

A-51x Series Distributed Control System

Catalogue•2015.03



A-51x DCS

eAutomation Solution



Central Processing Units

Distributed Control System

A-51x Series

1

OVERVIEW

- ※ Creation of control programs in Function Block Diagram (FBD) or Ladder Diagram (LAD)
- ※ 4-Axis Synchronous Motion, 100 KHz PWM (Total 400KHz)
- ※ Able To Edit The Parameter Among The Controller Operation
- ※ Multiple AUTO-PI Synchronous Function
- ※ Multi-Lingual Display Menu
- ※ Enhance Password & Safety Function
- ※ Text Display Can Be Pre-Programmed in Two Languages
- ※ Built-in Standard High Frequency Counter (250KHz per Input, Total 1000KHz)
- ※ Built-in Standard Real Time Clock (RTC)
- ※ PC Program Can be Used For All A-61/52/62 Series
- ※ ATP2 Text Panel Can Plug & Play Directly
- ※ Built-in Standard RS-485 Port, Connect More Than 10000 IOs Via Remote IO Module
- ※ Memory Card Which Has Copy & Password Protection
- ※ Connect Encoder & Multi-Sensors Directly
- ※ Built-in Step Motor Driver, Connect Directly
- ※ Built-in Datalog Function, MicroSD Plug-in
- ※ Display Text Display Diversity Patterns, Scrolling Text, Bar Charts, Indicators
- ※ 104 FBD Integrated Functions, 97 LD Integrated Functions
- ※ Astronomical Clock Function
- ※ ATP2 Text Panel Built-in Function Key
- ※ Digital Oscilloscope Function, Real-Time Monitoring
- ※ High-Level Math Functions
- ※ Communication Protocol MODBUS RTU/ASCII & Multi Format
- ※ Block Name Define, Program Comment
- ※ Communication Baud Rate 921600 bps
- ※ Custom Truth Table, Without Logical Analysis
- ※ Multi Communication Parameter Function
- ※ Quick Calculation Of Nonlinear Equations
- ※ Random Generator Hardware
- ※ Free PC software "Edit" + "Utility"
- ※ Output Over Current Protection (OCP)
- ※ Output Over Thermal Protection (OTP)
- ※ Output Under Voltage Lockout (UVLO)
- ※ Independent Communication Port which can communicate with 255 units MODBUS devices synchronized



Type	5188D 5188 5188M	5188D-T 5188-T 5188M-T	5189D 5189 5189M	5189D-T 5189-T 5189M-T
Operation Voltage	10-30VDC/24VAC	10-30VDC/24VAC	10-30VDC/24VAC	10-30VDC/24VAC
Inputs	8DI status low:<2VDC status high:>4VDC	8DI status low:<2VDC status high:>4VDC	4DI(Isolation) 4AI status low:<2VDC status high:>4VDC	4DI(Isolation) 4AI status low:<2VDC status high:>4VDC
Outputs	4*Isolation(Relay)	4*Isolation(Transistor)	4*Isolation(Relay)	4*Isolation(Transistor)
Continuous Current	Relay:5A (with resistive load), 2 A (with inductive load) / Transistor:1.75A(OCP/OTP/UVLO)			
Output Operating Frequency	Relay:30HZ / Transistor:100KHZ			
Input Operating Frequency	250KHZ(Total 1000KHZ)			
RTC/ Hold During Power Off	Yes			
Operation Temperature	-20 to +75 °C			
Communication Ports	USB*1 & RS-485*2 & RS-232*1			
Communication Baud Rate	1200-921600bps			
Degree Of Protection	IP20			
Base Controller IOs	12 IOs,			
Installation	35 mm DIN rail or Flush mounting			
Dimension (W x H x D mm)	76.4*118.2*40.7 mm			
Communication Cable	CAB-MINIUSB60 or RS-485 or RS-232			

*D-x = LCM Type / *M = MicroSD Type

Remote Modules

Remote Modules

A-10x Series

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OVERVIEW

- ※ Use For A-1x/A-2x/A-5x/A-6x/A-7x Series
- ※ RS-485 Interface
- ※ Supports Modbus RTU / ASCII
- ※ LED indicator
- ※ Operation temperature -20~+75°C
- ※ Isolation voltage: 5000 V DC
- ※ Password Protection
- ※ Surge , EFT and ESD protection
- ※ Dual watchdog timer
- ※ Low power indicator
- ※ Operation Range: Up to 100 Meters
- ※ Free PC software “Utility”



Type	A-1057	A-1058	A-1068	A-1069	A-1051	A-1055
	DO	DO	DO	DO	DI	DIO
Operation Voltage	10-30VDC/24VAC	10-30VDC/24VAC	10-30VDC/24VAC	10-30VDC/24VAC	10-30VDC/24VAC	10-30VDC/24VAC
Inputs	---	---	---	---	16*Isolation DI status low:<1VDC status high:>5-30VDC	8*Isolation DI status low:<1VDC status high:>5-30VDC
Outputs	12 (Source Transistor)	12 (Sink Transistor)	8 (Signal Relay)	8 (Power Relay)	---	8 (Sink Transistor)
Continuous Current	10-35VDC(1A)	10-40VDC(200mA)	120VAC(0.5A)/30VDC(1A)	250VAC(5A)/30VDC(1A)	---	10-40VDC(200mA)
Communication Baud Rate			1200-115200bps			
Isolation			YES(5000VDC)			
Input Operating Frequency			10HZ			
Output Operating Frequency			Relay:10HZ / Transistor:10HZ			
Operation Temperature			-20 to +75 °C			
Degree Of Protection			IP20			
Installation			35 mm DIN rail or Flush mounting			
Dimension (W x H x D mm)			76.4*118.2*38.5 mm			

Type	A-1055S	A-1060	A-3016	A-1010	A-1012
	DIO	DIO	Radio DIO	ADIO	ADIO
Operation Voltage	10-30VDC/24VAC	10-30VDC/24VAC	10-30VDC/24VAC	10-30VDC/24VAC	10-30VDC/24VAC
Inputs	8*Isolation DI status low:<1VDC status high:>5-30VDC	8*Isolation DI status low:<1VDC status high:>5-30VDC	6*Button	---	2*Isolation DI status low:<1VDC status high:>5-30VDC
Outputs	8 (Source Transistor)	4 (Power Relay)	7 (Sink Transistor)	4 (Sink Transistor)	2 (Source Transistor)
Continuous Current	10-35VDC(1A)	250VAC(5A)/30VDC(1A)	10-40VDC(200mA)	10-40VDC(200mA)	10-35VDC(200mA)
Communication Baud Rate	1200-115200bps				1200-921600bps
Analog inputs	---		8 (0-10VDC)		4 Sensor (V, I, J, K, PT-100...)
Analog Output	---		2 (0-10VDC)		2 (0-20mA/4-20mA)
Isolation			YES(5000VDC)		
Input Operating Frequency			10HZ		
Output Operating Frequency			Relay:10HZ / Transistor:10HZ		
Operation Temperature			-20 to +75 °C		
Degree Of Protection			IP20		
Installation			35 mm DIN rail or Flush mounting		
Dimension (W x H x D mm)			76.4*118.2*38.5 mm		

Text Panel

PLC Text Panel

ATP2

3

OVERVIEW

- ※ Use For All A-51/52/61/62 Series
- ※ Plug & Play
- ※ Multi-Lingual Display & Setting
- ※ Able To Edit The Parameter Among The Controller Operation
- ※ Enhance Password & Safety Function
- ※ Display Text Display Diversity Patterns, Scroll-in Text, Bar Charts, Indicators
- ※ Built-in Function Key
- ※ Digital Oscilloscope Function, Real-Time Monitoring
- ※ Support Start-Up Screen
- ※ RS-485 Interface
- ※ Resolution: 192*64 pixels
- ※ Dual Watchdog Timer
- ※ Surge, EFT & ESD Protection
- ※ IP65 Protection



Type	ATP2 (Text Panel)
Operation Voltage	10-30VDC/24VAC
LCM	4.3" STN
Contrast	Adjustable resistor
Resolution	192*64 pixels
LCM Life	>50000 hr
Brightness	60cd/m2
Color	Monochrome
Function KEY	5-KEY
Display Dimension	96*32 mm
Operation Temperature	-10 to +55 °C
Degree Of Protection	IP65(Front Panel)
Installation	35 mm DIN rail or Flush mounting
Dimension (W x H x D mm)	157.9*86.4*28.6 mm

Accessories

DCS Accessories

Accessories

4

OVERVIEW

- ※ ASPS Use For 24VDC
- ※ AMB128 Use For All
A-11x/A-21x/A-51x/A-52x/A-61x/A-62x Series
- ※ AMB128 Can Upload & Download Directly
- ※ AMB128 Has Copy & Password Protection
- ※ Standard Micro-SD-8GB
- ※ Micro-SD File Format *.CSV



Type	ASPS	AMB128	CAB-MINIUSB60	Micro-SD-8GB
	48W Power Supply	Program Memory Cards	Communication lines	Data Storage Card
Operation Voltage	1-phase 100/240 V AC	USB/PLC	USB	PLC
PC Driver	---	Windows98/ME/2000/XP/Vista/7/8/ Server 2008/WinCE/Linux/MacDC	Windows98/ME/2000/XP/Vista/7/8/ Server 2008/WinCE	--- *.CSV
Support Models	A-1x/A-2x/A-3x/A-5x /A-6x/A-7x/TS/TC	A-11x/A-21x/A-51x/A-52x/A-61x/A-62x	A-51x/A-52x/A-53x	Micro-SD Type
Operation Temperature	-10 to +55 °C	-10 to +55 °C	-20 to +75 °C	-10 to +55 °C
Degree Of Protection	IP20	IP20	IP20	---
Installation	35 mm DIN rail or Flush mounting	PC or PLC	PC or PLC	PC or PLC
Dimension(W x H x D)	73*90*60.3 mm	25.7*39.7*16.8 mm	60cm	---
Input Frequency	50 / 60 Hz	---	---	---
Fuse	YES	---	---	---
OCP	YES	---	---	---
OCP	YES	---	---	---
24VDC(MAX)	2.0A	---	---	---
Output Voltage Stability	±8%	---	---	---
Ripple	100mV	---	---	---
Efficiency	>75%	---	---	---
Power LED	YES	---	---	---

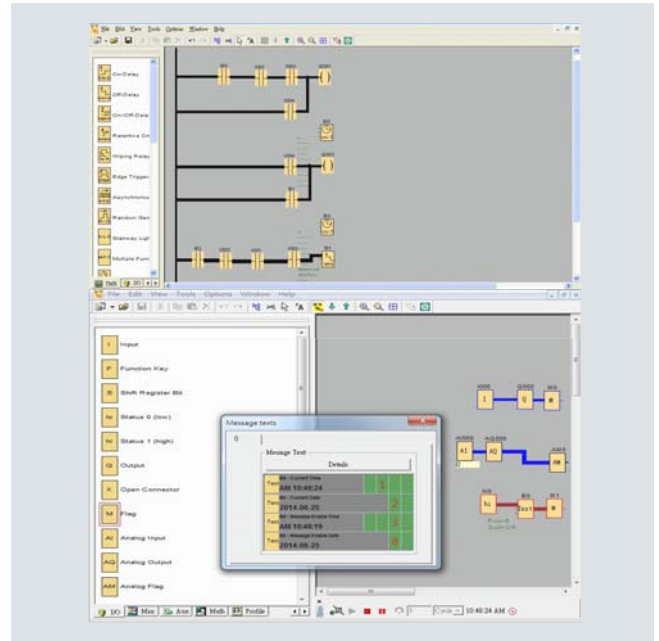
Software PLC Edit Software

Editor

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OVERVIEW

- ※ Creation of control programs in Function Block Diagram (FBD) or Ladder Diagram (LAD)
- ※ Use For All A-11/21/51/52/61/62 Series
- ※ Support Windows 98/ME/2000/XP/Vista/7/8
- ※ Offline Simulation Can Edit Parameters
- ※ Online Simulation Can Monitor Parameters
- ※ Message Text Can Edit Multi-Lingual
- ※ Built-in Datalog Function, Use Standard MicroSD
- ※ Display Text Display Diversity Patterns, Scrollin Text, Bar Charts, Indicators ...
- ※ 104 FBD Integrated Functions, 97 LD Integrated Functions
- ※ Astronomical Clock Function
- ※ ATP2 Text Panel Built-in Function Key
- ※ Digital Oscilloscope Function, Real-Time Monitoring
- ※ High-Level Math Functions
- ※ Communit Protocol MODBUS RTU/ASCII & Multi Format
- ※ Block Name Define, Program Comment
- ※ Custom Truth Table, Without Logical Analysis
- ※ Ladder Diagram Can Compile To Function Block Diagram



F B D F u n c t i o n	AND		Input		PI controller		NOT Mask		Square root
	AND		Function Key		PWM		NAND Mask		Absolute value
	NAND		Sift Register Bit		Analog Filter		NOR Mask		GCD
	NAND		Status 0 (low)		MaxMin		XOR Mask		LCM
	OR		Status 1 (high)		Average Value		Data array Max/Min/Avg		2' s nth power
	NOR		Output		Latching Relay		Data Max/Min/Avg		e' s nth power
	XOR		Open Connector		Pulse Relay		RAND		Fixed-point arithmetic
	NOT		Flag		Message Texts		MEM		Round-off
	On-Delay		Analog Inut		Shift Register		Encoder		Sine function
	Off-Delay		Analog Output		Mathematical instruction error detection		Stepping Motor Control		Cosine function
	On-/Off-Delay		Analog Flag		Modbus Read		Stepping Motor Control (Edge)		Tangent function
	Retentive On-Delay		Up/Down Counter		Modbus Write		Pulse train output		Cotangent function
	Wiping Relay (pulse output)		Hours Counter		Boolean function		Pulse train output (Edge)		Secant function
	Edge Triggered Wiping Relay		Threshold Trigger		Trigger date time		Segment display		Cosecant function
	Asynchronous Pulse Generator		Mathematical instruction		Binary-Coded Decimal		Word to Bit		Quadratic equation
	Random Generator		Analog Comparator		Binary Code		UDC Communication		Data Log
	Stairway Lighting Switch		Analog Threshold Trigger		Left Rotation		CRC16		
	Multiple Function Switch		Analog Amplifier		Right Rotation		Odd Number		
	Weekly Timer		Analog Watchdog		Left Shift		Even Number		
	Yearly Timer		Analog Differential Trigger		Right Shift		Modulo		
Astronomical clock		Analog MUX		AND Mask		Remainder			
StopWatch		Analog Ramp		OR Mask		Logarithm			

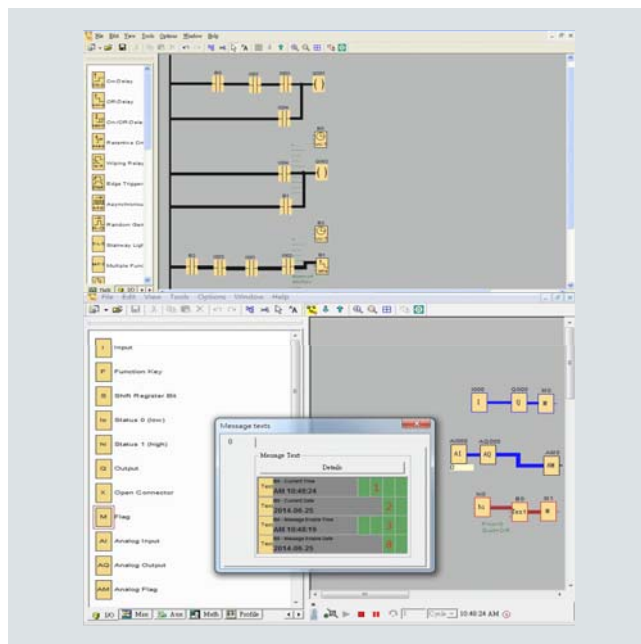
Software PLC Edit Soft

Editor

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OVERVIEW

- ※ Program Comment
- ※ Project-Oriented Application Development
- ※ Ladder Diagram & Function Block Diagram Editing
Comparison Function
- ※ Program Memory Code Auxiliary Display
- ※ Component Comment



L D F u n c t i o n	Make Contact		Threshold Trigger		Modbus Write		Pulse train output		Cotangent function	
	Break Contact		Mathematical instruction		Boolean function		Pulse train output (Edge)		Secant function	
	Analog Contact		Analog Comparator		Trigger date time		Segment display		Cosecant function	
	Relay Coil		Analog Threshold Trigger		Binary-Coded Decimal		Word to Bit		Quadratic equation	
	Inverted Output		Analog Amplifier		Binary Code		UDC Communication		Data Log	
	Analog Output		Analog Watchdog		Left Rotation		CRC16		Serial connect with an A contact	YES
	On-Delay		Analog Differential Trigger		Right Rotation		Odd Number		Parallel connect with an A contact	YES
	Off-Delay		Analog MUX		Left Shift		Even Number		Concatenate two blocks in series	YES
	On-/Off-Delay		Analog Ramp		Right Shift		Modulo		Merge two blocks in parallel	YES
	Retentive On-Delay		PI controller		AND Mask		Remainder			
	Wiping Relay (pulse output)		PWM		OR Mask		Logarithm			
	Edge Triggered Wiping Relay		Analog Filter		NOT Mask		Square root			
	Asynchronous Pulse Generator		MaxMin		NAND Mask		Absolute value			
	Random Generator		Average Value		NOR Mask		GCD			
	Stairway Lighting Switch		AND		XOR Mask		LCM			
	Multiple Function Switch		NAND		Data array Max/Min/Avg		2' s nth power			
	Weekly Timer		Latching Relay		Data Max/Min/Avg		e' s nth power			
	Yearly Timer		Pulse Relay		RAND		Fixed-point arithmetic			
	Astronomical clock		Message Texts		MEM		Round-off			
	StopWatch		Shift Register		Encoder		Sine function			
Up/Down Counter		Mathematical instruction error detection		Stepping Motor Control		Cosine function				
Hours Counter		Modbus Read		Stepping Motor Control (Edge)		Tangent function				

Monitoring and Database Software

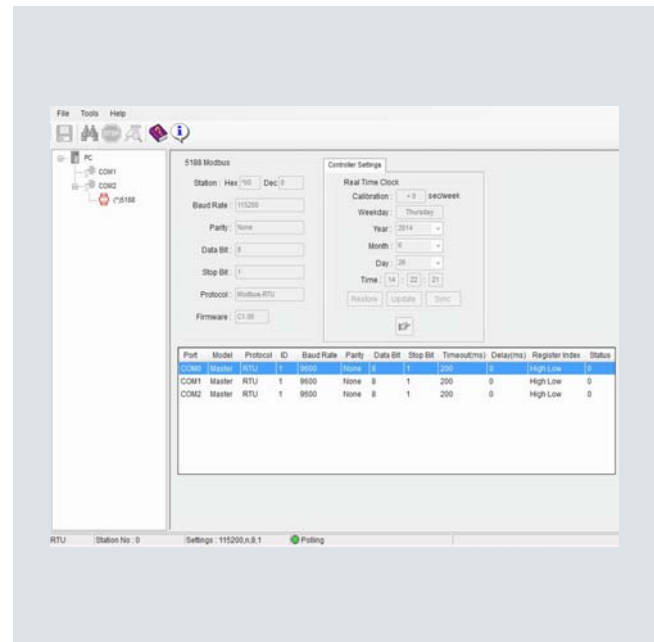
DCS Monitoring and Database Software

Utility

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OVERVIEW

- ※ Monitor & Database Function
- ※ Use For All A-1/2/3/5/6/7 Series Controller & Time Switch Series
- ※ Windows98/ME/2000/XP/Vista/7/8
- ※ Quick Setup Distributed Device Parameter & Monitoring
- ※ Can Monitor DCS Program & Parameters
- ※ Can Monitor PLC Program & Parameters
- ※ Monitor & Database Can Use For SCADA
- ※ Real-Time Monitoring, Warning Setup
- ※ Monitor Hundreds Controllers & Distributed Devices
- ※ Component Name Comment
- ※ Easy Logical Program Function
- ※ Time Switch Series Edit
- ※ Multi Communicate Parameter Function
- ※ Support MODBUS RTU/ASCII
- ※ Quick Setup Controller RTC Parameter



APPLICATIONS

ELECTRONIC EQUIPMENT

- SORTING MACHINE
- LOADER & UNLOADER
- PACKAGING MACHINE
- DETECTOR
- CUTTING MACHINE
- LAMINATOR
- COATING MACHINE
- LAPPING MACHINE
- FEEDING SYSTEM
- PRECISION MACHINERY

ELECTROMECHANICAL EQUIPMENT

- SPRAYING MACHINE
- EVAPORATION
- MACERATOR
- CALENDER MACHINE
- FLUSHING MACHINE
- ELECTROPLATING MACHINE
- WELDING MACHINE
- PRESS MACHINE
- CUTTING MACHINE
- BENDING MACHINE
- BOBBIN MACHINE
- BURN-IN EQUIPMENT
- DIE CASTER
- HEATING PROCESSING

FOOD & BEVERAGE

- PACKAGING MACHINE
- SEAL-CAPPING MACHINE
- LABELLING MACHINE
- FORMING MACHINE
- BLENDER EQUIPMENT
- CASING MACHINE
- FILLING MACHINE
- DRYER EQUIPMENT
- WEIGHT SEPARATOR
- CAPPING MACHINE
- INJECTION MACHINE
- TEMPERATURE-CONTROL

Ordering Information

A-51x

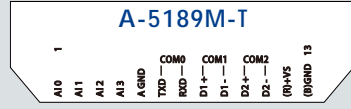
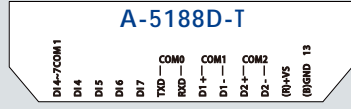
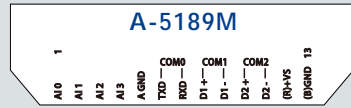
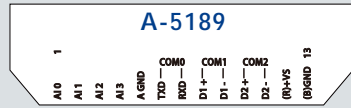
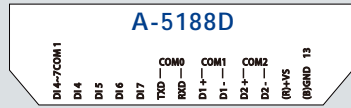
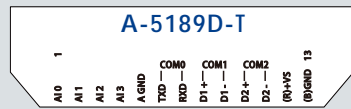
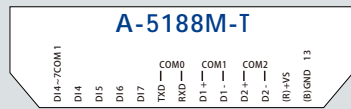
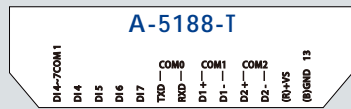
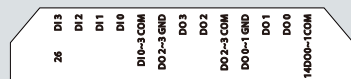
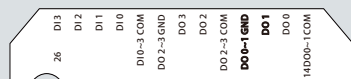
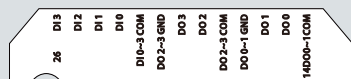
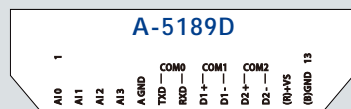
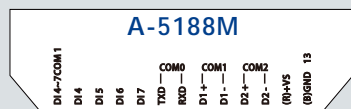
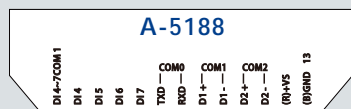
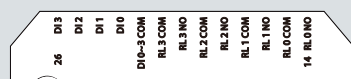
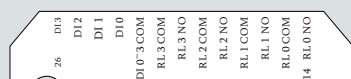
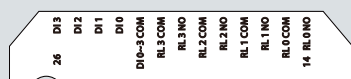
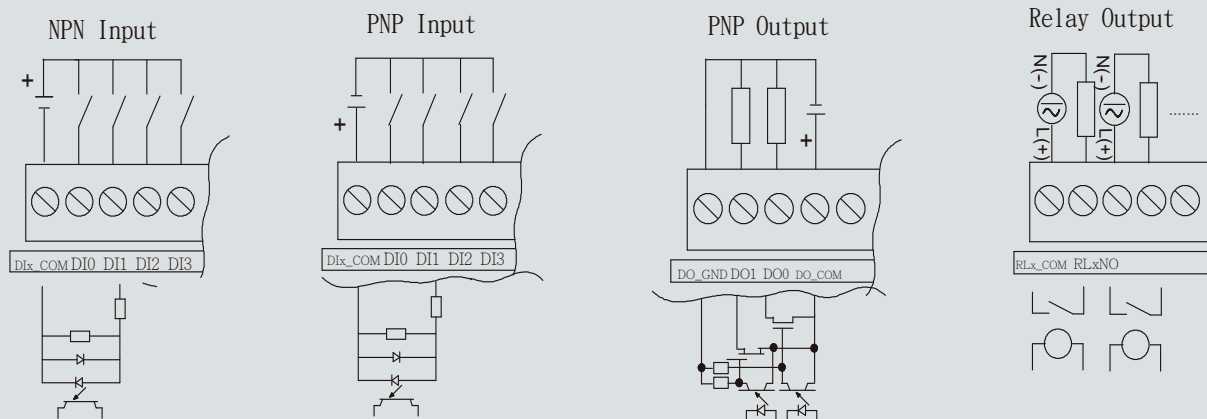
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CPU		Code
5188D	Display CPU , LCM , DC Power Supply , 8DI/4DO , RELAY Output , RS-232*1 , RS-485*2 , USB2. 0*1	A-5188D
5188	Standard CPU , LED indicator , DC Power Supply , 8DI/4DO , RELAY Output , RS-232*1 , RS-485*2 , USB2. 0*1	A-5188
5188M	Micro-SD CPU , LED indicator , DC Power Supply , 8DI/4DO , RELAY Output , RS-232*1 , RS-485*2 , USB2. 0*1 , Micro-SD *1	A-5188M
5188D-T	Display CPU , LCM , DC Power Supply , 8DI/4DO , Ttansistors Output , RS-232*1 , RS-485*2 , USB2. 0*1	A-5188D-T
5188-T	Standard CPU , LED indicator , DC Power Supply , 8DI/4DO , Ttansistors Output , RS-232*1 , RS-485*2 , USB2. 0*1	A-5188-T
5188M-T	Micro-SD CPU , LED indicator , DC Power Supply , 8DI/4DO , Ttansistors Output , RS-232*1 , RS-485*2 , USB2. 0*1 , Micro-SD *1	A-5188M-T
5189D	Display CPU , LCM , DC Power Supply , 4DI/4AI/4DO , RELAY Output , RS-232*1 , RS-485*2 , USB2. 0*1	A-5189D
5189	Standard CPU , LED indicator , DC Power Supply , 4DI/4AI/4DO , RELAY Output , RS-232*1 , RS-485*2 , USB2. 0*1	A-5189
5189M	Micro-SD CPU , LED indicator , DC Power Supply , 4DI/4AI/4DO , RELAY Output , RS-232*1 , RS-485*2 , USB2. 0*1 , Micro-SD *1	A-5189M
5189D-T	Display CPU , LCM , DC Power Supply , 4DI/4AI/4DO , Ttansistors Output , RS-232*1 , RS-485*2 , USB2. 0*1	A-5189D-T
5189-T	Standard CPU , LED indicator , DC Power Supply , 4DI/4AI/4DO , Ttansistors Output , RS-232*1 , RS-485*2 , USB2. 0*1	A-5189-T
5189M-T	Micro-SD CPU , LED indicator , DC Power Supply , 4DI/4AI/4DO , Ttansistors Output , RS-232*1 , RS-485*2 , USB2. 0*1 , Micro-SD *1	A-5189M-T
Remote Modules		
1057	DO Remote Modules , LED indicator , DC Power Supply , 12DO , Source Output , RS-485*1	A-1057
1058	DO Remote Modules , LED indicator , DC Power Supply , 12DO , Sink Output , RS-485*1	A-1058
1068	DO Remote Modules , LED indicator , DC Power Supply , 8DO , Signal Relay Output , RS-485*1	A-1068
1069	DO Remote Modules , LED indicator , DC Power Supply , 8DO , Power Relay Output , RS-485*1	A-1069
1051	DI Remote Modules , LED indicator , DC Power Supply , 16DI , RS-485*1	A-1051
1055	DIO Remote Modules , LED indicator , DC Power Supply , 8DI/8DO , Sink Output , RS-485*1	A-1055
1055S	DIO Remote Modules , LED indicator , DC Power Supply , 8DI/8DO , Source Output , RS-485*1	A-1055S
1060	DIO Remote Modules , LED indicator , DC Power Supply , 8DI/4DO , Power Relay Output , RS-485*1	A-1060
3016	Radio DIO Remote Modules , LED indicator , DC Power Supply , 6DI/7DO , Sink Output , RS-485*1	A-3016
1010	ADIO Remote Modules , LED indicator , DC Power Supply , 8AI(0-10V) , 2AO(0-10V) , 4DO(Sink Output) , RS-485*1	A-1010
1012	ADIO Remote Modules , LED indicator , DC Power Supply , 4AI(Sensor V, I, J, K, PT-100...) , 2AO(0-20/4-20mA) , 2DI , 2DO(Source Output) , RS-485*1	A-1011
		A-1012
Text Panel		
ATP2	4.3" STN LCM , DC Power Supply , RS-485*1	ATP2
Accessories		
ASPS	Power Supply , 24V/2A	ASPS
AMB128	Program Memory Cards	AMB128
CAB-MINIUSB60	Communication lines	CAB-MINIUSB60
Micro-SD-8GB	Data Storage Card	Micro-SD-8GB
Software		
Editor	Edit Software	Editor
Utility	Monitoring and Database Software	Utility
AMB128 Driver	AMB128 PC Driver	DR-AMB128
CAB-MINIUSB60 Driver	CAB-MINIUSB60 PC Driver	DR-CAB-MINIUSB60

Wiring Diagrams & Pin Out

DCS & Remote Modules

A-51x Series



Dimension

DCS & Remote Modules

DCS

Dimension

