505 System

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Introduction

Introduction

The SIMATIC 505 control systems are highly compact. We have used the latest Application Specific Integrated Circuits (ASIC) design and surface mounting technology to place more control in less space than ever. This reduces panel space and system costs, and at the same time increases reliability. The SIMATIC 505 control systems are built-in double Eurocard format and supplied in three DIN standard rack (base) sizes.

There are three types of SIMATIC 505 controllers:

- Classic, all discrete-oriented controllers - the SIMATIC 525 and 535
- Process control-oriented controllers - the SIMATIC 545 and 555.
- Integration platforms- the SIMATIC 575.

The 545 “Lite” is intended for small to medium- sized applications requiring discrete and analog control. Large discrete applications can be handled by the 545. For more complex or process control applications there is the 555. This top of the range controller is equipped to handle special mathematical functions, PID loops, alarms and high-level language programs. The 545 is also designed to handle complex process control applications, but of smaller dimensions. The 575 controller facilitates multi-vendor, multi-controller solutions.

The SIMATIC 505 controllers are supported by a complete range of digital, analog and intelligent I/O modules thereby optimizing the handling of thermocouples, RTD inputs, high-speed and special devices. The analog I/O modules are galvanically isolated . The SIMATIC 505 controllers communicate to the remote or distributed I/O racks (bases) using a 1 Mbps coaxial or twisted-pair cable. As a result, I/O racks (bases) can be located up to 4000 m (15,000 ft.) from the controller, eliminating the need for multiple cable runs and reducing installation costs.

In addition, the SIMATIC 505 controllers provide built-in support for the 12 MBaud PROFIBUS-DP Type I/O, which is the new open standard for remote I/O. This provides connectivity to I/O from other SIMATIC product lines as well as to Siemens drives and third-party I/O.

PROFIBUS-DP Slaves can be located up to 1200 meters from the controller when operating at 9.6 Kbaud or up to 100 meters at 12 Mbaud (even greater distances with fiber optic cable).

Note: For cabling, connectors, repeaters and other hardware components for PROFIBUS-DP, see Siemens IK 10 catalog under PROFIBUS sections.

General technical specifications

Safety and reliability

The SIMATIC 505 family uses the IEC 65A and DIN 41494 design standards for industry and process control equipment.

Insulation

Standard IEC 801, Part 2, Level 4. Ensures that the product is protected against the discharge of static electricity to15 kV.

Temperature cycle

Standard IEC 68-2-14 Nb. Ensures the product can operate in changing ambient temperatures from 0 to 60 ˚C.

Humidity

Standard IEC 68-2-3 Ca. Ensures that the product can operate in environmental conditions of 95% relative humidity (non-condensing) of 60 ˚C.

Mechanical shock test

Standard IEC 68-2-27 Ea. Ensures that the product is immune to non-repetitive shocks likely to be encountered during service.

Controllers: Specifications and Ordering Information

Specifications

SIMATIC 505 controllers can be divided into three types:

- **Classical programmable controllers** designed to handle typical upstream and downstream applications like material handling, palletizing and packaging.
- **Advanced controllers** which provide a unique combination of analog loop control, advanced mathematics functions and high-speed sequential control, to handle the process part of your plant.
- **Integration platforms** designed to enable mixed vendor VME solutions.

All types are compatible in their I/O structure and programming language so that you can expand easily. Training is minimized and spare parts holding optimized.

- **PowerMath™ Coprocessor** (available soon) built-in floating point math coprocessor does high-level math up to 150 times faster than our previous 555 controllers
- **SmarTune™ Auto loop tuning** (available soon) Providing integrated automatic tuning of PID loops.

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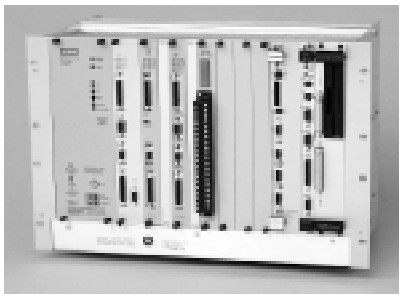
Technical Specifications

CPU	SIMATIC 545	SIMATIC 545	SIMATIC 555	SIMATIC 555
PPX:	**545-1103**	**545-1104**	**555-1103/1104**	**555-1105/1106**
Main memory for program and data (2 bytes = 1 statement) Max EPROM / EEPROM size	96 Kbytes RAM/ EPROM 96 / 0 Kbytes	192 Kbytes RAM/ EPROM 192 / 0 Kbytes	384 /1920 Kbytes RAM/ EPROM 256 / 0 Kbytes	384 /1800 Kbytes RAM/ EPROM/EEPROM 256 /1800 Kbytes
Memory Configuration				
Total Kbytes	96	192	384 / 1920	384/1800
Ladder Program Kbytes	30	59	123 / 635	123 / 600
Execution time per 1024K binary statements	0.33 ms	0.16 ms	0.07	0.07
Control relays	4096	32768	32768	32768
Non retentive	3072	28671	28671	28671
Retentive control relays	1024	4096	4096	4096
505 Remote I/O Channel bases	–	15	15	15
PROFIBUS-DP I/O slaves	32[1]	112	112	112
PID loop				
Number of standard loops	16	64	64	128
Calculation rate loops/100ms	32	37	50	50
Number Fast Loops (5ms)	0	0	0	128
SmarTune™ PID Loops	0	0	0	256
Arithmetic functions	+, -, x, ÷	+, -, x, ÷ trig. functions	+, -, x, ÷ trig. functions	+, -, x, ÷ trig. functions
Digital inputs/outputs	1024	2048	8192	8192
Analog input/outputs	1024	1024	8192	8192
Intelligent I/O modules	yes	yes	yes	yes
Remote rack distance	1000 m / 4000 m	1000 m / 4000 m	1000/4000 m	1000/4000 m
Networking	Industrial Ethernet & TCIP/IP TIWAY, MODBUS, PROFIBUS-DP[1] & FMS	Industrial Ethernet & TCIP/IP TIWAY, MODBUS, PROFIBUS-DP & FMS	Industrial Ethernet & TCIP/IP TIWAY, MODBUS, PROFIBUS-DP & FMS	Industrial Ethernet & TCIP/IP TIWAY, MODBUS, PROFIBUS-DP & FMS
Total PID loops	16	64	64	256
Analog alarm blocks	32	128	128	512
Special function programs	64	1023	1023	1023
PowerMath™ Coprocessor[2]	no	no	no	yes

[1]with optional PROFIBUS-DP I/O annex board
[2]built-in floating point math-coprocessor enables math calculations to be 5 to 10 times faster than prior versions.

Controllers, Specifications and Ordering Information (continued)



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Technical Specifications

CPU	SIMATIC 575	SIMATIC 575	SIMATIC 575
PPX:	**575-2104**	**575-2105**	**575-2106**
Main memory for program and data (2 bytes = 1 statement)	832 Kbytes RAM	832 Kbytes RAM	1856 Kbytes RAM
Memory Configuration			
Total Kbytes	832	832	1856
Ladder Program Kbytes	272	272	610
Execution time per 1024K binary statements	0.9 ms	0.45 ms	0.45 ms
Control relays	23552	23552	23552
Non retentive	19455	19455	19455
Retentive control relays	4096	4096	4096
505 Remote I/O Channel bases	15	15	15
PROFIBUS DP Slaves	112[1]	112[1]	112[1]
PID loop			
Number	64	64	64
Calculation rate loops/100ms	37	50	50
Arithmetic functions	+, -, x, ÷	+, -, x, ÷	+, -, x, ÷
trig. functions	trig. functions	trig. functions	trig. functions
Digital inputs/outputs 8192	8192	8192	8192
Analog input/outputs 8192	8192	8192	8192
Intelligent I/O modules	yes	yes	yes
Remote rack distance 1000/4000m	1000/4000m	1000/4000m	1000/4000m
PCS Supervisory System	yes	yes	yes
Networking	Industrial Ethernet & TCP/IP TIWAY, MODBUS, PROFIBUS[1]-DP ,FMS	Industrial Ethernet & TCP/IP TIWAY, MODBUS, PROFIBUS[1]-DP ,FMS	Industrial Ethernet & TCP/IP TIWAY, MODBUS, PROFIBUS[1]-DP ,FMS
PID loops	64	64	64
Analog alarm blocks	128	128	128
Special function programs	1023	1023	1023
PowerMath™ Coprocessor[2]	no	yes	yes

[1] 575 can have either an optional 505 remote I/O channel annex card PPX: 575-2126 or a PROFIBUS-DP annex card PPX: 505-CP-5434-DP, but not both.

[2] Built in floating point math coprocessor enables math calculations to be 5 to 10 times faster than prior versions

There are four types of I/O communication techniques for connecting 505 controllers to their I/O:

- Distributed I/O connection
- Remote I/O connection
- PROFIBUS-DP connection
- AS-i actuator-sensor bus connection

Distributed I/O connection

This technique is only used by the 535 PLC. The Distributed I/O communications system consists of two modules:

- I/O channel controller (IOCC) (PPX:505-6830)
- Distributed Base Controller (DBC) (PPX:505-6840)

The IOCC is installed in the SIMATIC 535 local base. The DBC is installed in the distributed base. Up to 14 DBCs can be connected in a daisy chain configuration. The last DBC can be located up to 396m (1300 ft.) away from the IOCC.

Remote I/O connection

This technique is used by the 545/555/575 PLCs. The remote I/O communications system consists of two modules:

- Remote channel controller (RCC)
- Remote base controller (RBC)

Remote channel controller

The RCC controls all communications between the 545/555/575 PLCs and their remote I/O bases.

- The 545/555/575 PLC has the RCC built into the CPU board as standard. This RCC port supports up to 2048 digital points or a mixed configuration of up to 1024 digital and 1024 analog points. These I/O points can be located on up to 16 remote bases. The last RBC can be located up to 1000 m (3,300 ft.) from the CPU.

Remote base controller

The RBC is an intelligent interface between remote I/O bases and the 545/555/575 controllers. The RBC is installed in the remote I/O base. SIMATIC 505 RBCs are available with either coaxial or shielded twisted-pair cable. This allows the 545/555/575 controllers to be compatible with remote I/O bases. RBCs using coaxial cable, can be located up to 4000 m (13,200 ft.) from the PLC rack. RBCs using shielded twisted-pair, can be located up to 1000 m (3,300 ft.) from the PLC rack. Three models are available:

- Remote Base Controller RS485 (PPX:505-6851-A)
- Remote Base Controller COAX (PPX:505-6850-A)
- COAX to RS-485 converter (PPX:505-6860)

PROFIBUS-DP Remote I/O Connection

This technique is used by the 545/555/575 PLCs. Most 505 CPUs come with PROFIBUS-DP built-in. Others require an optional annex card.

- PROFIBUS-DP annex card (PPX:505-CP5434-DP)
- PROFIBUS-DP 505 RBC (PPX:505-6870)

The 505 PROFIBUS-DP I/O Channel supports up to 112 slaves (drops) of mixed analog and discrete modules. The 505 PROFIBUS-DP RBC can be installed in any 505 base to allow a 505 I/O base to perform as a PROFIBUS-DP I/O node on any PROFIBUS-DP system.

The 505 DP RBC has a serial port for remote programming when used on a 505 system only. However, SIMATIC 505 special function modules are not supported by the DP RBC.

Each PROFIBUS-DP node can have a maximum of 244 bytes of input and 244 bytes of output data. Each byte supports 8 digital inputs or outputs. Each analog point requires 2 bytes of data.

Depending on the baud rate selected, the PROFIBUS-DP cable length can extend up to 100 meters at 12 Mbaud and up to 1200 meters at 9.6 Kbaud. (up to 100km by using repeaters)

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Technical Specifications

Mounting racks (bases) Type	PPX:	505-6504	505-6508	505-6511	505-6516
Slots					
Number of I/O slots		4	8	11	16
I/O points	max	128	256	352	512
Width	mm	203 (8.0”)	286 (11.25”)	448 (17.62”)	448 (17.62”)
Depth	mm	203 (8.0”)	203 (8.0”)	203 (8.0”)	203 (8.0”)
Height	mm	266 (10.47”)	266 (10.47”)	266 (10.47”)	266 (10.47”)
Dual media/power supply		no	no	yes	no

The internal power supply (5.1/±12/+24 V DC) is operated with an external feed voltage of 24 V DC/230 V AC.

Technical Specifications

Power supply units				
Type	**PPX:**	**505-6660**	**505-6660-A/B**	**505-6663/-A**
Input voltage				
Rated value		85 to 132 V AC 170 to 264 V AC	85 to 132 V AC 170 to 264 V AC	20 to 30 V DC
Output power				
Rated value		60 W	60 W	60 W
Galvanic isolation		yes	yes	yes
Short-circuit protection		yes	yes	yes
Redundant		yes	yes	no

Description and Ordering Information

Technical Specifications

Digital input modules PPX:	505-4008-A	505-4016-A	505-4032-A	505-4108	505-4116	505-4132	505-4208-A	505-4216-A
Inputs								
Number	8	16	32	8	16	32	8	16
Galvanic isolation	yes	yes	yes	yes	yes	yes	yes	yes
in groups of	2	4	8	2	4	8	2	4
Input voltage	20 to 56 V AC	20 to 56 V AC	20 to 56 V AC	6 to 12 V DC	6 to 12 V DC	6 to 12 V DC	79 to 132 V AC	79 to 132 V AC
Input current								
"1" signal type	28 mA	28 mA	28 mA	22 mA	22 mA	22 mA	15 mA	15 mA
Slots	1	1	1	1	1	1	1	1

Digital input modules PPX:	505-2580	505-4232-A	505-4308	505-4316-A	505-4332	505-4408-A	505-4416-A	505-4432-A
Inputs	Isolated							
Number	16	32	8	16	32	8	16	32
Galvanic isolation	yes	yes	yes	yes	yes	yes	yes	yes
in groups of	1	8	2	4	8	2	4	8
Input voltage	95 to 132 VAC	79 to 132 V AC	14 to 30 V DC	14 to 53 V DC	14 to 30 V DC	164 to 256 V AC	164 to 256 V AC	164 to 256 V AC
Input current								
"1" signal type	7 mA	15 mA	15 mA	15 mA	15 mA	20 mA	20 mA	20 mA
Slots	1	1	1	1	1	1	1	2

Digital output modules PPX:	505-2590 -A	505-3508	505-3516	505-3532	505-3708	505-3716	505-3732
Outputs	Isolated						
Number	16	8	16	32	8	16	32
Galvanic isolation	yes	yes	yes	yes	yes	yes	yes
in groups of	1	2	4	8	2	4	8
Supply voltage	20 to 132 VAC	4.5 to 34 V DC	4.5 to 34 V DC	4.5 to 34 V DC	4.5 to 34 V DC	4.5 to 34 V DC	4.5 to 34 V DC
Output current "1"	2.0 A	0.5 A	0.5 A	2.0 A	2.0 A	2.0 A	
Short-circuit protection	Fuse [1]	Fuse	Fuse	Fuse	Fuse	Fuse	Fuse
Slots	1	1	1	1	2	2	2

Digital output modules PPX:	505-4508	505-4516	505-4532	505-4608	505-4616	505-4632
Type	sourcing	sourcing	sourcing	TRIAC	TRIAC	TRIAC
Outputs						
Number	8	16	32	8	16	32
Galvanic isolation	yes	yes	yes	yes	yes	yes
in groups of	2	4	8	2	4	8
Supply voltage	4.5 to 34 V DC	4.5 to 34 V DC	4.5 to 34 V DC	20 to 132 V AC	20 to 132 V AC	20 to 132 V AC
Output current "1"	0.5 A	0.5 A	0.5 A	0.5 A	0.5 A	0.5 A
Short-circuit protection	Fuse	Fuse	Fuse	Fuse	Fuse	Fuse
Slots	1	1	1	1	1	1

Digital output modules PPX:	505-4708	505-4716	505-4732	505-4808	505-4816	505-4832
Type	sourcing	sourcing	sourcing	TRIAC	TRIAC	TRIAC
Outputs						
Number	8	16	32	8	16	32
Galvanic isolation	yes	yes	yes	yes	yes	yes
in groups of	2	4	8	2	4	8
Supply voltage	4.5 to 34 V DC	4.5 to 34 V DC	4.5 to 34 V DC	8.5 to 256 V AC	8.5 to 256 V AC	8.5 to 256 V AC
Output current "1"	2 A	2 A	2 A	2 A	2 A	2 A
Short-circuit protection	Fuse	Fuse	Fuse	Fuse	Fuse	Fuse
Slots	2	2	2	2	2	2

[1] With blown fuse detection and reporting to the PLC

Description and Ordering Information (Continued)

Technical Specifications

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Relay output modules	PPX:	505-4908	505-4916-A	505-4932-A	505-5417	505-5518
Voltage range		20 to 265 V AC 4.5 to 30V DC	20 to 265 V AC 4.5 to 30V DC	20 to 265 V AC 4.5 to 30V DC	10 to 125 V AC 0 to 120 V DC	20 to 265 V AC 10 to 54 V DC
Outputs						
Number		8	16	32	16	
Current		2 A per point	2 A per point	2 A per point	1 A per point	5 A per point/240 VAC[1]
3 A per point/24 V DC						
Total relay contact resistance		300 m ohm	250 m ohm	250 m ohm	50 m ohm	100 m ohm
Short-circuit protection		Fuse	Fuse	Fuse	Fuse	Fuse
Slots		1	1	2	1	1

Interrupt modules	PPX:	505-4317	505-4319
Rated Voltage		24 VDC	125 VDC
Input Voltage Range		10-30 VDC	112.5-137.5 VDC
Number of Inputs		**16**	**16**
Non-Interrupt		08	08
Interrupt		08	08
Slots		1	1
Galvanic Insulation In Groups Of		1	1

[1] The 505-5518 has a jumper selectable RC or “snubber” circut across each output contact that suppresses arcing, reduces noise and greatly extends contact life when switching heavy inductive loads.

Description and Ordering Information (Continued)

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Technical Specifications

Analog input modules	PPX:	505-2555	505-6108-A
Inputs			
Number		16	8
Input ranges		0 to 5VDC, 0 to -10VDC, -5 to +5VDC, -10 to +10 VDC, 0 to +10VDC, -20 to +20 mA, 0 to 20mA	0 to 5V, -5 to +5V, 0 to 20 mA, -10 to +l0V
Update time		5.9 ms all; 8.2 ms w/filtering	250 ms all channels
Resolution		13 bits bipolar, 14 bits unipolar	12 bits
Galvanic isolation		yes, 140 Vrms CMRR	yes
Slots		1	1

Analog output modules	PPX:	505-6208-A
Outputs		
Number		8
Galvanic isolation		yes
Output ranges		0 to 10 V, 0 to 20 mA
Resolution		12 bit
Conversion time		Max. 56 ms
Supply voltage		
Rated value		24 V DC
Slots		1

Analog input/output modules	PPX:	505-7012	505-7016
Inputs			
Number		8, differential bipolar	8, differential bipolar
Range		0 to 10V, 0 to 50 mV, 0 to 20 mA	0 to 10V, 0 to 50 mV, 0 to 20 mA
Resolution		input: 15 bit, output: 12 bit	input: 13 bit, output: 12 bit
Outputs			
Number		4	4 unipolar isolated
Range		0 to 10 V, 0 to 20 mA	+/- 0 to 10 V, 0 to 20 mA
Isolation			
between inputs		100 V common-mode voltage	100 V common-mode voltage
between outputs		l500 V AC	l500 V AC
Update time		20 ms/input, 24 ms for all outputs	0.5 ms/channel input
Power supply		24 V DC, outputs only	24 V AC/DC, outputs only
Slots		1	1

Thermocouple/RTD modules	PPX:	505-2556	505-2557	505-7028	505-7038
Inputs					
Type		Thermocouple	RTD	Thermocouple	RTD
Number		16	16	8	8
Resolution		16 bit	16 bit	14 bit	0.003 ohm (l9 bit)
Update time		20 ms all channels	20 ms all channels	250 ms	120 ms per active input
Input range		-55 to +55 mV		-50 to +50 mV	
Probe types		J, K, T, E, R, S, L (Din J) (C and N by SPC)	100 ohm,platinum, 120 ohm nickel, 10 ohm copper	J, K, T, E, R, S, N	100 ohm, 200 ohm, 500 ohm platinum, 120 ohm nickel, 10 ohm copper
Advanced features		Averaging, scaling, filtering, peak and valley hold, alarming.	Averaging, scaling, filtering, peak and valley hold, alarming.		
Open sensor detect		yes	yes	no	no
Slots		1	1	1	1

Description and Ordering Information (Continued)

Technical Specifications

Word input/output modules	PPX:	505-6308	505-6408
Application		Interfacing the PLC to input devices such as thumb wheel switches, analog to digital converters and many other devices that use multi-parallel word codes, such as BCD, Gray code or other binary codes.	
Function		Input	Output
Inputs		TTL, CMOS, <28 V DC	TTL, CMOS DC
Update time	**max.**	8ms	16ms
Power supply		20 to 30 V DC	20 to 30 V DC
Slots		2	2

Technical Specifications

Simulator modules	PPX:	505-6010	505-6011
Application		Debugging ladder logic programs, monitoring output points, or directly controlling input points. They are also excellent for training purposes.	
Function		Input	Output
Simulation points		32	32
Indicators (LED)		32	32
Slots		1	1

Very High speed counter & encoding module	PPX:		505-7003
High speed counter module	**PPX:**	**505-7002**	
Application		To control process variables (position, velocity, flow) that the CPU cannot control due to timing constraints.	
Design			
Number of counters		2	2 quadrature counters @ 24 bits, 4 up/down counters @ 16 bit
Counting range		0 to 65,535 up/down or quadrature(software selectable)	0 to 65,535 up/down or 16,777,215 quadrature (software selectable)
Counting speed		50 kHz maximum (40% duty cycle)	100 kHz maximum (100% duty cycle)
Minimum pulse width on time		8 µs	11 µs
Minimum pulse width off time		3.9 µs	4.1 µs
Inputs		4 counting inputs, 4 to 28 V DC	6 counting inputs, 4 to 28 V DC
Outputs		4 control outputs	8 control outputs
Slots		2	1

Basic module	PPX:	505-7101
Application		Complex math, data handling, or external device interfaces.
Design		
Number of interfaces		2 (RS 232 C/423)
Transmission rate		110-19,200 baud (selectable)
Memory size		28 Kbytes (battery backed)
Memory buffers		
Input		28 ASCII characters
Output		128/1024 ASCII characters
Slots		1

Fieldbus interface module	PPX:	505-7202
Application		Provides connectivity to SIMOREG/SIMOVERT drives, PROFIBUS DP I/O and SAMMS Motor controllers from **545, 555 and 575 CPU's (except 545-1103).** Number of FIM's/CON: 15 Number of Drops/FIM: 15/16 Max Communication Speed: PROFIBUS DP 1.5MBaud All Others 38.4 K Baud Slots: 1

Description and Ordering Information (Continued)

Technical Specifications

386/ATM module	PPX:	505-ATM-4120
Application		High performance computing
Design		
CPU		80C386SX (socket for 80C387SX math processor)
RAM		4 Mbytes DRAM
Operating system		MS-DOS 5.0
HD drive		512 Mbytes
Floppy drive		3.5", 1.44 Mbytes
Drivers		Language independent, direct RLL programming & status interface between the 386/ATM and the PLC
Slots		3

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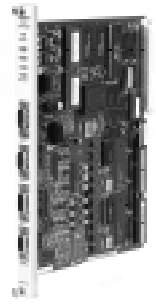

Technical Specifications

PPX:	505-2571 Program Port Expander
Application	Provides 4 additional communications ports which function like the program port on the CPU
Module Type	Special Function
Practical Support	NITP (TBP not supported)
Baud Rates	1200, 2400, 9600, 19200
Port 1 Description	RS-232C, male DB9
Port 2 Description	RS-232C, male DB9
Port 3 Description	RS-422, female DB9
Port 4 Description	RS-422, female DB9

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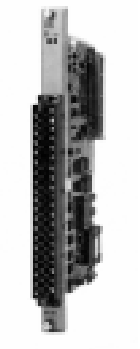


Technical Specifications

Special modules PPX:	505-5100 (Turbo Plastic module)	505-5103 (Turbo Parison module)
Application	Provides a flexible, integrated control system for injection molding machines. Closed-loop profiles for clamping, pressure and velocity control are implemented.	Provides a flexible, integrated control system for blow molding machines. It can control up to 4 die heads and 2 accumulators or rams.
Update time	< 2 ms	1 to 32 ms (user configurable)
Inputs		
Digital	4 points, 0 to +28 V DC	
Analog	5 points, 0 to +5/ 0 to +10 V DC	5 points, 0 to +10 V DC
Outputs		
Digital	4 points, 15 to +24 V DC / 500 mA	4 points, 15 to +24 V DC / 500 mA
Analog	4 points, -10 to +10 V DC / 5 mA	4 points, -10 to +10 V DC / 5 mA
Slots	1	1

Adapter modules PPX:	6MT Adapter 505-5190	7MT Adapter 505-7190
Type I/O	6MT, 5MT Discrete	7MT Analog
Number of Points for Adapter	256 inputs & 256 outputs if located in local or remote base 208 inputs and 240 outputs if located in a 525 or 535 CPU distributed base	128 in local or remote base only 1 to 32 ms (user configurable) Does not operate in a distributed base
Update Time	10ms	Every scan if so configured
Power Requirements	+9.5VDC Class 2.4 amp Power Supply or from 5TI	±12/+5VDC Power Supply or PM550™ Power Supply
Type Module	Special Function	Special Function
Number slots	1	1

Application, Function

The perfect integration platform

The SIMATIC 575 Industrial Controller is the integration platform that maximizes the performance of your control application. Through a standard VMEbus, this powerful system lets you take advantage of intelligent off-the-shelf modules that specifically match your needs, while eliminating the integration bottlenecks found in many dedicated systems. The SIMATIC 575 industrial controller is the perfect integration platform for your application.

Start with a proven foundation

The SIMATIC 575 controller combines the proven advantages of the SIMATIC 545 PLC with the inherent flexibility of VMEbus. This industrial control system incorporates the user-friendly TISOFT programming language and higher level capabilities of SIMATIC APT (Application Productivity Tool) to help you solve the most demanding applications quickly and easily. Plus, it allows complete connectivity with the SIMATIC 505, S5 and S7 families of I/O and intelligent modules for a solution that meets your current requirements and will let you take advantage of future technology.

Multiple masters improve data exchange

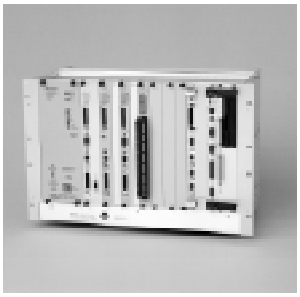
The multiple master strategy of the SIMATIC 575 industrial controller improves data exchange. Whether the modules you incorporate into the system are manufactured by Siemens or from other vendors, the SIMATIC 575 allows free exchange of control information, making it a true integration platform.

For added performance, you may choose specific task-oriented modules or a multi-processing approach. In either case, the control tasks are separated among the individual processors, significantly increasing system performance.

Through this open architecture approach, you have the capability to choose the modules that will best meet your application. It all fits together when using the SIMATIC 575 as your integration platform.

Fitting it all together

For industrial control applications that require state-of-the-art VMEbus solutions, the SIMATIC 575 is the integration platform that pulls it all together. Whether you need motion control, real-time data, an embedded PC, machine vision, inspection, or even a specialty I/O device, the SIMATIC 575 is the integrated control solution that fits your application.



Technical Specifications

NEW!

Central Processing Unit PPX:	575-2104	575-2105	575-2106
RLL scan time	0.9mS/K	0.45mS/K	0.45mS/K
User memory	832Kb	832Kb	1856Kb
Global memory	64Kb	64Kb	64Kb
Physical I/O (Any Mix)	8192/CPU	8192/CPU	8192/CPU
Regulatory control	64 PID loops	64 PID loops	64 PID loops
Analog alarms	128	128	128
Communication ports	2-RS232, 2-RS422	2-RS232, 2-RS422	2-RS232, 2-RS422
Number of Annex cards supported/CPU	1	1	1

Remote Bases: PPX:	505-6851-A
With optional PPX:575-2126 505 Remote I/O Channel Annex Card:	
Remote Bases	15/CPU
I/O channel update	1Mbaud

PPX:	505-6870
With optional PPX:505-CP5434-DP I/O Channel Annex Card:	
Max number of Slaves:	112
[1]Max slave distance:	
9600 Kbaud	1200 meters
12 Mbaud	100 meters
Max I/O Channel Update	12 Mbaud

[1] Greater distances can be obtained using Siemens fiber optic cabling.

NEW!

CPU Memory Size

575-2104/2105 Total Memory 832 KBytes

Memory Type	Block Allocation Size	Required per Block	Minimum Size	Maximum Size -2104 / 2105	Total Required for Maximum -2104 / 2105
Ladder (L)	1K byxtes	3K bytes	1K bytes	273K bytes	819K bytes
Variable (V)	1K bytes	1K bytes	1K bytes	187K bytes	817K bytes
Constant (K)	1K bytes	1K bytes	0K bytes	816K bytes	816K bytes
Special (S)	1K bytes	1K bytes	0K bytes	1840K bytes	1840K bytes
Compiled Special (CS)	1K bytes	1K bytes	0K bytes	816K bytes	816K bytes
User (U)	1K bytes	1K bytes	0K bytes	816K bytes	816K bytes
TMR/CTR	1024 per block	5K bytes	1024	20,480	100K bytes
DRUMs	64 per block	3K bytes	64	2304	108K bytes
Shift registers	1024 per block	1K bytes	1024	16,384	16K bytes
Table moves	1024 per block	2K bytes	1024	14,336	28K bytes
One shots	1024 per block	1K bytes	1024	32,768	32K bytes

575-2106 Total Memory 1856 KBytes

Memory Type	Block Allocation Size	Required per Block	Minimum Size	Maximum Size	Total Required for Maximum
Ladder (L)	1K byxtes	3K bytes	1K bytes	1856K bytes	–
Variable (V)	1K bytes	1K bytes	1K bytes	614K bytes	1842K bytes
Constant (K)	1K bytes	1K bytes	0K bytes	1841K bytes	1841K bytes
Special (S)	1K bytes	1K bytes	0K bytes	1840K bytes	1840K bytes
Compiled Special (SF)	1K bytes	1K bytes	0K bytes	1840K bytes	1840K bytes
User (U)	1K bytes	1K bytes	0K bytes	1840K bytes	1840K bytes
TMR/CTR	1024 per block	5K bytes	1024	20,480	100K bytes
DRUMs	64 per block	3K bytes	64	2304	108K bytes
Shift registers	1024 per block	1K bytes	1024	16,384	16K bytes
Table moves	1024 per block	2K bytes	1024	14,336	28K bytes
One shots	1024 per block	1K bytes	1024	32,768	32K bytes

NOTE: The CPU has 23,552 control relays (CRS).
The following are retentive:
769-1024
1793-2048
2817-3072
3841-4096
4865-5120
5889-6144
6913-7168
7937-10240

Description and Ordering Data

Overview

The PPX:575-6660 Power Supply provides up to 185 W to the VME base. It operates on either 110 or 220 VAC input voltage, depending on the position of the user-accessible jumper selector. The PPX:575-6663 Power Supply provides up to 300 W to the VME base. It operates on 110 VAC input voltage.

Power Supply Specifications

Input Specifications		PPX:575-6660 Power Supply	PPX:575-6663 Power Supply
AC input voltage		110 VAC (85—132 VAC)	110/220 VAC, jumper selectable (85—132, 170—264 VAC)
Input voltage frequency		47 to 63 Hz	47 to 63 Hz
Input current			
	maximum operating	5 A rms	8 A rms
	inrush	50 A peak for up to 100 ms	50 A peak for up to 100 ms
	overcurrent protection	fuse provided	fuse provided
	Input fusing	8 A, 250 VAC, slow-blow, 3 AG fuse	10 A, 250 VAC, slow-blow, 3 AG fuse
Output Specifications			
Voltage	**Range**	**Current Rating**	**Current Rating**
+5	4.875 to 5.250	25 A	35 A
+12	11.64 to 12.60	3 A	6 A[1]
-12	-11.64 to -12.60	2 A	4 A[1]
V_{stdby} (Run mode)	4.875 to 5.250	1 A[2]	1 A[2]
V_{stdby} (Battery backup mode)	3 to 5 volts	100 mA[3]	100 mA[3]
Dimensions		10.3" H x 6.3" D x 3.6" W	10.3" H x 6.3" D x 3.6" W

[1]The load power supplied by the +12 or -12 volt output must not exceed the power supplied by the +5 volt output (i.e., with a 5 A load on the +5 V, the load current supplied by the +12 or -12 must not exceed 2A.

[2]+5 V current draw must be reduced by the amount of the V_{stdby} current used.

[3]The battery will maintain memory for a time inversely proportional to the current consumed (e.g. 5Ah / 4 mA = 52 days, assuming a fully charged battery).

NOTE: The backplane termination consumes 1.0 A from the +5 V supply.

Description and Ordering Information

Technical Specifications

Discrete Input Modules PPX:	575-4232	575-4332
Inputs:		
Number	32	32
Galvanic Isolation	yes	yes
In groups of	8	8
Voltage Range	79 to 132 VAC	14 to 36 VDC
Input Current		
Type "1"	4.0 to 15 mA	2.0 to 15 mA
Module Width	1"	1"

Discrete Output/Relay Modules PPX:	575-4616	575-4532	575-4732	575-4916 (Relay)
Outputs:				
Number	16	32	32	16
Galvanic Isolation	yes	yes	yes	yes
In groups of	4	8	8	4
Voltage Range	79 to 132 VAC	4.5 to 36 VDC	4.5 to 36 VDC	4.5 to 36 VDC 20 to 265 VAC
Output Current				
Type "1"	1.0 amp	0.5 amp	2.0 amp	2.0 A Resistive 1.0 A Inductive AC 0.88 Inductive DC
Short Circuit Protection	Fuse	Fuse	Fuse	Fuse
Module Width	1"	1"	1"	1"

Discrete Input/Output Module PPX:	575-4366
Inputs:	
Number	16
Galvanic Isolation	yes
In groups of	8
Voltage Range	14 to 36 VDC
Input Current	
Type "1"	0.5 Amp
Outputs:	
Galvanic Isolation	16
In groups of	8
Short Circuit Protection	Fuse
Module Width	1"