

Programmable controllers Automation platforms Distributed I/O The essential guide



The essential guide



Smart solutions for all your control system applications



A simplified selection guide to identify, at a glance, all the products you need for developing control system applications, from small, simple machines to complex installations.



Welcome to the world of Simply Smart* from Telemecanique

With Transparent Ready, Schneider Electric has applied market standards to its control system architectures, making data exchange even easier. Smart and simple to use, the Telemecanique software offer ensures maximum efficiency in terms of application development and maintenance, while its high-performance PLCs help to achieve optimum installation availability and productivity. Committed to maximizing your investment over the long term, Schneider Electric makes it easy for you to develop your applications with complete peace of mind.

**Simply Smart: Smarter and more intelligent, yet even easier to use.*

Unity, taking you into a new world of automation

At the heart of the Telemecanique offer, Unity is the new generation software and hardware automation platform.



Open: Based on universal Microsoft Visio, VBA and XML software standards, Unity is designed to allow your tools to work together.

Smart: Unity provides a common IEC development environment for Modicon Premium, Atrium and Quantum platforms. With Unity, you can reduce development cycles and improve quality by reusing program standards.

Flexible: The new range of Modicon Premium, Atrium and Quantum processors offers extended memory capabilities and greater execution performance.

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A wide range of specialized platforms...

New



Twido, ideal for simple installations and small machines.
Available in compact or modular versions, Twido offers flexibility and simplicity.

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New



Modicon TSX Micro, ideal for machine builders.
At the heart of the machine, TSX Micro offers compactness, modularity and integration benefits.

- CANopen machine bus connection
- Low-cost Ethernet connection
- Double memory capacity

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New



Modicon Premium, ideal for manufacturing applications.
Outstanding flexibility for distributed architectures and integration of advanced control system functions.

- New high-performance processors
- CANopen machine bus connection, from entry level
- USB connection

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New



Modicon Quantum, ideal for process applications.
High level of performance for process control and architecture availability.

- New high-performance processors
- Onboard Ethernet
- Memory expansion option via PCMCIA
- USB connection

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Modicon Momentum M1/M1E, ideal for distributed architectures.
Compactness and flexibility for I/O control distribution on Ethernet.

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New



Advantys STB, ideal for machine builders.
The perfect I/O integration solution.

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Lexium and Twin Line

Motion control for Brushless motors.

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Power supplies and transformers.

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Automation Twido Programmable controllers Bases



Type of base	Compact		
Supply voltage	100...240 VAC		
Number of discrete I/O	10	16	24
Number of discrete inputs (24 VDC)	6 sink/source	9 sink/source	14 sink/source
Number of discrete outputs	4 relay 2 A	7 relay 2 A	10 relay 2 A
Types of connection	Non-removable screw terminals		
Possible I/O extension modules	–	–	4
Counter	3 x 5 kHz, 1 x 20 kHz		
Serial ports	1 x RS 485	1 x RS 485; as an option: 1 x RS 232C or RS 485	
Protocol	Modbus Master/slave, ASCII, remote I/O		
Dimensions LxDxH	80x70x90 mm	80x70x90 mm	95x70x90 mm
Reference	TWDLCAA10DRF	TWDLCAA16DRF	TWDLCAA24DRF
	Real-time clock (as an option)	TWDXCPRTC	
	Display unit (as an option)	TWDXCPODC	



Type of base	Modular		
Number of discrete I/O	20		40
Number of discrete inputs (24 VDC) (1)	12 sink/source	12 sink/source	24 sink/source
Number of discrete outputs	8 source transistor 0.3 A	6 relay and 2 source transistor 0.3 A	16 source transistor 0.3 A
Types of connection	HE 10 connector	Removable screw terminals	HE 10 connector
Possible I/O extension modules	4	7	7
Supply voltage	24 VDC		
Integrated counting and position control	Counting: 2 x 5 kHz, 2 x 20 kHz; Position control: PLS/PWM 2x7 kHz		
Serial ports	1 x RS 485; as an option: 1 x RS 232C or RS485		
Protocol	Modbus Master/slave, ASCII, remote I/O		
Dimensions LxDxH	35.4x70x90 mm	47.5x70x90 mm	47.5x70x90 mm
Reference	TWDLMDA20DTK (1)	TWDLMDA20DRT	TWDLMDA40DTK (1)
	Real-time clock (as an option)	TWDXCPRTC	
	Display unit (as an option)	TWDXCPODM	
	Memory extension (as an option)	–	TWDXCPMFK64

(1) Also available in the following version: sink transistor outputs (TWDLMDA20DUK and TWDLMDA40DUK)

Accessories

Prewired system for modules with HE10 connectors	For modular bases TWDLMDA20DTK/40DTK	For inputs TWDDI16DK/32DK	For outputs TWDDO16TK/32TK
TwidoFast “preformed” cable L = 3 m	TWDFCW30M	TWDFCW30K	TWDFCW30K
L = 5 m	TWDFCW50M	TWDFCW50K	TWDFCW50K
Telefast sub-bases L = 1 m	TWDFST20DR10	TWDFST16D10	TWDFST16DR10
L = 2 m	TWDFST20DR20	TWDFST16D20	TWDFST16DR20

Memory cartridge and software	Memory cartridge	TwidoSoft software
Description	Application update	with cable
Reference	TWDXCPMFK32	TWDSPU1001V10M

I/O modules



Type of module		Analog			AS-Interface Master	
Number of I/O		2 inputs	1 output	2 inputs/1 output	2 modules max. 62 discrete slaves max. 7 analog slaves max.	
Protocol/profile		–			AS-Interface/M3, V 2.11 (S.7.4 profile not supported)	
Connection		Removable screw terminals				
Inputs	Range	0...10 V (1) 4...20 mA (2)	–	0...10 V (1) 4...20 mA (2)	Type K, J, T thermocouple 3-wire Pt 100 thermal probe	
	Resolution	12 bits (4096 points)	–	12 bits (4096 points)	–	
Outputs	Range	–	0...10 V 4...20 mA	–	–	
	Resolution	–	12 bits (4096 points)	–	–	
Measuring accuracy		0.2 % FS			–	
Supply voltage		24 V DC				
Dimensions LxDxH		23.5 x 70 x 90 mm			23.5 x 70 x 90 mm	
Reference		TWDAMI2HT	TWDAMO1HT	TWDAMM3HT	TWDALM3LT	TWDNOI10M3

(1) Non differential

(2) Differential

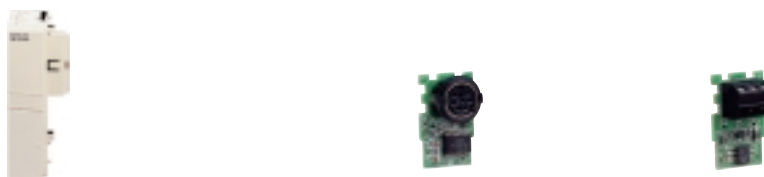


Type of module		Discrete				
Number of discrete I/O		8	4 inputs/4 outputs	16	16	32
Connections		Removable screw terminals			HE 10 connectors	
Reference	Inputs 24 VDC (3)	TWDDDI8DT	TWDDMM8DRT	TWDDDI16DT	TWDDDI16DK	TWDDDI32DK
	Relay outputs 2 A	TWDDRA8RT	TWDDMM8DRT	TWDDRA16RT	–	–
	Source transistor outputs 0.1 A	TWDDDO8TT (4)	–	–	TWDDDO16TK (4)	TWDDDO32TK (4)

(3) All the inputs are sink/source

(4) Also available in the following version: sink transistor outputs, (TWDDDO8UT, TWDDDO16UK and TWDDDO32UK)

Communication modules



Type of module	Serial interface module			Serial interface adaptor		
Physical layer (non isolated)	RS 232C	RS 485		RS 232C	RS 485	
Connections	Mini-DIN connector		Screw terminals	Mini-DIN connector		Screw terminals
Protocol	Modbus Master/slave, ASCII, remote I/O					
Compatibility with Twido base	Modular base TWDLMDA			Compact base TWDLCAA16/24DRF Modular base via the integrated display module TWDXCPODM		
Reference	TWDMOZ232D	TWDMOZ485D	TWDMOZ485T	TWDMAC232D	TWDMAC485D	TWDMAC485T

Automation _____ Modicon TSX Micro platform

Basic configuration



Type of processor		TSX 3705	TSX 3708	TSX 3710	
Power supply		110...240 VAC		24 VDC	
Number of slots	Standard	2 (1 available)	3 (1 available)	2 (1 available)	
	On extension	–	–	2	
Number of integrated discrete I/O modules		1 (16 I, 12 Q)	2 (32 I, 24 Q)	1 (16 I, 12 Q)	1 (16 I, 12 Q)
Number of integrated analog I/O modules		–	–	–	–
Type of integrated I/O		I: 24 VDC, Q: relay	I: 24 VDC, Q: relay	I: 24 VDC, Q: sol.st. 0.5 A	I: 24 VDC, Q: relay
Application-specific modules (counter, position control)		2 half-size		2 half-size	
Bus	AS-Interface	–		1 half-size	
	CANopen	–		–	
	Fipio	–		–	
Networks	Modbus Plus, Fipway	–		–	
	Ethernet TCP/IP	–		1 external module	
Memory capacity	Integrated	11 K words		14 K words	
	With PCMCIA extension	–		–	
Execution time for one instruction	Boolean	0.25 µs		0.25 µs	
	Numerical	4.81 µs		4.81 µs	
Reference	With screw terminals	TSX3705028DR1	TSX3708056DR1	TSX3710128DT1	TSX3710128DR1
	With HE 10 connector (1)	–	–	TSX3710128DTK1	–

(1) For use with Telefast 2 wiring system

(2) Basic configuration provided without I/O modules

Memory extension



Type of PCMCIA card for TSX 3721/22		Application		
Technology		SRAM	Flash EPROM	Backup
Memory size (3)	32 K words	TSXMRP032P	TSXMFP032P	TSXMFPBAK032P
	32 K words/128 K words	TSXMRP232P	TSXMFP232P	–
	64 K words	TSXMRP064P	TSXMFP064P	–
	64 K words/128 K words	TSXMRP264P	TSXMFP264P	–
	128 K words	TSXMRP0128P	TSXMFP0128P	–
	128 K words/128 K words	TSXMRP2128P (4)	–	–

(3) The 1st value corresponds to the size of the application area, the second to the size of the area for data storage (recipes, production data, etc).

(4) These cards have an additional SRAM area for storing application object symbols.



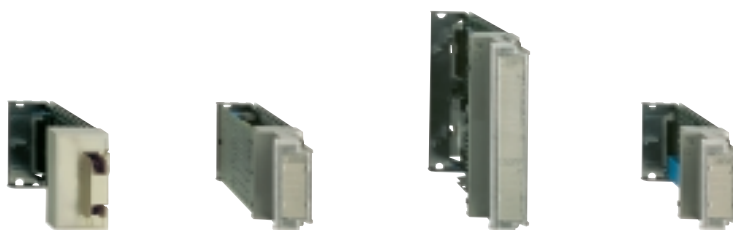
TSX 3710			TSX 3721		TSX 3722			
24 VDC	110...240 VAC		24 VDC	110...240 VAC		24 VDC	110...240 VAC	
2 (1 available)			3 (3 available)		3 (3 available)			
2			2		2			
2 (32 I, 32 Q)	1 (16 I, 12 Q)	1 (16 I, 12 Q)	-		-			
-	-	-	-		1 (8 I, 1 Q)			
I: 24 VDC, Q: sol. st. 0.1 A	I: 115 VAC, Q: relay	I: 24 VDC, Q: relay	-		I: 0...10 V or 0/4...20 mA, Q: 0...10 V			
2 half-size			4 half-size		4 half-size (2 integrated channels)			
1 half-size			1 half-size		1 half-size			
-			1 PCMCIA card		1 PCMCIA card			
-			1 PCMCIA card		1 PCMCIA card			
-			1 PCMCIA card		1 PCMCIA card			
1 external module			1 external module		1 external module			
14 K words			20 K words		20 K words			
-			128 K words + 128 K words for file storage		128 K words + 128 K words for file storage			
0.25 µs			0.13 µs (0.19 µs with PCMCIA)		0.13 µs (0.19 µs with PCMCIA)			
4.81 µs			4.50 µs		4.50 µs			
-	TSX3710028AR1	TSX3710028DR1	TSX3721101 (2)	TSX3721001 (2)	TSX3722101 (2)	TSX3722001 (2)		
TSX3710164DTK1	-	-						

Mini extension rack



Type of rack	2 slots	
For use with	TSX3710/21/22	
Reference	4 positions	TSXRKZ2

Process power supplies see pages 36 and 37



Type of module		Discrete inputs			
Connection		By HE 10 connector (1)		By screw terminals (2)	
Module format		Half		Standard	Half
Number of channels		12		32	8
Input voltage	24 VDC positive logic	TSXDEZ12D2K	–	TSXDEZ32D2	–
	24 VDC positive/negative logic	–	TSXDEZ12D2	–	–
	100...120 VAC	–	–	–	TSXDEZ08A4
	200...240 VAC	–	–	–	TSXDEZ08A5

(1) For use with Telefast 2 wiring system

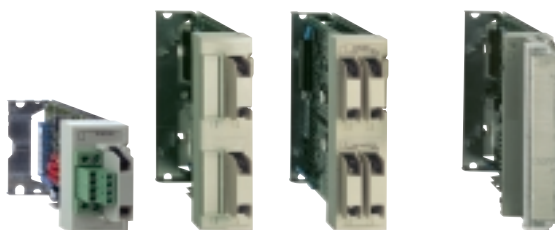
(2) Terminal block supplied with the module



Type of module		Discrete outputs				
		Solid state			Relay	
Connection		By HE 10 conn. (1)		By screw terms. (2)		
Module format		Half		Standard	Half	
Number of protected channels		8		32	4	8
Protection of outputs		Yes		Yes	Yes	No
Output voltage/current	24 VDC/0.5 A	TSXDSZ08T2K	TSXDSZ08T2	TSXDSZ32T2	–	–
	24 VDC/2 A	–	–	–	TSXDSZ04T22	–
	24 VDC/1 A per channel	–	–	–	–	TSXDSZ08R5
	24...240 VAC/1 A per channel	–	–	–	–	–

(1) For use with Telefast 2 wiring system

(2) Terminal block supplied with the module



Type of module		Discrete I/O					
Connection		By HE 10 connector (1)			By screw terminals (2)		
Module format		Half		Standard			
Number of inputs		8	16	32	16	16	16
Number of outputs		8 solid state	12 solid state	32 solid state	12 solid state	12 solid state	12 solid state
Protection of outputs		Yes				No	
Voltage/current output	24 VDC/0.5 A	TSXDMZ16DTK	TSXDMZ28DTK	–	TSXDMZ28DT	–	–
	24 VDC/0.1 A	–	–	TSXDMZ64DTK	–	–	–
	100...120 VAC/50 VA	–	–	–	–	TSXDMZ28DR	TSXDMZ28AR

(1) For use with Telefast 2 wiring system

(2) Terminal block supplied with the module

Analog I/O modules



Type of module	Analog inputs	
	High level with common point	High level isolated
Connection	By screw terminals (supplied)	
Number of channels	8	4
Resolution	11 bits + sign	12 bits
Input signal	$\pm 10\text{ V}$, $0\dots 10\text{ V}$	$0\dots 20\text{ mA}$, $4\dots 20\text{ mA}$
Reference	TSXAEZ801	TSXAEZ802
		TSXAEZ414

(1) $\pm 10\text{ V}$, $0\dots 10\text{ V}$, $0\dots 5\text{ V}$, $1\dots 5\text{ V}$, $0\dots 20\text{ mA}$, $4\dots 20\text{ mA}$, B, E, J, K, L, N, R, S, T, U, Pt 100, Ni 1000 (2 or 4-wire), thermal probe, thermocouple



Type de module	Analog outputs	
	With common point	
Connection	By screw terminals (supplied)	By screw terminals (supplied)
Number of channels	4	2
Resolution	11 bits + sign	11 bits + sign or 12 bits
Input signal	$\pm 10\text{ V}$, $0\dots 10\text{ V}$	$\pm 10\text{ V}$, $0\dots 20\text{ mA}$, $4\dots 20\text{ mA}$
Reference	TSXASZ401	TSXASZ200



Type of module	Analog I/O	Analog I/O
	Integrated	High level with common point
Connection	By 15-way SUB-D connector (not supplied)	By screw terminals (supplied)
Number of inputs	8	4
Number of outputs	1	2
Resolution	8 bits	11 bits + sign or 12 bits
I/O signal	$0\dots 10\text{ V}$, $0\dots 20\text{ mA}$, $4\dots 20\text{ mA}$	$\pm 10\text{ V}$, $0\dots 10\text{ V}$, $0\dots 20\text{ mA}$, $4\dots 20\text{ mA}$
Reference	TSX3722 (2)	TSXAMZ600

(2) References: see pages 8 and 9, TSX3722 basic configuration

Automation _____ Modicon TSX Micro platform

Integrated counter modules



Type of module	Counting on discrete I/O module	Integrated counting on TSX 3722
Type of inputs for	Sensors, limit switches Totem Pole incremental encoders	Sensors, limit switches Totem Pole incremental encoders
Frequency	500 Hz	10 kHz
Response time	8 ms	8 ms
Number of channels	2 (1)	2 (2)
Reference	TSX37 (3)	TSX3722 (3)

(1) On the first 4 inputs of the 28, 32 or 64 discrete I/O modules

(2) Plus 2 channels on the discrete I/O

(3) References: see pages 4 and 5, TSX37 basic configuration

Counter/position control modules



Type of module	Counter			Positioning
Type of inputs for	2-wire PNP sensors 24 VDC Totem Pole incremental encoders 5 VDC RS 422, 10...30 VDC			SSI or parallel absolute encoder 5 VDC, 10...30 VDC
Frequency	40 kHz	40 kHz	500 kHz	200 or 1000 kHz
Response time	5 ms	5 ms		5 ms
Number of channels	1	2		1
Reference	TSXCTZ1A	TSXCTZ2A	TSXCTZ2AA	TSXCTZ1B

Communication modules



Type of module		Ethernet TCP/IP For TSX 3710/21/22 PLCs	
Speed		10/100 Mbps	10/100 Mbps
Standard services		TCP/IP(Uni-TE, Modbus)	TCP/IP(Uni-TE, Modbus)
Transparent Ready	Global Data	–	–
	I/O Scanning	Yes	Yes
	TCP Open	–	–
Web server	Standard services	Yes	Yes
	FactoryCast services	–	Yes with 8 Mb of user Web pages and graphics editor
Reference		TSXETZ410	TSXETZ510



Type of module		Sensor bus, machine bus and fieldbus		
		AS-Interface	CANopen	Fipio
Name and description		Half size in-rack	PCMCIA card	PCMCIA card
Speed		167 Kbps	20 Kbps...1 Mbps dep. on distance	1 Mbps
Reference		TSXSAZ10	TSXCPP110	TSXFPP10



Type of module		Serial links Uni-Telway, Modbus	
Name and description		Integrated port	PCMCIA card
Speed		19.2 Kbps	1.2...19.2 Kbps
Reference	With interface RS 485	TSX37 (1)	TSXSACP114
	RS 232D	–	TSXSACP111
	20mA CL	–	TSXSACP112

(1) References: see pages 4 and 5, TSX3705/08/10 PLCs with link integrated on TER terminal port, or TSX3721/22 PLCs with link integrated on AUX terminal port.



Type of module		Other networks	
		Modbus Plus	Fipway
Name and description		PCMCIA card	PCMCIA card
Speed		1 Mbps	1 Mbps
Reference		TSXMBP100	TSXFPP20



▲ Launch 2nd half 2004

Type of processor		TSX 5700	TSX 5710	TSX 5720
		1 rack	4 racks max.	16 racks max.
Number of I/O in racks	Discrete	256	512	1024
	Analog	12	24	80
Integrated process control		No	No	Yes
Application-specific channels (counter, position control, weighing)		4	8	24
Bus	AS-Interface	1	2	4
	CANopen	1 (integrated)	1	1
	INTERBUS, Profibus DP	–	1	1
Networks (Ethernet, Modbus Plus, Fipway)		1	1	1
Memory capacity	Integrated	96 Kb data/prog	96 Kb data/prog	160 Kb data/prog
	With PCMCIA extension	96 Kb data/128 Kb prog.	96 Kb data/224 Kb prog.	160 Kb data/768 Kb prog.
Execution time for one instruction	Boolean	0.50 μ s	0.50 μ s	0.19 μ s
	On word or arithmetic	0.62 μ s	0.62 μ s	0.25 μ s
Reference	Without integrated port	TSXP570244M (2) ▲	TSXP57104M ▲	TSXP57204M
	Integrated Ethernet	–	TSXP571634M ▲	TSXP572634M
	Integrated Fipio	–	TSXP57154M ▲	TSXP57254M ▲

(1) The second value corresponds to the integrated memory capacity when the processor is equipped with a PCMCIA memory card

(2) Also available in "ready-to-use" version, consisting of a 6-slot non-extendable rack, a power supply module, a TSXP570244 processor and a 40kHz 4-channel counter module:

(3) PC format card on ISA bus

Processors under PL7 software



Type of processor		TSX 5710	TSX 5720
		4 racks max.	16 racks max.
Number of I/O in racks	Discrete	512	1024
	Analog	24	80
Integrated process control		No	Yes
Application-specific channels (counter, position control, weighing)		8	24
Bus	AS-Interface	2	4
	CANopen	1 (with TSXP57103M)	1
	INTERBUS, Profibus DP	–	1
Networks (Ethernet, Modbus Plus, Fipway)		1	1
Memory capacity	Integrated	32 K words data/prog.	48 K words data/prog. (4)
	With PCMCIA extension	32 K words data/64 K words prog.	32 K words data/160 K words prog.
Execution time for one instruction	Boolean	0.50 μ s	0.19 μ s
	On word or arithmetic	0.62 μ s	0.25 μ s
Reference	Without integrated port	TSXP57103M	TSXP57203M
	Integrated Ethernet	–	TSXP572623M
	Integrated Fipio	TSXP57153M	TSXP57253M
	Integrated Ethernet and Fipio	–	TSXP572823M

(4) The second value corresponds to the processor with integrated Fipio bus manager link.

(5) PC format card for PCI bus.

Atrium coprocessors under Unity Pro software



TSX 5730 16 racks max.	TSX 5740 16 racks max.	TSX 5750 16 racks max.	PCI 5720 16 racks max.	PCI 5730 16 racks max.
1024	2040	2040	1024	1024
128	256	512	80	128
Yes	Yes	Yes	Yes	Yes
32	64	64	24	32
8	8	8	4	8
1	1	1	1	1
3	4	5	1	3
3	4	5	2	4
192 Kb data/prog.	320/440 Kb (1) data/prog.	640/896 Kb (1) data/prog.	160 Kb data/prog.	224 Kb data/prog.
1792 Kb	440 Kb data/2048 Kb prog.	896 Kb data/7168 Kb prog.	160 Kb data/768 Kb prog.	224 Kb data/1792 Kb prog.
0.12 µs	0.06 µs	0.037 µs	0.19 µs	0.12 µs
0.17 µs	0.08 µs	0.045 µs	0.25 µs	0.17 µs
TSXP57304M	–	–	TSXPCI57204M (3)	–
TSXP573634M	TSXP574634M ▲	TSXP575634M	–	–
TSXP57354M ▲	TSXP57454M ▲	TSXP57554M ▲	–	TSXPCI57354M (3) ▲

TSXP57CD024M (24 VDC) and TSXP57CA024M (100...240 VAC)

Atrium coprocessors under PL7 software



TSX 5730 16 racks max.	TSX 5740 16 racks max.	PCX 5720 16 racks max.	PCX 5730 16 racks max.
1024	2040	1024	1024
128	256	80	128
Yes	Yes	Yes	Yes
32	64	24	32
8	8	4	8
1	1	1	1
2	2	1	2
3	4	1	3
64/80 K words data/prog. (4)	96 K words data/prog.	48 K words data/prog.	80 K words data/prog.
32 K words data/384 K words prog.	32 K words data/512 K words prog.	32 K words data/160 K words prog.	32 K words data/384 K words prog.
0.12 µs	0.06 µs	0.19 µs	0.12 µs
0.17 µs	0.08 µs	0.25 µs	0.17 µs
TSXP57303M	–	TPCX57203M (5)	–
TSXP573623M	–	–	–
TSXP57353M	TSXP57453M	–	TPCX57353M (5)
–	TSXP574823M	–	–

Modicon Premium platform

Memory extension for Unity Pro processors



Type of PCMCIA card		Application		Additional data
Technology		SRAM	Flash EPROM	SRAM
Memory size	128 Kb	TSXMRPP128K	TSXMFPP128K	–
	224 Kb	TSXMRPP224K	TSXMFPP224K	–
	384 Kb	TSXMRPP384K	–	–
	448 Kb	TSXMRPC448K (1)	–	–
	512 Kb	–	TSXMCPC512K (2)	–
	1 Mb	TSXMRPC001M (1)	–	–
	2 Mb	TSXMRPC002M (1)	TSXMCPC002M (2)	–
	3 Mb	TSXMRPC003M (1)	–	–
	7 Mb	TSXMRPC007M (1)	–	TSXMRPF008M
8 Mb	–	–	TSXMRPF008M	

(1) The user can reserve part of the memory space for data storage (recipes, production data) on request.

(2) These cards have an additional SRAM area for storing data (recipes, production data).

Memory extension for PL7 processors



Type of PCMCIA card		Application		Additional data
Technology		SRAM	Flash EPROM	SRAM
Memory size (3)	32 K words	TSXMRP032P	TSXMFP032P	–
	32 K words/128 K words	TSXMRP232P	TSXMFP232P	–
	64 K words	TSXMRP064P	TSXMFP064P	–
	64 K words/128 K words	TSXMRP264P	TSXMFP264P	–
	128 K words	TSXMRP0128P	TSXMFP0128P	–
	128 K words/128 K words	TSXMRP2128P (4)	–	–
	256 K words	TSXMRP0256P	–	–
	256 K words/640 K words	TSXMRP3256P (4)	–	–
	384 K words/640 K words	TSXMRP3384P	–	–
	512 K words	TSXMRP0512P (4)	–	–
	2048 K words	–	–	TSXMRPDS2048P

(3) The 1st value corresponds to the size of the application area, the second to the size of the area for data storage (recipes, production data, etc).

(4) These cards have an additional SRAM area for storing application object symbols.

Power supply modules ⁽¹⁾



Type of power supply module for	Premium					Atrium ⁽²⁾
Input voltage	24 VDC		110...240 VAC	100...120/200...240 VAC		24 VDC
Output voltage	5 VDC/24 VDC					5 VDC
Total useful power	30 W	50 W	26 W	50 W	77 W	26 W
Format	Standard	Double	Standard	Double	Double	–
Reference	TSXPSY1610M	TSXPSY3610M	TSXPSY2600M	TSXPSY5500M	TSXPSY8500M	TSXPSI2010

(1) Process power supplies see pages 36 and 37

(2) Only for Unity coprocessors

Racks



Type of rack	Non extendable	Extendable
For configuration	1 rack	Multi-rack (16 max.)
Reference	–	TSXRKY4EX
4 positions	TSXRKY6	TSXRKY6EX
6 positions	TSXRKY8	TSXRKY8EX
8 positions	TSXRKY12	TSXRKY12EX
12 positions		

Connection accessories

Type	Bus X daisy chaining cable for extendable racks	Line terminators
	–	Set of 2
Reference	–	TSXTLYEX
L = 1 m	TSXCBY010K	–
L = 3 m	TSXCBY030K	–
L = 5 m	TSXCBY050K	–
L = 12 m	TSXCBY120K	–
L = 18 m	TSXCBY180K	–
L = 28 m	TSXCBY280K	–
L = 38 m	TSXCBY380K	–
L = 50 m	TSXCBY500K	–
L = 72 m	TSXCBY720K	–
L = 100 m	TSXCBY1000K	–



Type of module		Discrete inputs				
Connection		By screw terminals TSXBLY01 (1)		By HE 10 connector (2)		
Number of isolated channels		8	16	16 (3)	32	64
Input voltage	24 VDC	TSXDEY08D2	TSXDEY16D2	TSXDEY16FK	TSXDEY32D2K	TSXDEY64D2K
	48 VDC	–	TSXDEY16D3	–	TSXDEY32D3K	–
	24 VAC	–	TSXDEY16A2 (4)	–	–	–
	48 VAC	–	TSXDEY16A3	–	–	–
	100...120 VAC	–	TSXDEY16A4	–	–	–
	200...240 VAC	–	TSXDEY16A5	–	–	–

(1) Terminal block to be ordered separately

(2) For use with Telefast 2 wiring system

(3) Module with high-speed isolated inputs (filtering from 0.1 to 7.5 ms) able to activate the event-triggered task

(4) Module also compatible with 24 VDC negative logic



Type of module		Discrete outputs						
		Solid state				Relay	Triac	
Connection		By screw terminals TSXBLY01 (1)		By HE10 conn. (2)		By screw terminals TSXBLY01 (1)		
Number of protected channels		8	16	32	64	8	8	16
Output voltage/current	24 VDC/0.5 A	TSXDSY08T2	TSXDSY16T2	–	–	–	–	–
	24 VDC/2 A	TSXDSY08T22	–	–	–	–	–	–
	24 VDC/0.1 A	–	–	TSXDSY32T2K	TSXDSY64T2K	–	–	–
	48 VDC/1 A	TSXDSY08T31	–	–	–	–	–	–
	48 VDC/0.25 A	–	TSXDSY16T3	–	–	–	–	–
	24φ...48 VDC-24...240 VAC/5A	–	–	–	–	TSXDSY08R5A	–	–
	24...120 VDC/5 A	–	–	–	–	TSXDSY08R4D	–	–
	48...240 VAC/1 A per channel	–	–	–	–	–	–	TSXDSY16S5
	48...40 VAC/2 A per channel	–	–	–	–	–	TSXDSY08S5	–

(1) Terminal block to be ordered separately

(2) For use with Telefast 2 wiring system



Type of module		Discrete I/O	
Connection		By HE 10 connector (2)	
Number of inputs		16 high-speed	
Number of protected outputs		12 solid state	12 reflex or timed
Output voltage/current	24 VDC/0.5 A	TSXDMY28FK	TSXDMY28RFK

(2) For use with Telefast 2 wiring system

Connection accessories: See the "Modicon Premium automation platform" catalog

Analog I/O modules



Type of module	Analog input					
	High level with common point			High level isolated	Low level isolated	
Connection	By 25-way SUB-D connector					By terminal block (1)
Number of channels	4 high-speed	8	16	8	16	4
Resolution	16 bits	12 bits		16 bits	16 bits	16 bits
Reference	High level input (2)	TSXAEY420	TSXAEY800	TSYAEY1600	TSXAEY810	–
	Multi-range	–	–	–	–	TSXAEY1614 (3) TSXAEY414 (4)

(1) Screw terminals **TSXBLY01** to be ordered separately

(2) ± 10 V, 0...10 V, 0...5 V, 1...5 V, 0...20 mA, 4...20 mA

(3) ± 63 mV thermocouple (B, E, J, K, L, N, R, S, T, U)

(4) ± 10 V, ± 5 V, 0...10 V, 0...5 V, 1...5 V, 0...20 mA, 4...20 mA, -13...+63 mV, 0...400 W, 0...3850 W, thermal probe, thermocouple



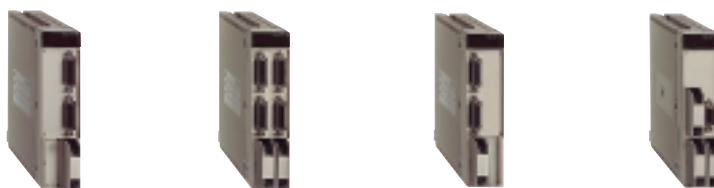
Type of module	Analog output	
	Isolated	With common point
Connection	By screw terminals TSXBLY01 (5)	By 25-way SUB-D connector
Number of channels	4	8
Resolution	11 bits + sign	13 bits + sign
Reference	Input signal (6) TSXASY410	TSXASY800

(5) Terminal block to be ordered separately

(6) ± 10 V, 0...10 V, 0...20 mA, 4...20 mA.

Automation Modicon Premium platform

Counter modules



Type of module	Counter		Counter/measurement	Electronic cam
Type of inputs for	Sensors (1) Incremental encoders (2)		Sensors (1) Encoders (2)(3)	Incremental encoders (2) Absolute encoders (4)
Counting	40 kHz		500 kHz/200 kHz (4)	
Cycle time	5 ms	10 ms	1 ms	–
Number of channels	2	4	2	128 cams
Number of axes	–	–	–	1
Reference	TSXCTY2A	TSXCTY4A	TSXCTY2C	TSXCCY1128

(1) For 2/3-wire PNP/NPN 24 VDC sensors

(2) For 5 VDC RS422, 10...30 VDC Totem Pole incremental encoders

(3) For SSI serial or parallel output absolute encoders

(4) For RS485 serial or parallel output absolute encoders

Motion control modules



Type of module	Stepper	Servomotors (asynchronous/brushless)				(brushless)
						SERCOS
Control outputs	RS422	+/- 10V				SERCOS
Compatible with ranges	Twin Line	Altivar, Twin Line, Lexium				Lexium
Functions (5)	–	Linear axes	Infinite axes –	Linear or infinite axes Linear interpolation		
Number of axes	2	2	4	Follower axes 2	– 3	Follower axes 8 (6)
Reference	TSXCFY21	TSXCAY21	TSXCAY41	TSXCAY22	TSXCAY33	TSXCSY84

(5) Other functions: See the “Modicon Premium automation platform” catalog

(6) 8 real axes, 4 imaginary axes, 4 external setpoints/A 16-axis module is also available (real axes, imaginary axes or external setpoints) **TSXCSY164**

Weighing modules



Type of module	ISP Plus	
	supplied uncalibrated	supplied calibrated and offer
Load cell inputs	50 measurements (for 1 to 8 load cells)	
Outputs	2 discrete and 1 RS 485 for display unit	
Reference	Without display unit TSXISPY101	Please consult your Schneider-electric agency
	With display unit TSXXBTH100 TSXISPY111	Please consult your Schneider-electric agency

Connection accessories: See the “Modicon Premium automation platform” catalog

Communication modules



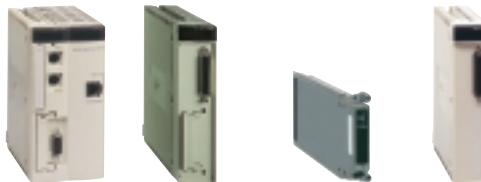
Type of module		Ethernet TCP/IP					
Speed		10 Mbps			10/100 Mbps		
Standard services		Ethway, TCP/IP (Uni-TE, Modbus)			TCP/IP (Uni-TE, Modbus)		
Transparent Ready	Global Data	–	–	Yes	Yes	Yes	–
	I/O Scanning	–	–	Yes	Yes	Yes	–
	TCP Open	–	Yes	–	–	Yes	–
Web server	Standard services	–	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	–	Yes	–	–	Yes	–
	FactoryCast HMI services	–	–	–	–	–	Yes
Reference		TSXETY110	TSXETY110WS	TSXP57 (1)	TSXETY4103	TSXETY5103	TSXWMY100

(1) References: see pages 10 and 11, Premium processors with integrated Ethernet TCP/IP port



Type of module		Sensor bus, machine bus and fieldbus				
		AS-Interface	CANopen	Fipio	INTERBUS	Profibus DP
Name and description		In-rack	PCMCIA	Integrated port	In-rack	In-rack
Speed		167 Kbps	20 K...1 Mbps	1 Mbps	0.5 Mbps	9.6 K...12 Mbps
Reference		TSXSAY1000	TSXCPP110	TSXP57 (2)	TSXIBY100	TSXPBY100

(2) References: see pages 10 and 11, Premium processors with integrated Fipio port



Type of module		Serial links					
		Uni-Telway			Modbus		ASCII
		Integrated port	In-rack	PCMCIA	In-rack	PCMCIA	PCMCIA
Name and description		Integrated port	In-rack	PCMCIA	In-rack	PCMCIA	PCMCIA
Speed		19.2 Kbps	19.2 Kbps	1.2...19.2 Kbps	19.2 Kbps	1.2...19.2 Kbps	1.2...19.2 Kbps
Reference	With interface	RS 485	TSXP57 (1)	TSXSCY21601	TSXSACP114	TSXSCY11601	TSXSACP114
		RS 232D	–	–	TSXSACP111	–	TSXSACP111
		20mA CL	–	–	TSXSACP112	–	TSXSACP112

(1) References: see pages 10 and 11, Premium processors with integrated Ethernet TCP/IP port



Type of module		Other networks	
		Modbus Plus	Fipway
Name and description		PCMCIA card	PCMCIA card
Speed		1 Mbps	1 Mbps
Reference		TSXMBP100	TSXFPP20

Automation Modicon Quantum platform

Processors



Type of processor		Simple applications	
Max. number of discrete I/O (1)	Local	Unlimited (27 slots max.)	
	Decentralized/distributed	31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)	
Max. number of analog I/O (1)	Local	Unlimited (27 slots max.)	
	Decentralized/distributed	1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)	
Type of application-specific I/O		Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus	
Communication ports (2)	Integrated Modbus	1 RS 232	2 RS 232/RS 485
	Modbus Plus	1 integrated, 2 in local rack	
	Ethernet TCP/IP	2 in local rack	
	Fieldbus	INTERBUS/Profibus DP: 2 in local rack	Profibus DP: 2 in local rack
Memory capacity	Integrated	256 Kb	512 Kb
	With PCMCIA extension	–	–
	Data storage	–	–
Reference	Unity Pro	–	140CPU31110
	Concept/ProWORX	140CPU11302	140CPU11303
			–

(1) The maximum values for the number of discrete or analog I/O are not cumulative

(2) The numbers of communication modules are not cumulative, 2 or 6 in local rack, depending on model

(3) Processor compatible with Unity Pro software after updating its firmware (via OS-Loader included in Unity Pro)

Power supply modules ⁽⁴⁾



Type of power supply module for			Quantum				
Input voltage			24 VDC	48...60 VDC	100...150 VDC	120...230 VAC	115/230 VAC
Output current			8 A/3 A (4)	8 A	8 A/3 A (3)	8 A/3 A (4)	11 A
Reference	Type	Standalone (5)	140CPS21100	–	140CPS51100	140CPS11100	–
		Summable	140CPS21400	140CPS41400	–	–	140CPS11420
		Redundant	140CPS22400	140CPS42400	140CPS52400	140CPS12400	140CPS12420

(4) Process power supplies see pages 36 and 37

(5) The output current for the standalone power supply modules is 3 A

PCMCIA memory extension

Type of PCMCIA card for Unity processors 140CPU65/67		Application		Additional data
Technology		SRAM	Flash EPROM	SRAM
Memory size	512 Kb/512 Kb (6)	–	TSXMCPC512K	–
	1 Mb (7)	TSXMRPC001M	–	–
	2 Mb (7)	TSXMRPC002M	–	–
	2 Mb/1 Mb (6)	–	TSXMCPC002M	–
	3 Mb (7)	TSXMRPC003M	–	–
	4 Mb	–	–	TSXMRPF004M
	7 Mb (7)	TSXMRPC007M	–	–
	8 Mb	–	–	TSXMRPF008M

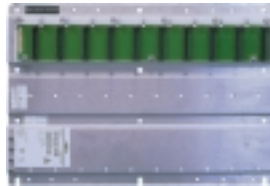
(6) The 1st value corresponds to the size of the application area, the second to the size of the additional data area for storing data (recipes, production data, etc)

(7) By configuration the user can reserve part of the memory space for data storage (recipes, production data, etc)



Simple and medium complexity applications		Complex applications		Hot Standby redundant applications	
Unlimited (27 slots max.)		Unlimited (26 slots max.)			
31744 inputs (RIO)/8000 inputs (DIO) and 31744 outputs (RIO)/8000 outputs (DIO)		1984 inputs (RIO)/500 inputs (DIO) and 1984 outputs (RIO)/500 outputs (DIO)			
Unlimited (27 slots max.)		Intrinsically safe I/O, counter, motion control, high-speed interrupt inputs, time-stamp, serial link, AS-Interface sensor/actuator bus			
2 RS 232		1 RS 232/485			
1 integrated, 6 in local rack		1 integrated, 6 in local rack		6 in local rack	
6 in local rack		Profibus DP: 6 in local rack			
INTERBUS/Profibus DP: 6 in local rack					
2 Mb		4 Mb		2 Mb	
-		-		7 Mb	
-		-		8 Mb	
140CPU43412U		140CPU53414U		140CPU65150	
140CPU43412A (3)		140CPU53414A (3)		140CPU65160	
				140CPU67160	
				-	

Racks



Type	Racks	Rack extension module (1)
Reference	-	140XBE10000
Numbers of slots	2 slots	140XBP00200
	3 slots	140XBP00300
	4 slots	140XBP00400
	6 slots	140XBP00600
	10 slots	140XBP01000
	16 slots	140XBP01600

(1) Local extension module, to be placed in main rack and secondary rack

Connection accessories (2)

Type	Cable for extension racks (main and secondary)
Reference	L = 1 m
	L = 2 m
	L = 3 m

(2) Other accessories: See the "Modicon Quantum automation platform" catalog



Type of module	Discrete inputs					
Connection	By screw terminals 140XTS00200 (to be ordered separately)					
Number of isolated channels	16	4 groups of 8	3 groups of 8	2 groups of 8	6 groups of 16	8 groups of 2
Input voltage	5 VDC TTL (negative logic)	–	140DDI15310	–	–	–
	24 VDC	–	140DDI35300(1)	–	–	140DDI36400
	10...60 VDC	–	140DDI85300	–	–	–
	20...30 VDC	–	140DSI35300(1)	–	–	–
	125 VDC	–	–	140DDI67300	–	–
	24 VAC	140DAI34000	140DAI35300	–	–	–
	48 VAC	140DAI44000	140DAI45300	–	–	–
	115 VAC	140DAI54000	140DAI55300	–	140DAI54300	–
	230 VAC	140DAI74000	140DAI75300	–	–	–

(1) For negative logic, replace 00 at the end of the reference with 10, for example 140DDI35300 becomes 140DDI35310.



Type of module	Discrete outputs					
	Solid state					
Connection	By screw terminals 140XTS00200 (to be ordered separately)					
Number of protected channels	16	4 groups of 8	4 groups of 4	2 groups of 8	6 groups of 16	2 groups of 6
Output voltage/current	5 VDC TTL/0.075 A (2)	–	140DDO15310	–	–	–
	24 VDC/0.5 A	–	140DDO35301(1)	–	–	–
	10...30 VDC/0.5 A (3)	–	140DVO85300	–	–	–
	19.2...30 VDC/0.5 A	–	–	–	140DDO36400	–
	10...60 VDC/2 A	–	–	140DDO84300	–	–
	24...125 VDC/0.75 A	–	–	–	–	140DDO88500
	24...48 VAC/4 A	–	–	140DAO84220	–	–
	24...115 VAC/4 A	140DAO84010	–	–	–	–
	24...230 VAC/ 4-3 A	140DAO84000	140DAO85300	–	–	–
	100...230 VAC/4-3 A	–	–	140DAO84210	–	–

(1) For negative logic, replace 01 at the end of the reference with 10, for example 140DDO35301 becomes 140DDO35310.

(2) Negative logic

(3) Controlled outputs



Type of module	Discrete I/O			Discrete outputs	
	Solid state			Relay	
Connection	By screw terminals 140XTS00200 (to be ordered separately)			–	
Number of I/O	2 groups of 8/2 groups of 4		1 group of 4/ 4 isolated	–/16 NO	–/8 NO/NC
Input voltage	24 VDC	125 VAC	125 VDC	–	–
Output voltage/current	30 VDC/15 A	125 VAC/4 A	125 VDC/4 A	150 VDC or 250 VAC/2 A	150 VDC or 250 VAC/5 A
Reference	140DDM39000	140DAM59000	140DDM69000	140DRA84000	140DRC83000

Analog I/O modules



Type of module	Analog inputs				
Connection	By screw terminals 140XTS00200 (to be ordered separately)				
Number of channels	8	16	8		
Input signal	4...20 mA 1...5 V	0...25/20 mA 4...20 mA	(1)	Thermal probe Pt, Ni	Thermocouple (2)
Resolution	12 bits	0...25000 points	16 bits	12 bits + sign	16 bits
Reference	140ACI03000	140ACI04000	140AVI03000	140ARI03010	140ATI03000

(1) 0...25 mA, ± 20 mA, 4...20 mA, 0...10 V, ± 10 V, 0...5 V, ± 5 V, 1...5 V.

(2) Type B, E, J, K, R, S, T, mV



Type of module	Analog output		
Connection	By screw terminals 140XTS00200 (to be ordered separately)		
Number of channels	4	8	4
Input signal	4...20 mA	0...25/20 mA 4...20 mA	0...10 V, ± 10 V 0...5 V, ± 5 V
Resolution	12 bits	0...25000 points	12 bits
Reference	140ACO02000	140ACO13000	140AVO02000



Type of module	Analog I/O
Connection	By screw terminals 140XTS00200 (to be ordered separately)
Number of inputs	4
Number of outputs	2
Input signal	0...20 mA, ± 20 mA, 4...20 mA, 0...10 V, ± 10 V, 0...5 V, ± 5 V, 1...5 V.
Resolution	Inputs 16 bits, outputs 12 bits
Reference	140AMM09000

Automation _____ Modicon Quantum platform

Intrinsically safe I/O modules



Type of module	I/O		Analog		
	Discrete				
Connection	By screw terminal 140XTS33200 (to be ordered separately)				
Number of inputs	8	–	8	–	
Number of outputs	–	8	–	8	
Input signal	–	–	Thermal probe	0...25/20 mA	
			Thermocouple (1)	4...25 mA	
Resolution	–	–	12 bits + sign	0...25000 points	15 bits
Reference	140DII33000	140DIO33000	140AII33000	140AII33010	140AIO33000

(1) Type J, K, E, T, S, R, B, mV

Counter and special purpose modules



Type of module	High-speed counter		High-speed inputs with interrupt	Time-stamp system	
Type of inputs for	Incremental encoders		Discrete 24 VDC (2)	DCF 77	Discrete
				24 VDC (3)	24...125 VDC
Counting frequency	100 kHz	500 kHz	–	–	
Number of channels	5	2	16	1	32
Reference	140EHC10500	140EHC20200	140HLI34000	140DCF07700	140ERT85410

(2) 3 operating modes: Interrupt, latch, high-speed inputs, on rising or falling edge.

(3) For GPS or DCF time receiver

Motion control modules



Type of module	Servomotor	
	Single axis	Multi-axis
Control outputs	RS 422 incremental encoder	SERCOS digital link
Compatible with the ranges	Lexium	Lexium
Functions	Master/slave position capture Synchronization of master/slave axes Torque control	Point synchronization, length measurement, count probe, motion on probe input, capture reference, Rotary blade
Number of axes	1 real, 1 remote	With MMFStart programming kit (4)
Processor	–	66 MHz
		133 MHz
Reference	140MSB10100	140MMS42501
		140MMS53502

(4) 8 real axes, 4 imaginary axes, 4 remote axes, 4 coordinate sets, 4 follower sets, cam profiles

Communication modules



Type of module		Ethernet TCP/IP					
Speed		10/100 Mbps					
Standard services		TCP/IP (Modbus)					
Transparent Ready	Global Data	Yes	–	–	Yes	Yes	–
	I/O Scanning	Yes	Yes	–	Yes	Yes	–
	FDR server	Yes	–	–	Yes	Yes	–
	SNMP protocol	Yes	Yes	Yes	Yes	Yes	Yes
Web server	Standard services	Yes	Yes	Yes	Yes	Yes	Yes
	FactoryCast services	–	–	Yes	–	Yes	Yes
	FactoryCast HMI services	–	–	–	–	–	Yes
Reference		140CPU651 (1)	140NOE77100	140NOE77110	140NOE77101	140NOE77111	140NWM10000

(1) References: see pages 18 and 19, Quantum processors with integrated Ethernet TCP/IP



Type of module		Sensor bus, machine bus and fieldbus	
		Modbus Plus	AS-Interface
Name and description		Integrated link	In-rack
Speed		1 Mbps	167 Kbps
Reference		140CPU (2)	140EAI92100

(2) References: see pages 18 and 19, Quantum processors with integrated Modbus Plus



Type of module		Serial link	
		Modbus	ASCII
Name and description		Integrated link	In-rack
Speed		19.2 Kbps	19.2 Kbps
Reference		140CPU (3) (4)	140ESI06210

(3) References: see pages 18 and 19, Quantum processors with integrated Modbus

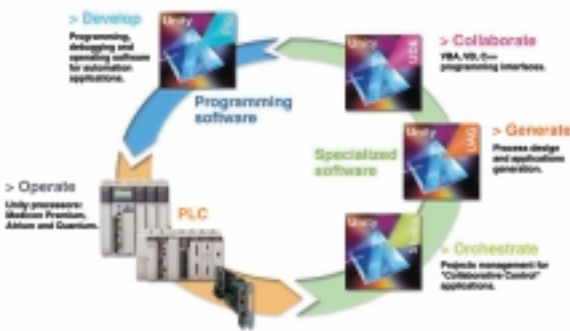
(4) RS 232/RS 485 on **140CPU651xx** and **140CPU67160** processors and RS 232 on **140CPU31110**, **140CPU43412A**, **140CPU53414A** processors.



Type of software	Unity Pro Large (L)	Unity Pro X Large (XL)
Compatibility	Premium, Atrium, Quantum	
Type of license	Single (1 station)	
Reference	UNYSPULFUCD10	UNYSPUEFUCD10

Other characteristics: See the "Premium and Quantum automation platform" catalog

Unity Pro programming software to increase productivity



Unity Pro is the common programming, debugging and operating software for the Premium, Atrium and Quantum ranges of PLCs. It is based on the standards set by PL7 and Concept software and provides a comprehensive set of new functions for greater productivity and openness to other software.

The five IEC61131-3 languages are supported as standard in Unity Pro with all the debugging functions, on the simulator or directly online with the PLC.

Thanks to independent symbolic memory variables, structured data and user function blocks, the application objects directly reflect the application-specific components of the automated process.

Using graphic libraries, the Unity Pro operator screens are configured in the application by the user. Operator access is simple and direct.

Debugging and maintenance are made simple by animated graphic objects.

For diagnostics, a display window provides a clear display in chronological order (time-stamped at source) of all system and application faults. The navigation function for finding the causes of faults traces missing conditions back to the source.

The standard XML Web format for exchanging data has been adopted as the source format for Unity applications. All or part of the application can be exchanged with other software in the project simply using the Import/Export function.

The converters integrated in Unity Pro automatically convert IEC 61131-3 PL7 and Concept standards and applications.

Specialist tools



Unity Studio has been designed to manage multi-application projects. Unity Studio is a genuine software suite incorporating Unity Pro, Power Suite for drives and motor starters, XBT-L1000 for HMI and OFS for real-time communication. It provides every application expert with an engineering platform that is open to his own development methodology. Based on the Microsoft Visio editor for describing the application, Unity Studio can be used in particular for synchronizing applications on Ethernet.

For batch/process applications, **Unity Application Generator (UAG)** is the design and generation tool for PLC and HMI integration. Based on a re-usable object approach (PID, motor, valve, etc) in accordance with standard ISA S88, UAG generates the PLC code and the elements required for the HMI system. Single entry of data ensures speed and consistency between the two systems.

Unity Developer's Edition (UDE) gives VBA, VB or C++ developers access to all the Unity Pro and Unity Studio object servers. In particular it can be used for developing made-to-measure solutions such as the creation of interfaces with an electrical CAD system, a variables generator or PLC programs.

Commercial references and characteristics: See the "Modicon Premium and Quantum automation platform" catalog

Programming software

For Modicon TSX Micro, Premium and Atrium



PL7 is the common programming, debugging and operating software for the TSX Micro and Premium ranges of PLCs as well as Atrium coprocessors (see pages 4, 10 and 18).

PL7 offers 4 IEC languages: Instruction List (IL), Ladder Diagram (LD), Structured Text (ST) and Sequential Function Chart (SFC). You can use the most suitable language for each function in your application, making use of the multi-tasking structure of the processors.

For using application-specific functions, PL7 directly integrates the application-specific screens required for configuration and adjustment as well as supervisory and diagnostics activities.

Type of software		PL7 Micro for TSX Micro platform			
Type of license version 4.4		Single (1 station)	Single with SyCon V2.8	Group (3 stations)	Open Team (10 stations)
Reference	Software package (1)	TLXCDPL7MPPU44M	TLXCDPL7MPPC44M	TLXCD3PL7MPPU44M	TLXOTPL7MP44M
	Update (2)	TLXRCDDL7MP44M	TLXRCDDL7MPC44M	TLXRCDD3PL7MP44M	–
Type of license version 4.4		PL7 Junior for TSX Micro/Premium and Atrium coprocessor platforms			
Type of license version 4.4		Single (1 station)	Group (3 stations)		
Reference	Software package (1)	TLXCDPL7JPU44M	TLXCD3PL7JPU44M		
	Update (2)	TLXRCDDL7JP44M	TLXRCDD3PL7JP44M		
	Upgrade (3)	TLXUCDDL7JP44M	TLXUCDD3PL7JP44M		
Type of license version 4.4		PL7 Pro for TSX Micro/Premium and Atrium coprocessor platforms			
Type of license version 4.4		Single (1 station)	Group (3 stations)	Open Team (10 stations)	Open Site
Reference	Software package (1)	TLXCDPL7PPU44M	TLXCD3PL7PPU44M	TLXOTPL7PP44M	TLXOSPL7PP44M
	Update (2)	TLXRCDDL7PP44M	TLXRCDD3PL7PP44M	–	–
	Upgrade (3)	TLXUCDDL7PP44M	TLXUCDD3PL7PP44M	–	–

(1) PU at the end of the reference: software package supplied with cable for USB port on PC, replace with P for cable for RS 232C port on PC.

(2) From the previous software version. (3) From lower level, earlier version software.

For Modicon Quantum/Momentum

Concept is the powerful IEC programming software for the Momentum and Quantum range of PLCs. It provides advanced Microsoft Windows based tools that deliver a multi-language development environment for control system programming.

Uses familiar, standardized editors, bundled in a single application to create and integrate PLC control, communication and diagnostic logic.

Five IEC editors give users the freedom to choose the programming language that fits their application requirements: Function Block Diagram (FBD), Ladder Diagram (LD), Sequential Function Chart (SFC), Structured Text (ST) and Instruction List (IL).



Type of software		Concept for Quantum/Momentum platforms			
Type of license version 2.6		Single (1 station)	Group (3 stations)	10 users (10 stations)	Site
Software references	Concept S	372SPU47101V26	–	–	–
	Concept M	372SPU47201V26	–	–	–
	Concept XL	372SPU47401V26	372SPU47411V26	372SPU47421V26	372SPU47431V26
Update references	Concept S (3)	372ESS47101	–	–	–
	Concept M (3)	372ESS47201	–	–	–
	Concept XL (3)	372ESS47401	372ESS47403	372ESS47410	372ESS47400

(3) From an earlier software version.

ProWORX 32 is the flexible, easy-to-use cross-platform LL984-programming software for Modicon range PLCs. It gives you the power to program your Modicon controllers online or offline, manage your I/O subsystems, and analyze your plant's activity in real-time, all in a familiar Windows environment. ProWORX 32 provides client/server capabilities to organize user-groups and -rights, store projects at a central location and realize office-plant floor bridging.

The project emulator provides the ability to test projects prior to running them in the PLC run-time environment to ensure your system will run at peak efficiency.



Type of software		ProWORX for Quantum/Momentum platforms			
Type of license version 1.1		Single (1 station)	Group (3 stations)	Multi-user (10 stations)	Site
Software references	ProWORX 32 Server	372SPU78001PSEV	–	–	–
	ProWORX 32 Suite	372SPU78001PSSV	–	–	–
	ProWORX 32 Client, Full Dev.	372SPU78001PDEV	372SPU78001PSTH	372SPU78001PSTE	372SPU78001SITE
	ProWORX 32 Online	372SPU78101PONL	–	–	–
	ProWORX 32 Lite	372SPU71001PLDV	372SPU71001PLTH	372SPU71001PLTE	–
Upgrade to ProWORX 32 references (4)		372SPU78401LPUP	372SPU78401LPSTH	372SPU78401LPSTE	–

(4) Only possible for customers, who are "up-to-date" with CSP (continuing support program)

Other software references: See the "Modicon TSX Micro Premium or Quantum automation platform" catalogs

Automation Modicon Momentum distributed I/O Discrete I/O modules



Type of module	Multibus discrete inputs			
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)			
Input voltage	24 VDC		120 VAC	230 VAC
Number of channels	16 (1 common point)	32 (2 common points)	16 (2 common points)	
Reference	170ADI34000	170ADI35000	170ADI54050	170ADI74050



Type of module	Multibus discrete outputs					
	Solid state			Triac		
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)					
Output voltage	24 VDC			120 VAC		230 VAC
Number of protected channels	16 (1 common pt)	32 (2 common pts)	8 (2 common pts)	16 (2 common pts)	8 (2 common pts)	16 (2 common pts)
Output current	Per channel	0.5 A	0.5 A	2 A	0.5 A	0.5 A
	Per group of channels	4 A	8 A	4 A	4 A	4 A
	Per module	8 A	16 A	8 A	8 A	8 A
Reference	170ADO34000	170ADO35000	170ADO53050	170ADO54050	170ADO73050	170ADO74050



Type of module	Multibus discrete I/O						
	Solid state				Relay	Triac	
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)						
Number of channels	Inputs	16 (1 common pt)		16 (4 com. pts.)	16 (1 com. pt.)	10 (1 common point)	
	Input logic	Positive (1)	Negative	Positive			–
	Outputs	16 (2 common points)		8 (2 common pts)	12	8 (2 common pts)	
Input voltage	24 VDC						
Output voltage	24 VDC				24...230 VAC/20...115 VDC		120 VAC
Output current	Per output	0.5 A		2 A	0.5 A	2 A	
	Per group of channels	4 A		4 A	4/2 A	8 A	
	Per module	8 A		8 A	6 A	16 A	
Reference	170ADM35010	170ADM35015	170ADM37010	170ADM39010	170ADM39030	170ARM37030	170ADM69051

(1) For a version with high-speed positive logic, replace the 0 at the end of the reference with 1. E.g. 170ADM35010 becomes 170ADM35011

Connection accessories: See the "Modicon Momentum automation platform" catalog

Other versions: See the "Modicon Quantum automation platform" catalog

Analog I/O modules



Type of module	Multibus analog inputs		
Connection	By screw terminals 170XTS00100 or spring terminals 170XTS00200 (to be ordered separately)		
Number of channels	8 isolated	16 with common point	4 isolated
Input signal	$\pm 5\text{ V}$, $\pm 10\text{ V}$, $\pm 20\text{ mA}$, 1...5 V, 4...20 mA	$\pm 5\text{ V}$, $\pm 10\text{ V}$, 4...20 mA	Multi-range $\pm 25\text{ mV}$, $\pm 10\text{ mV}$ (1)
Resolution	14 bits + sign, 15 bits unipolar	12 bits + sign	15 bits + sign
Reference	170AAI03000	170AAI14000	170AAI52040

(1) Temperature probe: Pt 100, Pt 1000, Ni 100, Ni 1000, Thermocouple: B, E, J, K, N, R, S, T.



Type of module	Multibus analog outputs		Analog I/O and multibus discrete I/O		
Connection	By screw terminals 140XTS00200 (to be ordered separately)				
Number of channels	Inputs	–	4 differential + 4 discrete	6 with com pt + 8 discrete (24 VDC)	
	Outputs	4	2 + 2 discrete (24VDC)	4 with com pt + 8 discrete (24 VDC)	
Input signal	$\pm 10\text{ V}$, 0...20 mA	$\pm 10\text{ V}$, 4...20 mA	$\pm 5\text{ V}$, $\pm 10\text{ V}$, $\pm 20\text{ mA}$, 1...5 V, 4...20 mA	0...10 V	$\pm 10\text{ V}$
Output signal	–		$\pm 10\text{ V}$, 4...20 mA	0...10 V	$\pm 10\text{ V}$
Resolution	12 bits + sign		12...14 bits dep. on signal	14 bits	14 bits
Reference	170AAO12000	170AAO92100	170AMM09000	170ANR12090	170ANR12091

Application-specific I/O modules



Type of module	High-speed counter	Discrete I/O with Modbus port
Type of inputs for	Incremental or absolute encoders	RS 485 Modbus port
Operating voltage	24 VDC	120 VAC
Counting frequency	200 kHz	–
Number of channels	2 independent	–
Number of discrete I/O	2 x 3 inputs/2 x 2 outputs	6 inputs/3 outputs
Reference	170AEC92000	170ADM54080

Automation _____ Modicon Momentum distributed I/O Communication modules



Type of module	Ethernet TCP/IP		Sensor bus, machine bus and fieldbus		
	Fipio	INTERBUS (1)	Profibus DP		
Speed	10 Mbps	10/100 Mbps	1 Mbps	0.5 Mbps	9.6 K...12 Mbps
Manager PLC	-		Premium	-	-
Redundancy	No		No	No	No
Standard services	Modbus TCP/IP		-	-	-
Reference	170ENT11002	170ENT11001	170FNT11001	170INT11000 (1)	170DNT11000

(1) Generation 4, twisted pair medium, with optical fiber reference: **170INT12000**



Type of module	Other networks		DeviceNet
	Modbus Plus	Quantum	
Speed	1 Mbps		0.5 Mbps
Manager PLC	Premium or Quantum	Quantum	-
Redundancy	No	Yes	No
Standard services	-		-
Reference	170PNT11020	70PNT16020	170LNT71000

Optional modules



Type of module	Modbus Plus		Asynchronous serial link
Communication ports	1 Modbus Plus	2 redundant Modbus Plus	1 RS 232/RS 485 Modbus
Real-time clock	Integrated, ± 13 sec/day accuracy		
Connection	By 9-way SUB-D connector		
Reference	172PNN21022	172PNN26022	172JNN21032

Connection accessories

Type	RS 232C communication cable		
Length	1 m	3 m	6 m
Reference	110XCA28201	110XCA28202	110XCA28203

Other connection accessories: See the "Modicon Momentum automation platform" catalog

Other versions: See the "Modicon Quantum automation platform" catalog

Processors



Type of processor		M1				
Number of I/O	Discrete	2048 I/O		2048 I/2048 Q	8192 I/O	
	Registers	2048 words		4096 words	26048 words	
Integrated communication ports	Modbus	1 RS 232C	1 RS 232C + 1 RS 485		1 RS 232C	1 RS 232C + 1 RS 485
	Ethernet TCP/IP	–				
	I/O bus (1)	–			1 I/O port	–
Transparent Ready	Embedded Web server	–				
Memory capacity	RAM	64 Kb		256 Kb	512 Kb	
	Flash	256 Kb		256 Kb	512 Kb	
	User, 984 LL language (2)	2.4 K		12 K	18 K	
	User, IEC language (3)	–		160 K	240 K	
	Data	2 K		4 K	24 K	
Cycle time		1 ms/K	0.63 ms/K	1 ms/K	0.63 ms/K	1 ms/K
Reference		171CCS70000	171CCS70010	171CCS78000	171CCS76000	171CCC78010

(1) I/O bus derived from INTERBUS bus.

(2) ProWORX 32 or Concept programming software.

(3) Concept programming software.



Type of processor		M1	M1E			
Number of I/O	Discrete	8192 I/O				
	Registers	26048 words				
Integrated communication ports	Modbus	1 RS 232C	1 RS 485	–		
	Ethernet TCP/IP	–	1 integrated Ethernet port			
	I/O bus (1)	1 I/O port	–	1 I/O port		
Transparent Ready	Embedded Web server	–	Standard services			
Memory capacity	RAM	512 Kb	544 Kb			
	Flash	512 Kb	1 Mb	512 Kb	1 Mb	
	User, 984 LL language (2)	18 K				
	User, IEC language (3)	240 K	–	200 K	–	200 K
	Data	24 K				
Cycle time		1 ms/K	0.3 ms/K			
Reference		171CCC76010	171CCC98020	171CCC98030	171CCC96020	171CCC96030

Power supply module ⁽⁴⁾



Type of power supply module for	Momentum processors
Input voltage	120 or 230 VAC (selected by jumper)
Output voltage	24 VDC
Output current	0.7 A
Reference	170CPS11100

(4) Process power supplies see pages 36 and 37

Automation Advantys STB distributed I/O Communication modules



Type of module		Ethernet TCP/IP
Binary speed		10 Mbps
Protocol		Modbus TCP/IP
Transparent Ready	Embedded Web server	Standard services
	Ethernet services	SNMP agent, FDR client (replacement of faulty equipment), BOOTP (allocation of IP addresses by a server)
Max. number of addressable I/O modules		32 per island
Reference		STBNIP2212



▲ Launch 3rd quarter 2004

Type of module	Machine bus and fieldbus				
	CANopen	Fipio	INTERBUS	Profibus DP	
Max. number of addressable I/O modules	32 per island	32 per island	32 per island	32 per island	32 per island
Binary speed	20 K...1 Mbps	1 Mbps	0.5 Mbps	9.6 K...12 Mbps	
Reference	STBNCO2212	STBNCO1113 ▲	STBNFP2212	STBNIB2212	STBNDP2212



Type of module	Other networks	
	Modbus Plus	DeviceNet
Max. number of addressable I/O modules	32 per island	32 per island
Speed	1 Mbps	125, 250 or 500 Kbps
Reference	STBNMP2212	STBNDN2212

Connection accessories

Type of accessory	Removable terminals for 24 VDC power supply		DeviceNet
	Use	All modules	
Reference	Screw terminals	STBXTS1120 (1)	STBXTS1111
	Spring terminals	STBXTS2120 (1)	STBXTS2111

(1) To be ordered separately, sold in lots of 10.

Power distribution modules ⁽¹⁾



Type of module		PDM	
Connection by removable terminals		Screw STBXTS1130 (2) Spring STBXTS2130 (2)	
Supply voltage		24 VDC	115...230 VAC
Maximum current	Inputs	4 A at 30°C, 2.5 A at 60°C	5 A at 30°C, 2.5 A at 60°C
	Outputs	8 A at 30°C, 5 A at 60°C	10 A at 30°C, 2.5 A at 60°C
Sensor/actuator bus voltage range		19.2...30 VDC	85...265 VAC
Reference	Module	STBPDT3100	STBPDT2100
	Base	STBXBA2200	STBXBA2200

(1) Process power supplies see pages 36 and 37

(2) To be ordered separately, sold in lots of 10.

Bus extension modules



▲ Launch 2nd quarter 2004

Type of module		“EOS”	“BOS”	Connection of CANopen devices
Connection by removable terminals		–	Screw STBXTS1120 (2) Spring STBXTS2120 (2)	Screw STBXTS1110 (3) Spring STBXTS2110 (3)
Use		For placing at end of segment (except for the last)	For placing at head of each extension segment	For placing at end of last segment
Reference	Module	STBXBE1000	STBXBE1200	STBXBE2100 ▲
	Base	STBXBA2400	STBXBA2300	STBXBA2000

(2) To be ordered separately, sold in lots of 10.

(3) To be ordered separately, sold in lots of 20.

Software and memory card



Type	Advantys configuration software	Removable memory card
Use	Single station	–
Memory size	–	32 Kb
Reference	STBSPU1000	STBXMP4440

Connection accessories

Type of accessory	Island bus extension cable				
Length	0.3 m	1 m	4.5 m	10 m	14 m
Reference	STBXCA1001	STBXCA1002	STBXCA1003	STBXCA1004	STBXCA1006

Automation _____ Advantys STB distributed I/O

Discrete I/O modules



Type of module		Discrete inputs				
Connection by removable terminals		Screw STBXTS1100 (1) Spring STBXTS2100 (1)			Screw STBXTS1110 (1) Spring STBXTS2110 (1)	
Number of channels		2	4	6	2	
Input voltage		24 VDC			115 VAC	230 VAC
Reference	Module	STBDDI3230	STBDDI3420	STBDDI3610	STBD AI5230	STBD AI7220
	Base	STBXBA1000			STBXBA2000	

(1) To be ordered separately, sold in lots of 20.



Type of module		Discrete solid state outputs			
Connection by removable terminals		Screw STBXTS1100 (1) Spring STBXTS2100 (1)			
Number of channels		2	4	6	
Output voltage		24 VDC	24 VDC	24 VDC	
Output current		0.5 A	2 A	0.5 A	0.5 A
Reference	Module	STBDDO3200	STBDDO3230	STBDDO3410	STBDDO3600
	Base	STBXBA1000			

(1) To be ordered separately, sold in lots of 20.



Type of module		Discrete outputs		
		Triac	Relay	
Connection by removable terminals		Screw STBXTS1110 (1) Spring STBXTS2110 (1)		
Number of channels		2	2 NC/NO	2 NC+NO
Output voltage		115...230 VAC	24 VDC or 115...230 VAC	
Output current		2 A at 30°C, 1 A at 60°C	2 A per contact	7 A per contact
Reference	Module	STBD AO8210	STBD RC3210	STBD RA3290
	Base	STBXBA2000		STBXBA3000

(1) To be ordered separately, sold in lots of 20.

Analog I/O modules



Type of module		Analog inputs		
Connection by removable terminals		Screw STBXTS1100 (1) Spring STBXTS2100 (1)		
Number of channels		2		
Input signal		- 10...+10 V	0...20 mA	Multi-range (2)
Resolution		11 bits + sign	12 bits	15 bits + sign
Reference	Module	STBAVI1270	STBACI1230	STBART0200
	Base	STBXBA1000		

(1) To be ordered separately, sold in lots of 20.

(2) Thermocouple B, E, J, K, R, S, T. Thermal probe Pt 100, Pt 1000, Ni 100, Ni 1000, cu 10, ± 80 mV.



Type of module		Analog outputs	
Connection by removable terminals		Screw STBXTS1100 (1) Spring STBXTS2100 (1)	
Number of channels		2	
Output signal		- 0...+10 V, - 10...+10 V	0...20 mA
Resolution		11 bits + sign or 12 bits	12 bits
Reference	Module	STBAVO1250	STBACO1210
	Base	STBXBA1000	

(1) To be ordered separately, sold in lots of 20.

Application-specific modules



Type of module		For motor starters		Counter (1)
		Tego Power	TeSys model U	
Connection by connector		1 HE10	4 RJ45	Spring STBXTS2150 (2)
Number of inputs		16	12	4
Number of outputs		8	8	2
Input voltage		24 VDC		24 VDC
Output voltage/current		24 VDC/0.1 A per channel		24 VDC/0.5 A
Number of channels		-		1 counter channel 40 kHz
Reference	Module	STBEPI1145	STBEPI2145	STBEHC3020
	Base	STBXBA2000	STBXBA3000	
	Connection cables	STBXCA3002 (L= 1 m)	490NTW00002 (L= 2 m)	-
		STBXCA3003 (L= 2 m)	490NTW00005 (L= 5 m)	-

(1) For 2/3-wire PNP/NPN 24 VDC sensors, 24 VDC incremental encoders, mechanical contacts

(2) To be ordered separately

Connection accessories: See the "Advantys STB distributed I/O" catalog



Type of MHDA drive		Digital for controlling brushless motors						
		Lexium 17D					Lexium 17D HP	
Power supply	Voltage	208...480 VAC 3-phase						
	Current	1.8 A rms	3.6 A rms	7.2 A rms	12 A rms	24 A rms	48 A rms	84 A rms
Output current	Continuous	1.5 A rms	3 A rms	6 A rms	10 A rms	20 A rms	40 A rms	70 A rms
	Discontinuous (5 s)	3 A rms	6 A rms	10 A rms	20 A rms	40 A rms	80 A rms	140 A rms
Anti-start		Integrated (1)					Integrated	
Braking resistor		Integrated					Not integrated	
EMC filter		Integrated					Not integrated	
Reference	Analog control mode	MHDA 1004A00	MHDA 1008A00	MHDA 1017A00	MHDA 1028A00	MHDA 1056A00	MHDA 1112A00	MHDA 1198A00
	Optional card for SERCOS mode (2)	AM0SER001V000						
	Communication cards (2)	Fipio bus: AM0FIP001V000, Modbus Plus network: AM0MBP001V000, Profibus DP bus: AM0PBS001V000,						
Type of associated brushless motor (3)		Continuous torque at standstill/peak torque at standstill						
Lexium SER (IP41 or IP56)	Lexium BPH (IP65 or IP67)							
	BPH0552S 8000 rpm	0.4/1.1 Nm						
	BPH0751N 6000 rpm	0.9/1.9 Nm	1.3/3.4 Nm					
SER39A4L7S 6000 rpm		1.1/2.5 Nm	1.1/4 Nm					
SER39B4L3S 6000 rpm			2.2/4.4 Nm	2.2/8 Nm				
	BPH0752N 6000 rpm	1.3/2.5 Nm	2.3/4.8 Nm					
SER39C4L3S 6000 rpm			2.9/4.7 Nm	2.9/9.4 Nm				
	BPH0952N 6000 rpm		3.7/7.2 Nm	4.3/13.4 Nm				
SER3BA4L3S 6000 rpm				4.6/9.2 Nm	4.6/15.3 Nm			
SER3BA4L5S 6000 rpm			4.6/8.2 Nm	4.6/15 Nm				
	BPH0953N 6000 rpm			6/13.4 Nm	6/20.3 Nm			
SER3BB4L3S 6000 rpm				6.6/12 Nm	6.6/20 Nm			
SER3BB4L5S 6000 rpm				6.6/15.8 Nm	6.6/25 Nm			
	BPH1152N 6000 rpm			7.4/13.6 Nm	7.4/19.3 Nm			
	BPH1153N 6000 rpm			6.8/13.5 Nm	10.5/19 Nm			
SER3BC4L5S 6000 rpm				10/17 Nm	10/28 Nm			
SER3BC4L7S 3000 rpm			10/16 Nm	10/32 Nm				
	BPH1422N 4000 rpm				11.4/18 Nm	12/30 Nm		
SER3BD4L5D 6000 rpm					13.4/29 Nm			
SER3BD4L7S 3000 rpm				13.4/24 Nm	13.4/38 Nm			
	BPH1433N 4000 rpm				14.5/24 Nm	17/42 Nm		
	BPH1902N 4000 rpm					25/37.5 Nm		
	BPH1903K 4000 rpm					36/57 Nm		
	BPH1904K 4000 rpm					46/76.2 Nm		
	BPH1907K 4000 rpm						75/157 Nm	
	BPH190AK 4000 rpm							90/163 Nm
								100/230 Nm

(1) For drives without integrated anti-start function, replace the **A** in the reference with **N**. Example: **MHDA1004A00** becomes **MHDA1004N00**.

(2) Exclusive use (1 slot only).

(3) Complete references with type of integrated sensor, degree of protection: See the "Lexium motion control" catalog.

Accessories

Type of accessory	External braking resistor				
Use for drives	MDHA1004/1008		MDHA1017/1028/1056	MDHA1112	MDHA1198
Power	250 W	500 W	1500 W	860 W	1600 W
Reference	AM0RFE001V025	AM0RFE001V050	AM0RFE001V150	AM0RFE002V086	AM0RFE002V160
Type of accessory	Input choke (compulsory)				
Use for drives	MDHA1112			MDHA1198	
Characteristics	60 A rms continuous			75 A rms continuous	
Reference	AM0CHK170			AM0CHK212	

Connection accessories and cables: See our "Lexium motion control" catalog.

Twin Line drives

For SER brushless motors



Type of drive		Digital for brushless motors			
		Control integrated in the PLC			
Power supply	Voltage	230 VAC single phase	230...480 VAC 3-phase		
Motor	Power	0.75 kW rms	1.5 kW rms	3 kW rms	8 kW rms
Output current	Continuous	3 A rms	3 A rms	6 A rms	16 A rms
	Discontinuous (5 s)	6 A rms	6 A rms	20 A rms	32 A rms
Degree of protection		IP20			
Reference (1)		TLD13	22F2●●1●1	42F3●●1●1	62F3●●1●1
Type of associated brushless motor (2)	SER364/366/368/36A	12000 rpm			
	SER39A/39B/39C/39D	6000 rpm	6000 rpm		
	SER3BA/3BB/3BC/3BD	6000/4500 rpm	6000/4500 rpm		6000/4500 rpm

(1) Complete the references using the table below

(2) Complete references of brushless motors: See the "Twin Line motion control" catalog



Type of drive		Digital for brushless motors					
		Command via discrete control, fieldbus or integrated programmable motion controller					
Power supply	Voltage	230 VAC single phase		230...480 VAC 3-phase			
Motor	Power	0.75 kW rms		1.5 kW rms	3 kW rms	8 kW rms	
Output current	Continuous	3 A rms		3 A rms	6 A rms	16 A rms	
	Discontinuous (5 s)	6 A rms		6 A rms	20 A rms	32 A rms	
Degree of protection		IP 20	IP 54	IP 20	IP 54	IP 20	
Command via (1)	Discrete control	TLC43	22F21●●●●	25F21●●●●	42F31●●●●	45F31●●●●	62F31●●●●
	Fieldbus	TLC53	22F2●●●●●	25F2●●●●●	42F3●●●●●	45F3●●●●●	62F3●●●●●
Programmable motion controller (1)		TLC63	22F2●●●●●	25F2●●●●●	42F3●●●●●	45F3●●●●●	62F3●●●●●
Type of associated brushless motor (2)	SER364/366/368/36A	12000 rpm					
	SER39A/39B/39C/39D	6000 rpm		6000 rpm	6000 rpm		
	SER3BA/3BB/3BC/3BD	6000/4500 rpm		6000/4500 rpm	6000/4500 rpm	6000/4500 rpm	

(1) Complete the references using the table below

(2) Complete references of brushless motors: See our "Twin Line motion control" catalog

Complete each of the above references		●	●	●	●	●
Slot M1	No module	1				
	RS 422C encoder module	2				
	PULSE-C module	3				
Slot M2	Sincos Hiperface		2			
	Resolver		3			
Slot M3	No module (TLD13)			1		
	No encoder simulation (TLD43/53/63)			1		
	ESIM3-C encoder simulation			2		
Slot M4 communication	No module				1	
	RS 485C (TLC43/53/63), ESIM1-C module (TLD13)				2	
	INTERBUS (TLC43/53/63), ESIM2-C module (TLD13)				3	
	CANopen/DeviceNet (TLC43/53/63), SSI-C module (TLD13)				4	
	Profibus DP (TLC43/53/63)				5	
Integrated parking brake controller	None (TLD43/53/63)					1
	With (TLD43/53/63)					2

Connection accessories: See the "Twin Line motion control" catalog



Type of power supply		Wide range, single phase, compact, switching AUTO resetting of the automatic protection		Modular, single phase, switching AUTO resetting of the automatic protection	
Input voltage		100...240 VAC, 110...220 VDC (compatible)			
Output voltage		24 VDC	24 VDC	12 VDC	24 VDC
Nominal power/current		15 W/0.6 A	30 W/1.2 A	22 W/1.9 A	30 W/1.3 A
Certifications		cULus, TÜV		UL, CSA, TÜV	
Conforming to standards		UL508, IEC/EN 60950		IEC/EN 60950, IEC/EN61131-2/A11	
		EN 50081-2, EN 50082-2		EN 50081-2, IEC 61000-6-2 (EN 50082-2)	
Emission		Conducted and radiated		EN 55011, EN 55022 class A	
		EN 55011, EN 55022 class B			
Dimensions LxDxH		45x95x75 mm		72x70x110 mm	
Reference		ABL7CEM24006	ABL7CEM24012	ABL7RM1202	ABL7RM2401



Type of power supply		Wide range, single phase, universal switching AUTO resetting of the automatic protection				
Input voltage		100...240 VAC, 110...230 VDC (version ABL7RP..)				
Output voltage		24 VDC				
Nominal power/current		48 W/2 A	72 W/3 A	120 W/5 A	240 W/10 A	
Certifications		UL, CSA, TÜV, Ctick				
Conforming to standards		IEC/EN 60950				
		EN 50081-2, IEC 61000-6-2 (EN 50082-2)				
		LF harmonic currents		EN 61000-3-2	–	EN 61000-3-2
Emission		Conducted and radiated				
		EN 55011, EN 55022 class B				
Dimensions LxDxH		27x120x120 mm		54x120x120 mm		135x120x120 mm
Reference		ABL7RE2402	ABL7RE2403	ABL7RE2405	ABL7RP2405(1)	ABL7RE2410
		ABL7RP2410(1)				

(1) AUTO/MANU resetting of the automatic protection



Type of power supply		2-phase, industrial switching AUTO/MANU resetting of the automatic protection	
Input voltage		2 x 380...415 VAC	
Output voltage		24 VDC	
Nominal power/current		120 W/5 A	
Conforming to standards		Safety	
		IEC/EN 60950	
		EMC	
		EN 50081-1, EN 50082-2	
		LF harmonic currents	
		–	
Emission		Conducted and radiated	
		EN 55011, EN 55022 class B	
Dimensions LxDxH		68x130x127 mm	
		68x154x127 mm	
Reference		ABL7REQ24050	
		ABL7REQ24100	

For control circuits



Type of power supply		Wide range, 3-phase, industrial switching AUTO/MANU resetting of the automatic protection			
Input voltage		3 x 400...520 VAC			
Output voltage		24 VDC			
Nominal power/current		120 W/5 A	240 W/10 A	480 W/20 A	960 W/40 A
Certifications		cULus, cULus			
Conforming to standards		IEC/EN 60950			
Safety		EN 50081-1, EN 50082-2			
EMC		EN 50081-1, EN 50082-2			
LF harmonic currents		– EN61000-3-2			
Emission		Conducted and radiated EN 55011, EN 55022 class B			
Dimensions LxDxH		68x171x127 mm	84x240x209 mm	106x275x242 mm	
Reference		ABL7UES24050	ABL7UPS24100	ABL7UPS24200	ABL7UPS24400



Type of power supply		Rectified and filtered												
Input voltage		215/230/245 or 385/400/415 VAC (±10%) single phase					380/400/420 VAC (±10%) 3-phase							
Output voltage		24 VDC												
Certifications		cULus												
Nominal power		24 W	60 W	120 W	240 W	360 W	480 W	240 W	480 W	720 W	960 W			
Nominal current		1 A	2.5 A	5 A	10 A	15 A	20 A	10 A	20 A	30 A	40 A			
Power supply references		Single phase	ABL6RF24.. (1)		01	02	05	10	15	20	–	–	–	–
		3-phase	ABL6RT24.. (1)		–	–	–	–	–	–	10	20	30	40

(1) Complete the reference according to the power and current using the table opposite (example ABL6RF2401)

Transformers



Type of transformer		Safety and isolation									
Input voltage		230/400 VAC (±15%) single phase									
Secondary output		Single or double winding (see references below)									
Certifications		UL									
Nominal power		25 VA	40 VA	63 VA	100 VA	160 VA	250 VA	400 VA	630 VA	1000 VA	
Single winding references		ABL6TS... (1)									
Output voltage		12 V	02J	04J	06J	10J	16J	25J	–	–	–
		24 V	02B	04B	06B	10B	16B	25B	40B	63B	100B
		115 V	02G	04G	06G	10G	16G	25G	40G	63G	100G
		230 V	02U	04U	06U	10U	16U	25U	40U	63U	100U
Double winding references		ABL6TD... (1)									
Output voltage		24/48 V	02B	04B	06B	10B	16B	25B	40B	63B	100B
		115/230 V	02G	04G	06G	10G	16G	25G	40G	63G	100G

(1) Complete the reference according to the power and output voltage using the table opposite (example ABL6TS02J)

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Schneider Electric Industries S.A.S.

Head office

89, bd Franklin Roosevelt
92500 Rueil-Malmaison Cedex
France

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