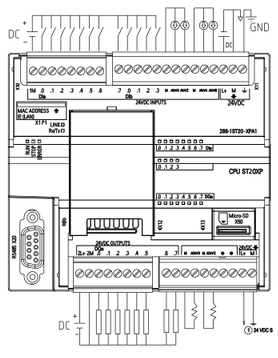
E7 288-1SR30-XPA1



E7 288-1ST30-XPA1

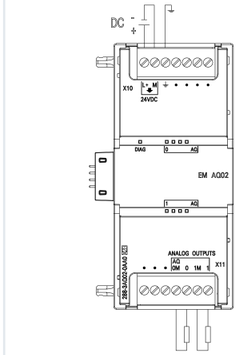


E7 288-1SR20-XPA1

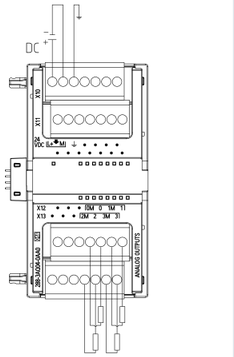


E7 288-1ST20-XPA1

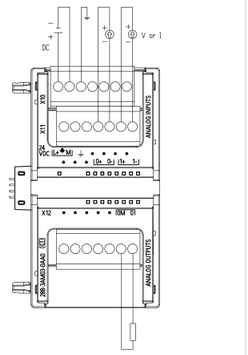
Appendix 1: E-Series 200 SMART Wiring Diagram



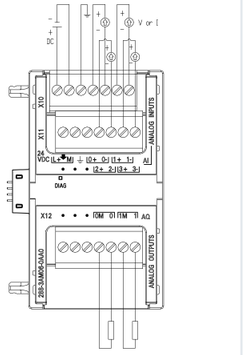
E 288-3AQ02-0AA0
E 288-3AQ02-0AA1



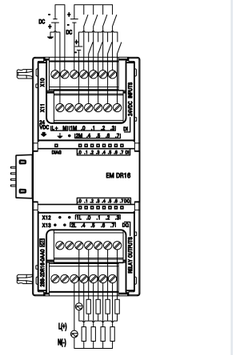
E 288-3AQ04-0AA0
E 288-3AQ04-0AA1



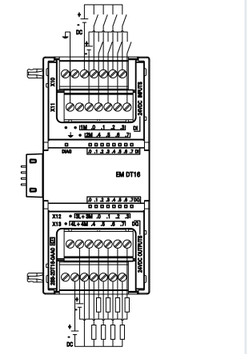
E 288-3AM03-0AA0
E 288-3AM03-0AA1



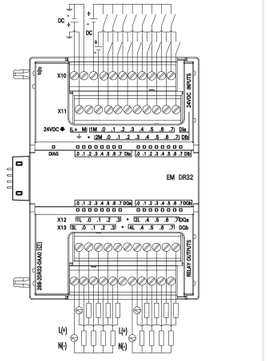
E 288-3AM06-0AA0
E 288-3AM06-0AA1



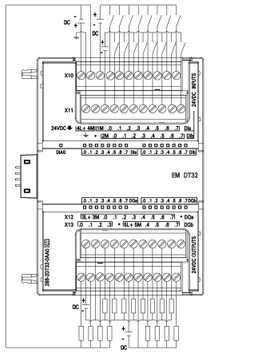
E 288-2DR16-0AA1



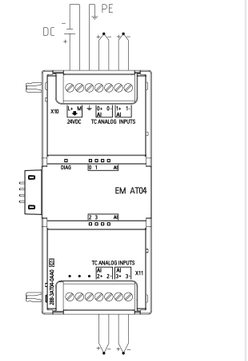
E 288-2DT16-0AA1



E 288-2DR32-0AA1

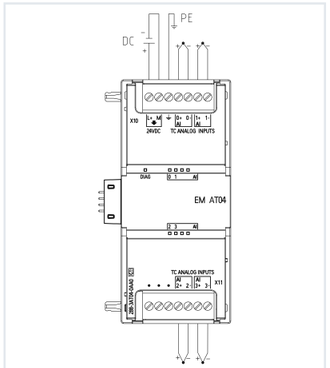


E 288-2DT32-0AA1

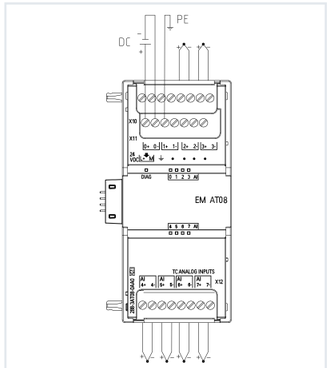


E 288-3AT04-0AA1

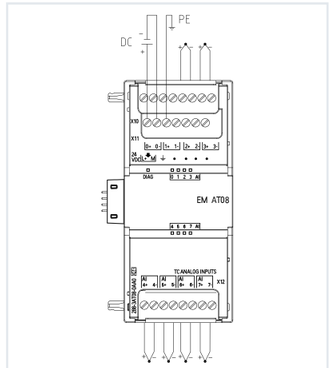
Appendix 1: E-Series 200 SMART Wiring Diagram



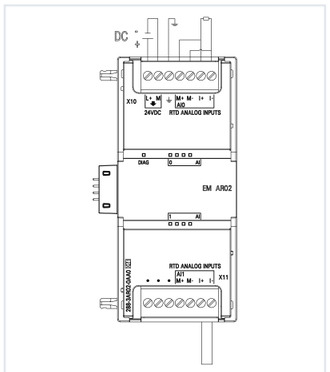
E 288-3AT04-PIA1



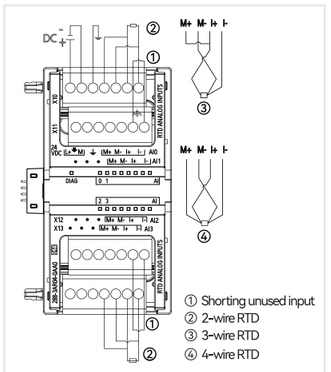
E 288-3AT08-0AA1



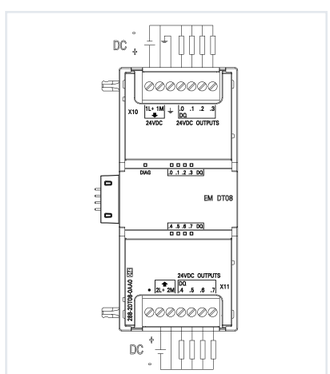
E 288-3AT08-PIA1



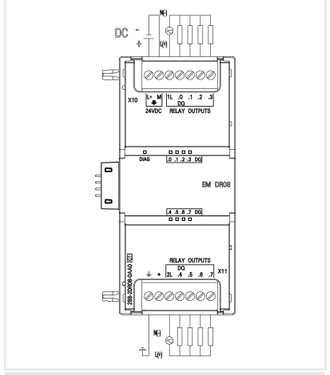
E 288-3AR02-0AA1



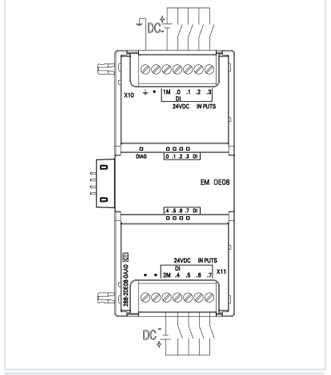
E 288-3AR04-0AA1



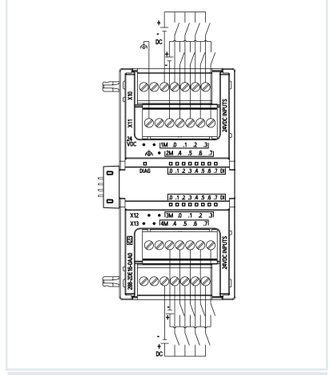
E 288-2DT08-0AA1



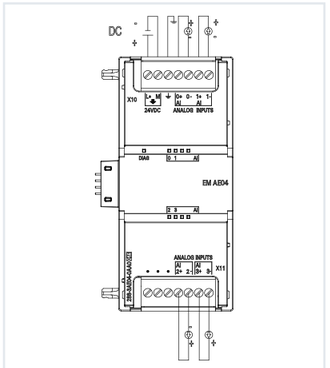
E 288-2DR08-0AA1



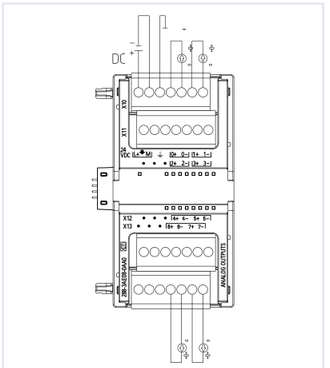
E 288-2DE08-0AA1



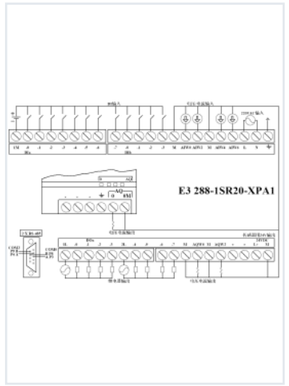
E 288-2DE16-0AA1



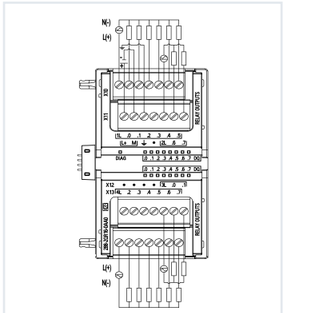
E 288-3AE04-0AA0
E 288-3AE04-0AA1



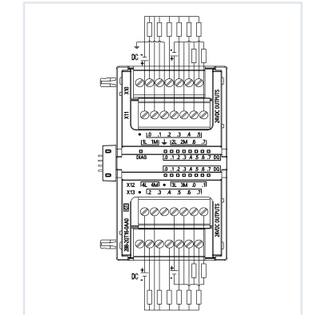
E 288-3AE08-0AA0
E 288-3AE08-0AA1



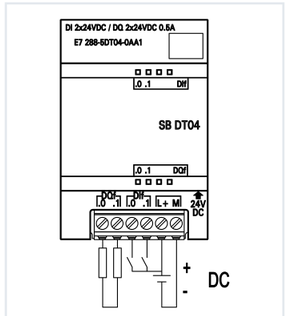
E3 288-1SR20-XPA1



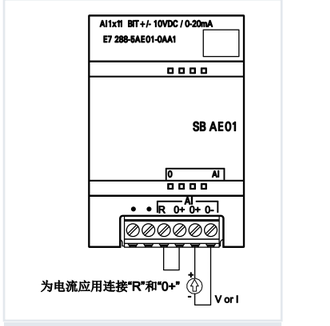
E 288-2QR16-0AA1



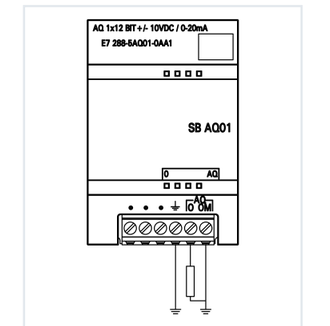
E 288-2QT16-0AA1



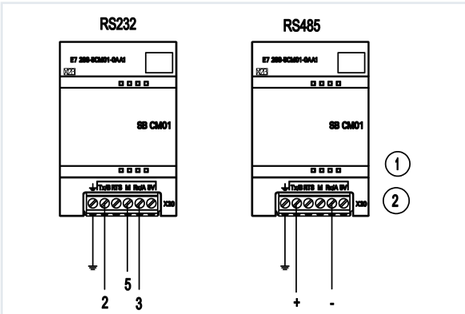
E 288-5DT04-0AA1



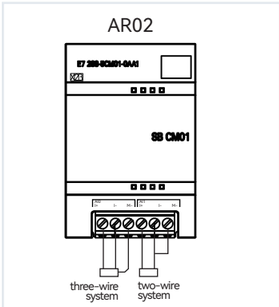
E 288-5AE01-0AA1



E 288-5AQ01-0AA1



E 288-5CM01-0AA1



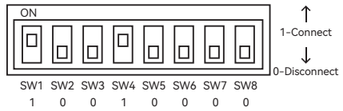
E 288-5AR02-0AA1

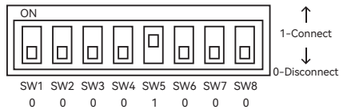
Appendix2:The corresponding table of SMART AT08 module DIP switch Settings

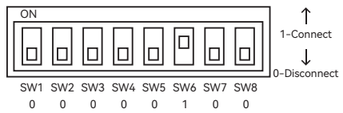
Model number	E-288-3AT08-0AA1	
Location	Select an item	Set
SW1 ~ SW3	Thermocouple type: J、K、T、E、R、S、N、±80mV	H 7/E 7smart AT08 thermocouple module type selection and DIP switch SW1-SW3 corresponding table
SW4	Keep it unused	
SW5	Detection direction of broken wire	0: positive calibration (3276.7) 1: negative 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 2: The corresponding table of AR02 module Settings

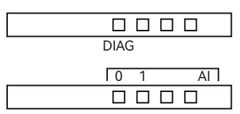
SW 1 2 3 4	Sensor Type Settings		DIP Switch	Description
	Pt 100	Pt 0.003850	0000	Switches 1 through 4 select the RTD type (or resistor type) for all channels on the module. For example, to select the CU100 type, switches SW1=1, SW2=0, SW3=0, and SW4=1.
	Pt 500	ITS90	0001	
	Pt 1000	DIN EN 60751	0010	
	Ni120	Ni 0.006180	0011	
	Ni500		0100	
	Ni1000		0101	
	LG-Ni 1000	LG-Ni 0.005000	0110	
	Cu10	Cu 0.004280	0111	
	Cu50		1000	
	Cu100		1001	
	48Ω		1010	
	150Ω		1011	
	300Ω		1100	
	600Ω		1101	
	3000Ω		1110	

SW 5	Default	DIP Switch	Description
	\	\	\
	\	\	

SW 6	Disconnection detection settings	DIP Switch	Description
	Enable	0	0 indicates activation of disconnection detection 1 indicates deactivation of disconnection detection For example, to deactivate disconnection detection, SW6=1
	Disable	1	

SW 7 8	Suppress filter settings	DIP Switch	Description
	50Hz（120ms integration）	00	Set integral filtering parameters For example, 10Hz, SW7=1, SW8=0
	60Hz（100ms integration）	01	
	10Hz（600ms integration）	10	
	400Hz（60ms integration）	11	

Factory default encoding is all 0: PT100, Celsius x10 display, disconnection detection enabled, integral parameter 50Hz suppression.

LED light location and silkscreen definition	The meaning of on and off		
	DIAG	Lights off	Not powered on or has a problem
		Green flashing	Normal power-on but no CPU communication
		Green always on	Normal power-on and CPU communication
	0,1 AI channel Lights	Lights off	has a problem
		Green always on	It is running normally and there are no alarms.
		Red flashing	Detected broken wire or over-range

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/8D0/4AI/2AO,1*RJ45，2*RS485，2*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/12D0/4AI/2A0,1*RJ45，2*RS485，3*100KHz high-speed pulse, Expandable to 6IO	E7 288-1ST30-XPA1
E7 SR30XP	CPU SR30XP Relay，18DI/12D0/4AI/2A0,1*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
EM AT04-PID	PID Module, 4TC	E 288-3AT04-PIA1
EM AT08-PID	PID Module, 8TC	E 288-3AT08-PIA1

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
E DB ARO2	Temperature acquisition signal board, 2 RTD input	E 288-5AR02-0AA1

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