



SUPPLEMENTAL AGREEMENT NO. 1

Contract Number: SS8180-3/13 (Executed on April 11, 2007)

Contract Title: SCADA Process Control System

**Contractor: Bristol, Inc.
1100 Buckingham Street
Watertown, Connecticut 06795**

In accordance with the above referenced Contract, this supplement, when properly executed, shall acknowledge the transfer of the Contract from Bristol, Inc. to Emerson Process Management Power & Water Solutions, Inc. accordingly, all references to the Contractor in the Contract shall mean Emerson Process Management Power & Water Solutions, Inc.

Additionally, in accordance with the above referenced Contract, this Supplemental Agreement No. 1, when properly executed, becomes a part of the Contract effective upon execution, and sets forth the terms and conditions that are in addition to and/or modify those terms and conditions set forth in the Miami-Dade County Contract No. SS8180-3/13-3 (the "**Agreement**"), by and between Emerson Process Management Power & Water Solutions, Inc. ("**Emerson**") and Miami-Dade County, a political subdivision of the State of Florida, having its principle office at 111 N.W. 1st Street, Miami, FL 33128 ("**County**"), dated April 11, 2007 . In case of any conflict between the Agreement and this Amendment, the terms and conditions of this Amendment shall control.

Whereas the County and Emerson mutually agree to further extend the term of the Agreement by an additional five (5) years; and,

Whereas the County and Emerson hereby revise and replace Exhibit A, "Published List Prices", in its entirety with the attached Exhibit A. Pricing outlined shall provide maintenance and support services for the existing System, in addition to any software licenses, parts, components, or professional services that may be required. All pricing outlined is effective upon execution by the County.

All terms, covenants and conditions of the original Contract and any supplemental agreements issued thereto shall remain in full force and effect, except to the extent herein amended.



IN WITNESS WHEREOF, the parties have executed this Supplemental Agreement to County Contract No. SS8180-3/13 effective upon execution.

**Emerson Process Management
Power & Water Solutions, Inc.**

By: Tom Miller

Name: Tim Miller

Title: V.P. Human Resources

Date: 8/23/13

Attest: [Signature]
Corporate Secretary

Corporate Seal

Miami-Dade County

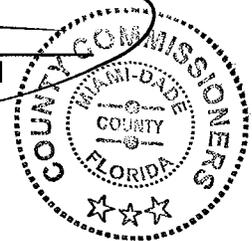
By: [Signature]

Name: Carlos A. Gimenez

Title: Mayor

Date: 9/26/13

Attest: [Signature]
Clerk of the Board



Approved as to form
and legal sufficiency

[Signature]
Assistant County Attorney



Exhibit A

“Published List Prices”

ControlWave PAC Base Unit

ControlWave PAC is a high performance RTU/PLC suitable for demanding in-plant measurement and control applications with a high concentration of local I/O. Hot-swap I/O maximizes system up time during maintenance operations and Hold Last maintains safe operating conditions in the event of a CPU failure. Single and Dual-Redundant internal power supply selection allows the proper level of reliability to meet the requirements of the application.



MODEL & SEG		SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
A			Base Housing		A		
10	CWPAC	None		UL	0	\$0	A
		4 I/O slot panel mount chassis		UL	1	\$398	A
		8 I/O slot 19" rack mount chassis		UL	2	\$661	A
		8 I/O slot panel mount chassis		UL	3	\$661	A
			Internal Power Supply Sequencer Module				
B			(PSSM) (Slot #1)		B		
20	CWPAC	None		UL	0	\$0	A
		24 V input power (CE Approved) Standard PSSM		UL	1	\$928	A
		24 V input power (Not CE Approved) PSSM with single power supply modules		UL	3	\$928	A
		24 V input power (Not CE Approved) PSSM with dual power supply modules		UL	4	\$1,387	A
CC			CPU Module (Slot #2) (Note 1)		CC		
30	CWPAC	None			00	\$0	A
		CPU with 64 MB SDRAM, 32 MB of Flash 1-ENET & 2-RS 232		UL	01	\$4,370	A
		CPU with 64 MB SDRAM, 32 MB of Flash 1-ENET & 3-RS 232 & 1-RS 485 (Note 2)		UL	02	\$5,364	A
		CPU with 64 MB of Flash, 32 MB of Flash 3-ENET & 3-RS 232 & 1-RS 485 (Note 2)		UL	04	\$6,355	A
		CPU with 64 MB of Flash, 32 MB of Flash 3-ENET & 2-RS 232 & 2-RS 485 (Note 2)		UL	05	\$6,754	A
		CWPAC	I/O Expansion Rack CPU				
		Comm CPU, 1-ENET & 2-RS 232		UL	06	\$1,471	A
		Comm CPU, 3-ENET & 3-RS 232 & 1-RS 485		UL	07	\$3,236	A
DD			Embedded Application		DD		
39	CWPAC	None		UL	0	\$0	A
E			CE Approval		E		
40	CWPAC	Without CE approval		UL	0	\$0	A
		CE foil shield and labels		UL/CE	1	\$72	A

Model Number: CW - A - B - CC - DD - E - FF NN - OO - P

Note 1: RS485 Comm port 3 is RJ45. RS 485 ports have 500 V isolation.

Note 2: The I/O Expansion Rack CPU interfaces to the main ControlWave Chassis CPU via Ethernet.

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ControlWave PAC Base Unit (Cont.)

CW

(PC850)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
FF-NN		I/O Slot #3, through #10 (Note 1)		FF-NN		
		Local Termination I/O Modules				
		None - Blank panel provided for empty slot	UL	00	\$0	A
		16 AI, 4-20 mA Internally or Externally powered AI	UL	01	\$1,953	A
		8 AI, 4-20 mA Internally or Externally powered AI	UL	03	\$1,491	A
		6 TC, B, R, S, J, E, K, T, C, N, + 10 mV	UL	05	\$1,516	A
		4 RTD, 2, 3, or 4 wire platinum RTD	UL	06	\$1,395	A
		8 AO, Without read back 4-20 mA	UL	07	\$2,185	A
	CWPAC	32 DI, Selectable Int or Ext powered Dry Contact	UL	09	\$861	A
		16 DI, Selectable Int or Ext powered Dry Contact	UL	10	\$775	A
		32 DO, Open Drain - 500 mA current capability	UL	11	\$922	A
		16 DO Without read back, Open Drain - 500 mA current capability	UL	12	\$795	A
		6 UDI (HighSpeed Counter), With selectable debounce @ (0-10 KHz) for low or High speed counters. Inputs 24 VDC only.	UL	14	\$795	A
		Remote Termination I/O Modules with Remote Terminal Blocks (No Fuses)				
50-120		16 AI, 4-20 mA Internally or Externally powered AI	N/A	20	\$2,135	A
		8 AI, 4-20 mA Internally or Externally powered AI	N/A	22	\$1,582	A
		16 AI (Used with Redundant I/O system), 1-5 V & ext. powered 4-20 (with 250 ohm on input)	N/A	23	\$1,680	A
		6 TC, B, R, S, J, E, K, T, C, N, + 10 mV	N/A	24	\$1,650	A
		4 RTD, 2, 3, or 4 wire platinum RTD	N/A	25	\$1,467	A
		8 AO, without read back 4-20 mA	N/A	26	\$2,366	A
		8 AO, with read back for Redundant I/O 4-20 mA	N/A	34	\$3,286	A
	CWPAC	32 DI, Selectable Int or Ext powered Dry Contact+	N/A	28	\$1,110	A
		32 DO, Open Drain - 500 mA current capability (Note 2)	N/A	30	\$1,171	A
		16 DO without read back, Open Drain - 500 mA current capability (Note 2)	N/A	31	\$919	A
		16 DO with read back for Redundant I/O, Open Drain - 500 mA current capability (Note 2)	N/A	35	\$2,008	A
		6 UDI (HighSpeed Counter), With selectable debounce @ (0-10 KHz) for low or High speed counters. Inputs 24 VDC only.	N/A	33	\$886	A
Note 1: Blank I/O slot Plates are now supplied for unused slots.						
Note 2: 3A maximum per 8 channel Remote Terminal Block.						

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ControlWave PAC Base Unit (Cont.)

CW

(PC850)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
FF-NN		I/O Slot #3 through #10		FF-NN		
		Remote Termination I/O Modules with Remote Terminal Blocks (With Fuses)				
50-120	CWPAC	16 AI, 20 mA Internally or Externally powered AI	N/A	40	\$2,193	A
		8 AI, 4-20 mA Internally or Externally powered AI	N/A	42	\$1,612	A
		16 AI (Used with Redundant I/O system), 1-5 V & ext. powered 4-20 (with 250 ohm on input)	N/A	43	\$1,663	A
		8 AO without read back, 4-20 mA	N/A	44	\$2,425	A
		8 AO with read back, 4-20 mA (Use with Redundant I/O only)	N/A	60	\$3,343	A
		32 DI, Selectable Int or Ext powered Dry Contact	N/A	46	\$1,349	A
		16 DI, Selectable Int or Ext powered Dry Contact	N/A	47	\$1,019	A
		32 DO, Open Drain - 500 mA current capability (Note 1)	N/A	48	\$1,374	A
		16 DO, Open Drain - 500 mA current capability (Note 1)	N/A	49	\$1,021	A
		16 DO with read back, Open Drain - (Use with Redundant I/O only) (Note 1)	N/A	61	\$2,110	A
		32 DI With 120 Vac Remote Terminal Block (NO FUSES)	N/A	70	\$1,655	A
		32 DO With 120 Vac Block, 6Amp RELAY (NO FUSES)	N/A	71	\$1,646	A
				Remote Termination I/O Module spares without Remote Terminal Blocks		
50-120	CWPAC	16 AI, 20 mA Internally or Externally powered AI	N/A	72	\$1,953	A
		8 AI, 4-20 mA Internally or Externally powered AI	N/A	73	\$1,582	A
		16 AI (Used with Redundant I/O system), 1-5 V & ext. powered 4-20 (with 250 ohm on input)	N/A	74	\$2,233	A
		6 TC, B, R, S, J, E, K, T, C, N, + 10mV	N/A	75	\$1,650	A
		4 RTD, 2, 3, or 4, wire platinum RTD	N/A	76	\$1,467	A
		8 AO without read back, 4-20 mA	N/A	77	\$2,185	A
		32 DI, Selectable Int or Ext powered Dry Contact	N/A	78	\$861	A
		16 DI, Selectable Int or Ext powered Dry Contact	N/A	79	\$775	A
		32 DO, Open Drain - 500 mA current capability	N/A	80	\$922	A
		16 DO, Open Drain - 500 mA current capability	N/A	81	\$795	A
		6 UDI (HighSpeed Counter), With selectable debounce @ (0-10 KHz) for low or High speed counters. Inputs 24 VDC only.	N/A	82	\$795	A
		8 AO with read back, 4-20 mA (Use with Redundant I/O only)	N/A	83	\$3,105	A
		16 DO with read back for Redundant I/O, Open Drain - 500 mA current capability	N/A	84	\$1,884	A

Note 1: 3A maximum per 8 channel Remote Terminal Block.

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ControlWave PAC Base Unit (Cont.)

CW

(PC850)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
OO		Remote Terminal Cable Selection		OO		
		Number of ControlWave Micro Remote I/O Modules				
130	CWPAC	None	N/A	00	\$0	A
		1 Remote I/O Module	N/A	01	\$178	A
		2 Remote I/O Module	N/A	02	\$355	A
		3 Remote I/O Module	N/A	03	\$532	A
		4 Remote I/O Module	N/A	04	\$709	A
		5 Remote I/O Module	N/A	05	\$887	A
		6 Remote I/O Module	N/A	06	\$1,065	A
		7 Remote I/O Module	N/A	07	\$1,242	A
		8 Remote I/O Module	N/A	08	\$1,419	A
P		Remote Termination Length Selection		P		
190	CWPAC	None	N/A	0	\$0	A
		18 inch Cable	N/A	1	\$0	A
		39 inch Cable	N/A	2	\$0	A
		6.5 foot Cable	N/A	3	\$0	A
		13 foot Cable	N/A	4	\$0	A

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ControlWave Control & Communication Redundancy

The ControlWave redundant process control and communication system provides dual CPUs, dual power supplies, dual communication paths, and automatic switching between redundant components without any data loss.



It contains two CPUs: a primary CPU and a backup CPU. In the event of a primary CPU failure, the system automatically switches to the backup CPU. All process control and communication functions automatically switch to the backup CPU. A Dual-Redundant internal power supply option is available for even higher system reliability.

CWREDCPU

(PC 850)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
A		Internal Power Supply Sequencer Module		A		
10		PSSM - 24V Single Power Supply module	UL	3	\$1,853	A
		PSSM - 24V Dual Power Supply module	UL	4	\$2,771	A
BC		Dual Redundant CPUs / Comm Port Configurations		BC		
20		CPU / (2) RS 232, (1) Ethernet	UL	1	\$8,739	A
		CPU / (2) RS 232, (2) RS-485, (3) Ethernet	UL	12	\$13,505	A
D		Chassis & Switcher Assembly		D		
30		With Cables, Rack Mount (2) RS-232, (2) RS-485 (Standard)	UL	1	\$2,829	A
		With Cables, Panel Mount (2) RS-232, (2) RS-485 (Standard)	UL	2	\$2,914	A
		With Cables, Rack Mount (2) RS-232, (2) RS-485 Extended Switchover	UL	3	\$2,829	A
		With Cables, Panel Mount (2) RS-232, (2) RS-485 Extended Switchover	UL	4	\$2,914	A
E		Conformal Coating				
40		With conformal coating	UL	1	\$0	A

Model Number: CWREDCPU - A - B C - D - E

Note 1: Redundant unit includes: Chassis, 2-PSSM, 2-CPU, Redundancy Switch Panel and serial communication cables from the CPUs to the Switch Panel. I/O is located in the Expansion Rack.

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ControlWave PAC Redundant I/O System

The ControlWave redundant I/O system provides the highest level of system reliability. The system includes two identical ControlWave PAC units, with identical I/O and an I/O switch panel providing automatic switching between the two ControlWave units to provide redundant control, communication and I/O without any data loss. Analog and Digital outputs with unique read back circuitry ensure the backup system I/O is capable of assuming reliable control in the event of a primary on-line system failure.



CWREDIO

(PC 850)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.	
A		Chassis, PS & CPU Switcher Assembly (Note 1) (NOT C1, D2)		A			
10	CWPAC:RDN	None	Select for I/O switch spares	UL	0	\$0	A
		Switch Assy	(2) RS232 & (2) RS485 ports (Standard)	UL	3	\$5,185	A
		Switch Assy	(2) RS232 & (2) RS485 ports (Extend Switchover)	UL	4	\$5,185	A
BC - PQ		I/O Switcher (Slot 1 - 8) (Note 2 & 3)		BC - PQ			
20 - 90	CWPAC:RDN	None	Empty Slot	UL	00	\$0	A
		None	Empty slot with blank	UL	20	\$17	A
		Local Terminations	Includes cables from I/O module to switcher				
	CWPAC:RDN	Digital Input	Internally or Externally	UL	01	\$2,434	A
		Analog Input	4-20 mA input (Note 4)	UL	02	\$2,920	A
		Digital Output		UL	04	\$2,434	A
		Analog Output	4-20 mA	UL	05	\$2,662	A
		Analog Output With Read back	4-20 mA	UL	12	\$2,662	A
		Digital Output With Read back		UL	15	\$2,434	A
		Remote Terminations	Includes cables from I/O module to switcher				
	CWPAC:RDN	Digital Input	Internally or Externally	UL	06	\$2,434	A
		Analog Input	4-20 mA input (Note 4)	UL	07	\$2,920	A
		Digital Output		UL	09	\$2,434	A
		Analog Output	4-20 mA	UL	10	\$2,662	A
		Analog Output With Read back		UL	14	\$2,662	A
Digital Output With Read back			UL	13	\$2,434	A	
R		Conformal Coating					
100		With Conformal	UL	1	\$0	A	

Model Number: CWREDIO - A - B C - D E - F G - H I - J K - L M - N O - P Q

Redundant unit includes: Chassis, 2-PSSM, Redundancy Switch Panel and serial communication cables from the CPUs to the Switch Panel.

Note 1: Only 8 slot base chassis are supported. Do not use 4 slot ControlWave chassis with I/O redundant systems.

Note 2: Use ONLY Remote Termination I/O modules in the ControlWave base controllers and I/O Expansion Racks.

Note 3: All I/O switchers support the double density I/O modules.

Note 4: Select 1 - 5V AI modules when ordering ControlWave I/O modules. Even the 4 - 20mA switch modules use 1 - 5V AI modules in the base controller chassis. Only the 4 - 20 mA inputs are externally sourced.

The AI modules in the ControlWave chassis must be a 1 - 5 V input modules for either the 1 - 5 V or 4 - 20 mA switchers. This means that field inputs can be either 1 - 5 V or 4 - 20 mA external sourced inputs, however the redundant switcher always provides a 1 - 5 V signal to the I/O card in the ControlWave Chassis.

ControlWave PAC Parts & Accessories

(PC 854)

DESCRIPTION		PART NO.	LIST PRICE	CAT.
Spare Parts				
Terminal Housing	Blue door assembly	396282-01-6	\$25	D1
Termination Block	Local Term	396286-01-1	\$95	D1
Termination Block	Remote DI	396381-01-4	\$95	D1
Termination Block	Remote DO	396381-02-2	\$95	D1
Termination Block	Remote AI/AO	396381-03-0	\$77	D1
Termination Block	Remote UDI	396381-04-9	\$95	D1
Door Labels				
16 AI Label		396364-01-2	\$1	D1
8 AI Label		396377-01-7	\$1	D1
8 AO Label		396364-02-0	\$1	D1
4 AO Label		396377-02-5	\$1	D1
32 DI Label		396364-03-9	\$1	D1
16 DI Label		396377-03-3	\$1	D1
32 DO Label		396364-04-7	\$1	D1
16 DO Label		396377-04-1	\$1	D1
12 UDI Label		396364-05-5	\$1	D1
6 UDI Label		396377-05-0	\$1	D1
Redundancy				
Chassis	Panel mount	396483-01-1	\$746	D1
Switcher	2 - RS 232 & 2 - RS 485 comm ports	396484-02-6	\$2,617	D1
Switcher ribbon cable	2 required	396487-01-7	\$140	D1
Red. Comm. Cable	2 - RS 232 & 2 - RS 485 ports	396978-01-0	\$719	D1
Miscellaneous				
Battery		395600-01-4	\$17	D1
Battery holder		395601-01-0	\$3	D1
CPU Key		395602-02-7	\$4	D1
250 ohm resistor	250 ohm (.01% , 1/4 w) (PC 863)	374664-01-3	\$22	D1
Comm Cable	PC to ControlWave cable	392843-01-3	\$95	D1
I/O Blank Panel	I/O slot cover panel	396379-01-0	\$25	D1
Redundant I/O Blank Panel	I/O switcher blank panel	396498-03-5	\$93	D1
RJ-45 Adapter	RJ-45 to 9-pin D connector	392844-01-0	\$73	D1
Remote Termination Relay	6 Amp relay for remote termination.	V2961105	\$10	D1
Remote Termination Fuse	1/8 Amp I/O point fuse for Phoenix remote term.	391707-04-3	\$5	D1
Remote Termination Fuse	1 Amp DO I/O point fuse for Phoenix remote term.	391707-06-0	\$5	D1
Remote Termination Fuse	2 Amp DI & DO module fuse for Phoenix remote term.	391707-05-1	\$5	D1
RTD sensor	TC cold junction compensation local & remote term	400128-01-2	\$43	D1

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ControlWave PAC Spares & Accessories (Cont.)

(PC 854/493)

DESCRIPTION		PART NO.	LIST PRICE	CAT.
CE Approval Kits (PC 854)	CPU port configuration model (Note 1)			
	0 - ENET & 2 - RS 232	396359-02-7-CE-Kit	\$22	D1
	0 - ENET & 3 - RS 232 & 1 RS 485	396359-09-4-CE-Kit	\$22	D1
	0 - ENET & 2 - RS 232 & 2 RS 485	396359-10-8-CE-Kit	\$22	D1
	1 - ENET & 2 - RS 232	396359-01-9-CE-Kit	\$22	D1
	1 - ENET & 3 - RS 232 & 1 - RS 485	396359-06-0-CE-Kit	\$22	D1
	1 - ENET & 2 - RS 232 & 2 - RS 485	396359-07-8-CE-Kit	\$22	D1
	3 - ENET & 3 - RS 232 & 1 - RS 485	396359-05-1-CE-Kit	\$22	D1
	3 - ENET & 2 - RS 232 & 2 - RS 485	396359-12-4-CE-Kit	\$22	D1
C - Series Not Class 1, Div 2, Screw terminals				
24 V, 5 A (120 VAC)	DIN rail (-25 to 70 deg. C) Not Class 1, Div 2	398036-00-4	\$258	D1
Power Supply/ Charger (Not C1, D2)	Use with VCS5.241 or VCS10241 (Replaces Converter Concepts SYS-30009)			
12 V & 24 V, (24 Vdc Input)	DIN rail (-25 to 70 deg. C)	398036-01-2	\$713	D1
Note1: CPU CE Kit includes CE Foil shield, labels and instructions.				

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ControlWave PAC Spares & Accessories (Cont.)

(PC 492)

DESCRIPTION		PART NO.	LIST PRICE	CAT.
Communication Port Devices (PC 493)				
HART Device Interface (HDI)	Serial to FSK HART interface (PC 878)	392930-01-3	\$768	A
Digi Edgeport1	USB to Serial Adapter (Requires serial RTU Comm Cable)	V301-1001-15	\$178	D1
Phoenix Terminal Server	RS232 to Ethernet Conv. (0 to 55 deg. C)	V2744490	\$604	D1
Phoenix RS485 Surge Protector		397155-00-0	\$137	D1
IG202T PLM (Note 1)	1200 baud 202T standalone modem 100-240VAC, 10 - 48V DC	VIG202T	\$1,093	D1
IG202T-DC (Note 1)	1200 baud 202T standalone modem 10 - 48V DC	VIG202T-DC	\$1,062	D1
IG202T DIN mount kit	IG202T DIN Rail mounting kit	VIG202T-DIN	\$71	D1
Industrial Switches (PC 493)				
4-Port Industrial Switch	4 port 10/100 Base-T switch + uplink (Replaces BB-GT-5ES-1)	VSLX-5ES-1	\$297	D1
8-Port Industrial Switch	7 port 10/100 Base-T switch + uplink (Replaces BB-GT-9ES-1)	VSLX-8ES-1	\$372	D1
4-Port Fiber Switch (Note 1)	1-multimode ST & 4-RJ45 (Replaces BB-GT-5ES-2ST)	VSLX-5ES-2ST	\$416	D1
Maple Systems (PC 492)				
LCD Displays				
OIT 3175-A00 - 16 Key	4 Line X 20 Character 0-50 deg. C	395631-02-5	\$546	D1
OIT 3185-A00 - 24 Key	4 Line X 20 Character 0-50 deg. C	395631-03-3	\$575	D1
VFD Displays - All are Class 1, Div 2				
OIT 4175A-A00 - 16 Key	4 Line X 20 Char -10 to +65 deg. C	395631-08-4	\$836	D1
OIT 4185A-A00 - 24 Key	4 Line X 20 Char -10 to +65 deg. C	395631-09-2	\$872	D1
Cables				
OIT - Configuration & Comm.	PC & ControlWave to OIT (Note 2)	395632-01-3	\$66	D1
OIT - 33XX Comm cable	33XX to OIT only	395633-01-0	\$73	D1
Color Touch Screen Displays				
HMI 5056N (Ethernet port)	5.6" color display, touch screen	VHMI5056N	\$800	D1
HMI 5070 TH (Ethernet port)	7" color display, touch screen	VHMI5070TH	\$1,004	D1
HMI 5104 XH (Ethernet port)	10" color display, touch screen	VHMI5104XH	\$2,458	D1
HMI 5121 X (Ethernet port)	12" color display, touch screen	VHMI5121X	\$2,604	D1
HMI Cables				
HMI Config Cable	PC to Maple (Note 3)	V74310098	\$66	D1
HMI to CW Comm Cable	Maple To ControlWave comm cable (RS232)	V744601245	\$73	D1
Configuration Software CD (Note 4)				
OIT Series display	Required to develop OIT LCD displays	395634-01-6	\$108	D1
HMI Series display	Required to develop HMI displays	VEZWARE	\$108	D1
Note 1: Requires a 9 - pin serial modem cable.				
Note 2: This cable is required for programming and communication.				
Note 3: Required for programming & downloading to Maple.				
Note 4: One CD required for programming any number of displays.				

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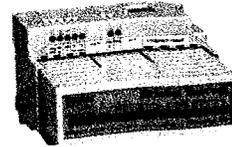
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ControlWave Ethernet I/O

The compact DIN-rail mount ControlWave Ethernet I/O modules provide open connectivity through 10 Mbps and 38.4 KB serial RS 485. The wide range of module I/O configuration brings exceptional flexibility to network diversity. Each module is designed and rated for harsh industrial environments. And UL Approvals for CLASS1, Div. 2 HAZARDOUS INSTALLATIONS.



DESCRIPTION	PART NO.	LIST PRICE	CAT.
Ethernet I/O Modules			
16 AI (4-20 mA)	BB-16AI2-H	\$1,199	D1
8 AI/4 AO	BB-8AI2-4AO2-H	\$1,199	D1
16 DI	BB-16DI2-H	\$682	D1
16 DO	BB-16DO2-H	\$751	D1
8 DI/8 DO	BB-8DI2-8DO2-H	\$751	D1
8 AI/8 DI	BB-8DI2-8AI2-H	\$896	D1
8 CNT, Up to 50 KHz	BB-8CNT-U	\$881	D1
8 Thermocouple / Instrumentation AI	BB-8INS-U	\$1,291	D1
4RTD/4 DI	BB-4RTD-4DI2-U	\$1,291	D1
Accessories			
Setup Module	BB-232-SETUP	\$289	D1
Software			
I/O Configuration Tools	Included on the Bristol Software CD	\$0	D1
Spare and replacement module			
16 AI (4-20 mA)	BB-16AI2-M	\$1,047	D1
8 AI/4 AO	BB-8AI2-4AO2-M	\$1,047	D1
16 DI	BB-16DI2-M	\$531	D1
16 DO	BB-16DO2-M	\$600	D1
8 DI/8 DO	BB-8DI2-8DO2-M	\$600	D1
8 AI/8 DI	BB-8DI2-8AI2-M	\$743	D1
8 CNT, Up to 50 KHz	BB-8CNT-M	\$728	D1
8 Thermocouple / Instrumentation AI	BB-8INS-M	\$1,291	D1
4RTD/4 DI	BB-4RTD-4DI2-M	\$1,139	D1

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ControlWave Micro

ControlWave Micro is a high performance RTU/PLC ideally suited for remote area installations in harsh environments. It offers very low power consumption, a wide operating temperature range and compact footprint. The wide variety of flexible modular I/O and up to 11 serial and two Ethernet communication ports make ControlWave Micro extremely adaptable to virtually any in-plant or remote measurement and control application.



CWM

(PC 853)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.	
A		Base Housing (Note 4)		A			
10	420DS-5L	None	UL	0	\$0	A	
		3 slot panel mount base					
		PSSM, CPU & 1 slot for I/O, No Comm Exp	UL	1	\$376	A	
		4 slot panel mount base					
		PSSM, CPU & 2 slots for Exp Comm or I/O	UL	2	\$419	A	
20	420DS-5L	8 slot panel mount base					
		PSSM, CPU, 2 slots for Exp Comm or I/O and 4 slots dedicated to I/O modules	UL	3	\$489	A	
		I/O Expansion Base (Note 4)		B			
		None	UL	0	\$0	A	
20	420DS-5L	2 I/O slot panel mount exp base, Up to 2 I/O modules	UL	1	\$350	A	
		4 I/O slot panel mount exp base, Up to 4 I/O modules	UL	2	\$386	A	
		8 I/O slot panel mount exp base, Up to 8 I/O modules	UL	3	\$456	A	
		CC			CC		
30	420DS-5L	CPU Module (Slot #2) (Note 2)					
		None	UL	00	\$0	A	
		Micro 33 CPU With Gas Calcs					
		33MHz CPU/2M SR, 64M SDR, 16M Flash 0 - ENET & 2 - RS 232, & 1 RS 485	UL	01	\$1,271	A	
		Micro 33 CPU Without Gas Calcs					
		33MHz CPU/2M SR, 64M SDR, 16M Flash 0 - ENET & 2 - RS 232, & 1 RS 485	UL	02	\$1,029	A	
		Micro 150 CPU With Gas Calcs					
		150MHz CPU/2M SR, 64M SDR, 16M Flash 0 - ENET & 2 - RS 232 & 1 RS 485	UL	04	\$1,269	A	
		150MHz CPU/1M SR, 64M SDR, 16M Flash 1 - ENET & 2 - RS 232 & 1 RS 485	UL	05	\$1,651	A	
		150MHz CPU/2M SR, 64M SDR, 16M Flash 2 - ENET & 1 - RS 232 & 1 RS 485	UL	06	\$1,965	A	
		Micro 150 CPU Without Gas Calcs					
		150MHz CPU/2M SR, 64M SDR, 16M Flash 1 - ENET & 2 - RS 232 & 1 RS 485	UL	07	\$1,317	A	
		150MHz CPU/2M SR, 64M SDR, 16M Flash 2 - ENET & 1 - RS 232 & 1 RS 485	UL	08	\$1,629	A	
Micro Distributed I/O Expansion CPU							
Comm CPU 1 - ENET & 2 - RS 232, & 1 RS 485	UL	09	\$902	A			

Model Number: CWM - A - B - CC - DD - E - F - G - HH - JJ - KK - LL - MM - NN - OO - PP - QQ - RR - SS - TT - UU - VV - WW - X

Note 1: One I/O Expansion Base allowed with 12-24 V System Controller. Up to 6 I/O modules maximum with 6-12VSC.

Note 2: 6-18V System Controller I/O Limit - Up to 6 I/O modules maximum (2 isolated I/O modules maximum).

Note 3: RS 485 port is non-isolated.

Note 4: Unused I/O slots 3-14 of configured ControlWave Micro model include blank I/O module fronts.

ControlWave Micro (Cont.)

CWM

(PC 853)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
DD		Embedded Application		DD		
39	CWMICRO:SM	None	UL	00	\$0	A
		Station Manager Application (Note 4)	UL	01	\$1,446	A
		Station Manager XT Application (Note 4)	UL	02	\$1,446	A
E		Internal Power Supply Module (Slot#1) (Note 1)		E		
40	420DS-5L	None	UL	0	\$0	A
		6 - 18 V input power System Controller With display interface, with wet-end interface	UL	1	\$545	A
		12 - 24 V Syst. Cont., w/o key lock & WD With display interface, no wet-end interface	UL	2	\$545	A
		12 - 24 V Syst. Cont., with key lock & WD With display interface, no wet-end interface	UL	3	\$716	A
F		Approval		F		
45	420DS-5L	Without CE approval	UL	0	\$0	A
		CE approval; CE foil shield and labels	UL/CE	1	\$46	A
G		Display (Keypad buttons)		G		
50	420DS-5L	None	UL	0	\$0	A
		Display - 4 line X 20 character 2 buttons. Also includes 2' display cable	UL	1	\$419	A
		Display/Keypad - 4 line X 20 character 25 button keypad. Also includes 2' cable	UL	2	\$587	A
HH & JJ		I/O & COMM Slot #3 & #4 (Note 3)		HH & JJ		
60 & 70	420DS-5L	Comm Expansion Module				
		None - Blank panel provided for empty slot	UL	00	\$0	A
		2 Port Comm module, isolated RS 485 1 - RS232 & 1 - Isolated RS 485	UL	01	\$865	A
		2 Port Comm module Dial-line modem, 1 - RS232 & 1 - Isolated RS 485 (Note 4)	UL	04	\$1,556	A
		4 Port Comm 2 - RS232, 2 - isolated RS 485	UL	05	\$1,023	A

Note 1: 6-18V System Controller I/O Limit - Up to 6 I/O modules maximum (2 isolated I/O modules maximum).
Note 2: NA
Note 3: Blank I/O slot cover are supplied for unused slots in configured model.
Note 4: Station Manager Application suitable for U.S. Market Only.
Station Manager XT Version requires CWXFC Firmware 1.59 or CWGFC Firmware 2.29 or greater for external measurement.

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ControlWave Micro (Cont.)

CWM

(PC 853)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
HH & JJ		I/O & COMM Slot #3 & #4		HH & JJ		
		Local Termination I/O Modules				
60 & 70	420DS-5L	Mixed 12 DI, 4 DO with LEDs Non-Isolated internally sourced dry contact	UL	06	\$489	A
		Isolated, Mixed 12 DI, 4 DO with LEDs Isolated, Int. or Ext. sourced dry contact	UL	07	\$598	A
		16 DI with LEDs (24 VDC Input) Isolated, Int. or Ext. sourced dry contact	UL	08	\$551	A
		16 DI with LEDs (12 VDC Input), Ext. sourced	UL	09	\$598	A
		8 DI with LEDs (120 - 240 VAC Input) Isolated externally sourced voltage input	N/A	10	\$481	A
		16 DO with LEDs; 1/2 Amp Open source output	UL	11	\$481	A
		8 DO with LEDs (120 - 240 VAC Output) (Note 1)				
		6A Relay @ 120 VAC externally sourced	N/A	12	\$613	A
		6 AI (Note 2) Externally sourced 1-5 V or 4-20 mA	UL	13	\$666	A
		Mixed 6 AI, 2 AO (Note 2)				
		Externally sourced 1-5 V or 4-20 mA	UL	14	\$878	A
		Isolated AI, 8 inputs (180V CM), Int or Ext sourced 1-5 V or 4-20 mA	UL	15	\$1,224	A
		6 TC, B, R, S, J, E, K, T, C, N, ± 10 mV	UL	16	\$1,138	A
		4 RTD, 2, 3, or 4 wire platinum RTD	UL	17	\$1,138	A
		Isolated AO, 4 outputs Int or Ext sourced 1-5 V or 4-20 mA	UL	18	\$963	A
		4 HSC with LEDs, Hi / Low Speed Counters	UL	19	\$516	A
		8 HART/BTI (Note 3)				
		HART, BTI, AI, AO. Int/Ext sourced AIs	UL	20	\$1,930	A
		Mixed 6 DIO, 4 AI, 2 HSC with LEDs				
		Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	21	\$832	A
		Mixed 6 DIO, 4 AI, 2 HSC, 1 AO with LEDs				
		Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	22	\$971	A

Note 1: 8 Point 120VAC DI & DO Card cannot be used in the first slot of the I/O Expansion Chassis. 120VAC DI & DO modules are not class 1, Div 2 approved.

Note 2: The externally sourced AIs on the mixed I/O cards require external wiring for the 24V device power. Terminal block connections for distributed field power are provided on the I/O card for AOs only.

Note 3: Not supported in I/O Expansion chassis. Pass-through to AMS not supported. Maximum of two HART modules may be installed in a ControlWave Micro chassis, with 6 - 18V Internal Power Supply module. Order additional HART/BTI modules as spares when using 24V Power Supply module.

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ControlWave Micro (Cont.)

CWM

(PC 853)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
60 & 70	420DS-5L	Remote Termination I/O Module Spares without Remote Terminal Blocks				
		Mixed 12 DI, 4 DO with LEDs Non-Isolated internally sourced dry contact	N/A	62	\$489	A
		16 DI with LEDs Isolated, Int. or Ext. sourced dry contact	N/A	63	\$551	A
		16 DO with LEDs, .5 Amp Open source output	N/A	64	\$481	A
		6 AI (Note 1), Externally sourced 1-5 V or 4-20 mA	N/A	65	\$666	A
		Mixed 6 AI, 2 AO (Note 1) Externally sourced 1-5 V or 4-20 mA	N/A	66	\$878	A
		Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20 mA	N/A	67	\$1,224	A
		6 TC, B, R, S, J, E, K, T, C, N, + 10 mV	N/A	68	\$1,138	A
		4 RTD, 2, 3, or 4 wire platinum RTD	N/A	69	\$1,138	A
		Isolated AO, 4 outputs Int or Ext sourced 1-5 V or 4-20 mA	N/A	70	\$963	A
		4 HSC with LEDs, Hi / Low Speed Counters	N/A	71	\$516	A
		8 HART/BTI (Note 2) HART, BTI, AI, AO. Int/Ext sourced AIs	N/A	72	\$1,930	A
		Mixed 6 DIO, 4 AI, 2 HSC, With LEDS Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	73	\$832	A
		Mixed 6 DIO, 4 AI, 2 HSC, 1 AO, With LEDS Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	74	\$971	A
		<p>Note 1: The externally sourced AIs on the mixed I/O cards require external wiring for the 24V device power. Terminal block connections for the field power are provided on the I/O card for AOs only.</p> <p>Note 2: Not supported in I/O Expansion chassis. Pass-through to AMS not supported. Maximum of two HART modules may be installed in a ControlWave Micro chassis.</p>				

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ControlWave Micro (Cont.)

CWM

(PC 853)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.	
KK & LL		I/O Slot #5 & #6		KK & LL			
	420DS-5L	None - Blank panel provided for empty slot	N/A	00	\$0	A	
		Local Termination I/O Modules					
80 & 90	420DS-5L	Mixed 12 DI, 4 DO with LEDs					
		Non-Isolated internally sourced dry contact	UL	06	\$489	A	
		Isolated, Mixed 12 DI, 4 DO with LEDs					
		Isolated, Int. or Ext. sourced dry contact	UL	07	\$598	A	
		16 DI with LEDs (24 VDC Input)					
		Isolated, Int. or Ext. sourced dry contact	UL	08	\$551	A	
		16 DI with LEDs (12 VDC Input), Ext. sourced	UL	09	\$598	A	
		8 DI with LEDs (120 - 240 VAC Input)					
		Isolated externally sourced voltage input	N/A	10	\$481	A	
		16 DO with LEDs, 1/2 Amp Open source output	UL	11	\$481	A	
		8 DO with LEDs (120 - 240 VAC Output)					
		6A Relay @ 120 VAC externally sourced (Note 1)	N/A	12	\$613	A	
		6 AI, Externally sourced 1-5 V or 4-20 mA (Note 2)	UL	13	\$666	A	
		Mixed 6 AI, 2 AO					
		Externally sourced 1-5 V or 4-20 mA (Note 2)	UL	14	\$878	A	
		Isolated AI, 8 inputs (180 V CM)					
		Int or Ext sourced 1-5 V or 4-20 mA	UL	15	\$1,224	A	
		6 TC, B, R, S, J, E, K, T, C, N ± 10 mV	UL	16	\$1,138	A	
		4 RTD, 2, 3, or 4 wire platinum RTD	UL	17	\$1,138	A	
		Isolated AO, 4 outputs					
		Int or Ext sourced 1-5 V or 4-20 mA	UL	18	\$963	A	
		4 HSC with LEDs, Hi / Low Speed Counters	UL	19	\$516	A	
8 HART/BTI							
HART, BTI, AI, AO. Int/Ext sourced AIs (Note 3)	UL	20	\$1,930	A			
Mixed 6 DIO, 4 AI, 2 HSC, with LEDs							
Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	21	\$832	A			
Mixed 6 DIO, 4 AI, 2 HSC, 1 AO, with LEDs							
Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	22	\$971	A			
<p>Note 1: 8 Point 120VAC DI & DO Card cannot be used in the first slot of the I/O Expansion Chassis. 120VAC DI & DO modules are not class 1, Div 2 approved.</p> <p>Note 2: The externally sourced AIs on the mixed I/O cards require external wiring for the 24V device power. Terminal block connections for the field power are provided on the I/O card for AOs only.</p> <p>Note 3: Not supported in I/O Expansion chassis. Pass-through to AMS not supported. Maximum of two HART modules may be installed in a ControlWave Micro chassis.</p>							

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ControlWave Micro (Cont.)

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(PC 853)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.	
80 & 90		I/O Slot #5 & #6		KK & LL			
		Remote Termination I/O Modules with Remote Terminal Blocks (No Fuses)					
	420DS-5L		Mixed 12 DI, 4 DO with LEDs				
			Non-Isolated internally sourced dry contact	N/A	23	\$658	A
			16 DI with LEDs, Isolated, Int. or Ext. sourced dry contact	N/A	24	\$719	A
			16 DO with LEDs, .5 Amp Open source output (Note 3)	N/A	25	\$632	A
			6 AI, Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	26	\$613	A
			Mixed 6 AI, 2 AO				
			Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	27	\$998	A
			Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20 mA	N/A	28	\$1,345	A
			6 TC; B, R, S, J, E, K, T, C, N, + 10 mV	N/A	29	\$1,260	A
			4 RTD; 2, 3, or 4 wire platinum RTD	N/A	30	\$1,260	A
			Isolated AO, 4 outputs				
			Int or Ext sourced 1-5 V or 4-20 mA	N/A	31	\$1,086	A
		4 HSC with LEDs, Hi / Low Speed Counters	N/A	32	\$639	A	
		8 HART/BTI HART, BTI, AI, AO. Int/Ext sourced AIs (Note 2)	N/A	33	\$2,053	A	
		Remote Termination I/O Modules with Remote Terminal Blocks (With Fuses)					
	420DS-5L		16 DI with LEDs, Isolated, Int. or Ext. sourced dry contact	N/A	37	\$882	A
			16 DO with LEDs, .5 Amp Open source output (Note 3)	N/A	38	\$786	A
			6 AI, Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	39	\$828	A
			Mixed 6 AI, 2 AO				
			Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	40	\$1,038	A
			Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20 mA	N/A	41	\$1,385	A
		Isolated AO, 4 outputs					
		Int or Ext sourced 1-5 V or 4-20 mA	N/A	44	\$1,124	A	
		8 HART/BTI HART, BTI, AI, AO. Int/Ext sourced AIs (Note 2)	N/A	46	\$2,092	A	
		Mixed 6 DIO, 4 AI, 2 HSC, With LEDs					
		Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	47	\$1,408	A	
	Mixed 6 DIO, 4 AI, 2 HSC, 1 AO, With LEDs						
	Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	48	\$1,548	A		
	16 DI With 120VAC Remote Terminal Block (NO FUSES)	N/A	60	\$1,087	A		
	16 DO With 120VAC Remote Terminal Block 6Amp RELAY (NO FUSES)	N/A	61	\$968	A		
<p>Note 1: The externally sourced AIs on the mixed I/O cards require external wiring for the 24V device power. Terminal block connections for the field power are provided on the I/O card for AOs only.</p> <p>Note 2: Not supported in I/O Expansion chassis. Pass-through to AMS not supported. Maximum of two HART modules may be installed in a ControlWave Micro chassis.</p> <p>Note 3: 3A maximum per 8 channel remote terminal block.</p>							

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ControlWave Micro (Cont.)

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(PC 853)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.	
MM - VV		COM & I/O Slot #7 through #16		MM - VV			
	420DS-5L	None	N/A	00	\$0	A	
		Local Termination I/O Modules					
100 - 170 175 - 178	420DS-5L	Mixed 12 DI, 4 DO with LEDs Non-Isolated internally sourced dry contact	UL	06	\$489	A	
		Isolated, Mixed 12 DI, 4 DO with LEDs Isolated, Int. or Ext. sourced dry contact	UL	07	\$598	A	
		16 DI with LEDs (24 VDC Input) Isolated, Int. or Ext. sourced dry contact	UL	08	\$551	A	
		16 DI with LEDs (12 VDC Input), Ext. sourced	UL	09	\$598	A	
		8 DI with LEDs (120 - 240 VAC Input)					
		Isolated externally sourced voltage input	UL	10	\$481	A	
		16 DO with LEDs, 1/2 Amp Open source output	UL	11	\$481	A	
		8 DO with LEDs (120-240 VAC Output)					
		6A Relay @ 120 VAC externally sourced (Note 1)	UL	12	\$613	A	
		6 AI, Externally sourced 1-5 V or 4-20 mA (Note 2)	UL	13	\$666	A	
		Mixed 6 AI, 2 AO					
		Externally sourced 1-5 V or 4-20 mA (Note 2)	UL	14	\$878	A	
		Isolated AI, 8 inputs (180 V CM)					
		Int or Ext sourced 1-5 V or 4-20 mA	UL	15	\$1,224	A	
		6 TC, B, R, S, J, E, K, T, C, N, ± 10 mV	UL	16	\$1,138	A	
		4 RTD, 2, 3, or 4 wire platinum RTD	UL	17	\$1,138	A	
		Isolated AO, 4 outputs					
		Int or Ext sourced 1-5 V or 4-20 mA	UL	18	\$963	A	
		4 HSC with LEDs, Hi / Low Speed Counters	UL	19	\$516	A	
		Mixed 6 DIO, 4 AI, 2 HSC, with LEDs Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	21	\$832	A	
		Mixed 6 DIO, 4 AI, 2 HSC, 1 AO, with LEDs Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	22	\$971	A	
		Note 1: 8 Point 120VAC DI & DO Card cannot be used in the first slot of the I/O Expansion Chassis. 120VAC DI & DO modules are not class 1, Div 2 approved.					
Note 2: The externally sourced AIs on the mixed I/O cards require external wiring for the 24V device power. Terminal block connections for the field power are provided on the I/O card for AOs only.							

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ControlWave Micro (Cont.)

CWM

(PC 853)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
MM - VV		COM & I/O Slot #7 through #16		MM - VV		
		Remote Termination I/O Modules with Remote Terminal Blocks (No Fuses)				
	420DS-5L	Mixed 12 DI, 4 DO with LEDs Non-Isolated internally sourced dry contact	N/A	23	\$658	A
		16 DI with LEDs, Isolated, Int. or Ext. sourced dry contact	N/A	24	\$719	A
		16 DO with LEDs, .5 Amp Open source output (Note 2)	N/A	25	\$632	A
		6 AI, Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	26	\$613	A
		Mixed 6 AI, 2 AO Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	27	\$998	A
		Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20 mA	N/A	28	\$1,345	A
		6 TC, B, R, S, J, E, K, T, C, N, ± 10 mV	N/A	29	\$1,260	A
		4 RTD, 2, 3, or 4 wire platinum RTD	N/A	30	\$1,260	A
		Isolated AO, 4 outputs Int or Ext sourced 1-5 V or 4-20 mA	N/A	31	\$1,086	A
		4 HSC with LEDs, Hi / Low Speed Counters	N/A	32	\$639	A
100 - 170 175 - 178		Remote Termination I/O Modules with Remote Terminal Blocks (With Fuses)				
		16 DI with LEDs, Isolated, Int. or Ext. sourced dry contact	N/A	37	\$882	A
		16 DO with LEDs, .5 Amp Open source output (Note 2)	N/A	38	\$786	A
		6 AI, Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	39	\$828	A
		Mixed 6 AI, 2 AO Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	40	\$1,038	A
		Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20 mA	N/A	41	\$1,385	A
		Isolated AO, 4 outputs Int or Ext sourced 1-5 V or 4-20 mA	N/A	44	\$1,124	A
		Mixed 6 DIO, 4 AI, 2 HSC, With LEDs Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	47	\$1,408	A
		Mixed 6 DIO, 4 AI, 2 HSC, 1 AO, With LEDs Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	48	\$1,548	A
		16 DI With 120VAC Remote Terminal Block (NO FUSES)	N/A	60	\$1,087	A
		16 DO With 120VAC Remote Terminal Block 6Amp RELAY (NO FUSES)	N/A	61	\$968	A
<p>Note 1: The externally sourced AIs on the mixed I/O cards require external wiring for the 24V device power. Terminal block connections for the field power are provided on the I/O card for AOs only.</p> <p>Note 2: 3A maximum per 8 channel remote terminal block.</p>						

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ControlWave Micro (Cont.)

CWM

(PC 853)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
WW		Remote Terminal Cable Selection		WW		
		Number of ControlWave Micro Remote I/O Modules				
180	420DS-5L	None	N/A	00	\$0	A
		1 Remote I/O Module	N/A	01	\$120	A
		2 Remote I/O Module	N/A	02	\$239	A
		3 Remote I/O Module	N/A	03	\$359	A
		4 Remote I/O Module	N/A	04	\$479	A
		5 Remote I/O Module	N/A	05	\$600	A
		6 Remote I/O Module	N/A	06	\$719	A
		7 Remote I/O Module	N/A	07	\$839	A
		8 Remote I/O Module	N/A	08	\$959	A
		9 Remote I/O Module	N/A	09	\$1,079	A
		10 Remote I/O Module	N/A	10	\$1,198	A
		11 Remote I/O Module	N/A	11	\$1,319	A
		12 Remote I/O Module	N/A	12	\$1,438	A
		13 Remote I/O Module	N/A	13	\$1,557	A
14 Remote I/O Module	N/A	14	\$1,678	A		
X		Remote Termination Length Selection		X		
190	420DS-5L	None	N/A	0	\$0	A
		18 inch Cable	N/A	1	\$0	A
		39 inch Cable	N/A	2	\$0	A
		6.5 foot Cable	N/A	3	\$0	A
		13 foot Cable	N/A	4	\$0	A

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ControlWave PAC ControlWave Micro Parts and Accessories

(PC 851)

DESCRIPTION	PART NO.	LIST PRICE	CAT.
ControlWave PAC & Micro Remote Terminal Blocks (NOT C1, D2) (Note 1 & 3) (replacement fuses & relays can be found on parts page) (PC 851)			
Terminal Block	ControlWave PAC	ControlWave Micro	
4 point AI (No Fuse)	8 & 6 channel AI	6 & 8 channel AI, Mixed 6AI/2AO	
4 point RTD (No Fuse)	4 channel RTD	4 channel RTD	
2 point AO (No Fuse)	4 & 8 channel AO	4 channel AO	
2 point HSC (No Fuse)	4 channel UDI	4 channel HSC	396391-01-0 \$60 D1
4 point AI (Fused)	8 & 16 channel AI	6 & 8 channel AI, Mixed 6AI/2AO	
2 point AO (Fuses)			396391-02-8 \$81 D1
8 point TC input block	6 channel TC	6 channel TC	396885-01-2 \$140 D1
8 point DI (No Fuse)	16 & 32 channel DI	8 & 16 channel DI, Mixed 12DI/4DO	
8 point DO (No Fuse) (Note 4)	16 & 32 channel DO	8 channel DO	396292-01-6 \$84 D1
8 point DI (Fused)	16 & 32 channel DI	16 channel DI	395622-02-6 \$164 D1
8 point DI - 120Vac (No Fuse)	8 & 116 ch DI (Int. pwr)	16 channel DI	395622-04-2 \$266 D1
8 point DO (Fused) (Note 4)	16 & 32 channel DO	16 channel DO	395622-03-4 \$154 D1
8 point 6A Relay DO (No Fuse)	16 & 32 channel DO	16 channel DO	395622-00-0 \$245 D1
16 point Mixed I/O (Fused)	NA	Mixed 6 DIO/4 AI/1 AO	400131-02-1 \$582 D1
Remote Terminal Blocks cables (1 cable required for each terminal block; 2 cables for Mix I/O terminal blocks) (PC 851)			
18" Term Cable		396389-04-0	\$44 D1
39" Term Cable		396389-01-5	\$46 D1
6.5 ft. Term Cable		396389-02-3	\$55 D1
13 ft. Term Cable		396389-03-1	\$68 D1
CE Approval Retrofit Kits (PC 854)			
CPU without Ethernet	CE foil shield and labels	621538-02-7-Kit	\$20 D1
CPU with Ethernet	CE foil shield and labels	621538-01-9-Kit	\$20 D1
PSSM module	CE foil shield and labels	621538-04-3-Kit	\$20 D1
Comm Expansion Module	CE foil shield and labels	621538-03-5-Kit	\$20 D1
Note 1: Shield termination connection for AI & AO Remote Terminal blocks recommend (P/N 395722-01-2 \$9) AO requires one and the AI requires two.			
Note 2: The fuses do not provide protection for HSC points.			
Note 3: Phoenix Remote Terminations are not approved for Class 1, Div 2 installations.			
Note 4: Max 3A per 8 Channel Terminal Block			

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ControlWave Micro Spares and Accessories (Cont.)

(PC 854)

DESCRIPTION		PART NO.	LIST PRICE	CAT.
Spare Parts & Miscellaneous Accessories (PC 493 & 854)				
DIN Rail Mounting Adapter	Fits 2, 3 and 4 slot chassis	396856-01-2	\$119	D1
DIN Rail Mounting Adapter	Fits 8 slot chassis	396856-02-0	\$189	D1
Loop Supply	DIN Rail mount 24V Loop Supply	721708-02-1	\$528	A
I/O module wire way cover	Covers 2 I/O modules	396546-01-3	\$15	D1
LED board	16 LEDs for DIO, DI, DO and HSC modules	400042-01-0	\$61	D1
Blank I/O module front		396545-01-7	\$12	D1
Termination Block	PSSM 3-pin for power	391718-10-0	\$15	D1
Termination Block label	Label for 3-pin power terminal block above	396592-00-7	\$1	D1
Termination Block	PSSM 2-pin for watchdog	391718-09-6	\$15	D1
Termination Block	10-pin terminal block (All I/O modules)	391718-03-7	\$25	D1
Remote Termination Relay	6 Amp Relay for remote termination.	V2961105	\$10	D1
Remote Termination Fuse	1/8 Amp I/O point fuse for Phoenix remote termination.	391707-04-3	\$5	D1
Remote Termination Fuse	1 Amp DO I/O point fuse for Phoenix remote termination.	391707-06-0	\$5	D1
Remote Termination Fuse	2 Amp DI & DO module fuse for Phoenix remote termination.	391707-05-1	\$5	D1
Remote Termination Fuse	1/8 Amp I/O point fuse for MIO 400131-02-1	395735-01-7	\$5	D1
Remote Termination Fuse	1/4 Amp fuse for MIO 400131-02-1	395736-01-3	\$5	D1
33 MHZ CPU Boot PROM	Boot PROM for 33 MHz CPU	Contact Watertown		
150 MHZ CPU Boot PROM	Boot PROM for all 150 MHz CPUs	Contact Watertown		
Boot PROM Extractor	PROM Extraction tool	395548-01-2	\$8	D1
RTD sensor	TC cold junction compensation for local termination	400127-01-6	\$39	D1
RTD sensor	TC cold junction compensation for remote termination module	400128-01-2	\$43	D1
Jumper plug		389193-01-1	\$1	D1
Battery (BR2330)	Use with clip type holder	395620-01-5	\$23	D1
Battery (CR2032)	Use with snap type holder	395620-01-5	\$23	D1
Fuse		391196-12-0	\$3	D1
Dial-Line Modem Kit	Replacement Kit	396582-03-6	\$698	D1
Note 1: Shield termination connection for AI & AO Remote Terminal blocks recommend (P/N 395722-01-2 \$9) AO requires one and the AI requires two.				
Note 2: The fuses do not provide protection for HSC points.				

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ControlWave Applications SOFTWARE USER LICENSE

For customer order of 12 Licenses, order a 10 License Dongle and a 2 License Dongle

Order by line Segment Numbers, Line 1: Segment 10 =10 = \$12,852

Line 2: Segment 10 = 2 = \$2856

Total List price is \$15,400 subject to Base and Extended discounts

CWAP

(PC 894)

MODEL & SEG	SPEC SHEET	DESCRIPTION (Includes access to upgrades for 1 year)	SELECT	LIST PRICE	CAT.
Hardware Dongle License					
AA		ControlWave Station Manager (Note 1 & 2)	AA	Base	
10	CWMICRO:SM	USB Dongle containing the number of RTU to be licensed (Note 1) (Compatible with CW Micro Only)	01	\$1,428	A
			02	\$2,856	
			03	\$4,284	
			04	\$5,712	
			05	\$7,140	
			10	\$12,852	
			15	\$19,278	
			20	\$25,704	
			25	\$26,775	
			30	\$32,130	
			35	\$37,485	
			40	\$42,840	
			45	\$48,195	
50	\$48,960				
BB		Other Application (Future)	BB	+	+
20		USB Dongle containing the number of RTU to be licensed			
BB		Notes			
Note: 1 Station Manager is suitable for U.S. market only. Note: 2 Station Manager Xt version requires CW XFC firmware 1.59 or CW GFC firmware 2.29 or greater for external measurement. The Dongle provides the number of User Licenses ordered. Each license will enable a single RTU to run the Station Manager application. Licenses can also be restored from the RTU back to the Dongle to allow licensing on another RTU.					
Options					
Station Manager Locked Source			397014-00-7	\$7,744	D1
Station Manager XT Locked Source			397015-00-3	\$7,744	D1

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Rosemount 1420 Wireless Gateway

The Rosemount 1420 Wireless Gateway provides wireless connectivity to Emerson Smart Field Devices and RAS ControlWave, ROC800 and FB107 RTUs and flow computers. Communication between the RTU and 1420 is via serial or Ethernet Modbus. The 1420 also powers PlantWeb® by working together with AMS™ Suite software to deliver the power of wireless connectivity with Emerson field devices.



V1420

(PC 493)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
		1420 Rosemount Wireless Gateway Base Unit				
		Wireless gateway with Modbus TCP/IP	N/A		\$5,435	D1
A		Power Input		A		
10		24 Vdc	N/A	A	\$0	D1
B		Ethernet Communication		B		
20		With	N/A	1	\$0	D1
CC		2.4 GHz Wireless HART		CC		
30		With	N/A	A3	\$0	D1
D		Serial Communication Port		D		
40		None	N/A	N	\$0	D1
		With RS485 port Modbus RTU	N/A	A	\$162	D1
E		Ethernet Communication Protocols		E		
50		Webserver, Modbus TCP/IP, AMS ready	N/A	2	\$0	D1
FF		Approval		FF		
60		Class 1, Div.2, & ATEX Type N	FM/ATEX	KD		D1
GG		Conduit Adapters		GG		
70		With Adapter kit Includes 1/2" NPT, CM20, PG13.5 & 3/4" NPT	N/A	J5	\$0	D1
HHH		Antenna Kit		HHH		
80		None Omni antenna, cable and Lighting arrestor	N/A	000	\$0	D1
		50 foot cable Omni antenna, cable and Lighting arrestor	N/A	WL2	\$1,204	D1
		20 foot cable Omni antenna, cable and Lighting arrestor	N/A	WL3	\$1,204	D1
		10 foot cable Omni antenna, cable and Lighting arrestor	N/A	WL4	\$1,204	D1
V1420- A - B - CC - D - E - FF - J5 - HHH						

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ControlWave FOUNDATION Fieldbus Interface

The FOUNDATION™ Fieldbus (FF) Interface allows a ControlWave RTU to support bi-directional multi-drop digital communication between FOUNDATION Fieldbus H1 devices over a High-Speed Ethernet (HSE) host network.

FF consists of two separate bus networks. The first is the 31.25KB (H1) bus for multi-drop connection to 2-wire field devices. The second is the 10/100 Mbps Ethernet control network backbone with HSE protocol which passes FF data bi-directionally to a ControlWave or to the AMS™ Suite for integration within the PlantWeb® architecture.

The FF Interface may be a separate standalone chassis for use with any ControlWave family PLC/RTU or it can be connected to, and receive power from, a ControlWave Micro backplane.



CWM-FF

(PC 849)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
A		Packaging		A		
10		None	NA	0	\$0	A
		Chassis - Panel mount	UL	1	\$554	A
		Chassis - Din rail mount	UL	2	\$637	A
B		HSE Processor		B		
20		None	NA	0	\$0	A
		FOUNDATION Fieldbus processor	UL	1	\$2,883	A
C		Segment Card Slot 1		C		
30		None	NA	0	\$0	A
		FF H1, single segment w/o power conditioner	UL	1	\$1,996	A
		FF H1, single segment with power conditioner	UL	2	\$2,439	A
		FF H1, dual segment w/o power conditioner	UL	3	\$2,771	A
		FF H1, dual segment with power conditioner	UL	4	\$3,215	A
D		Segment Card Slot 2		D		
40		None	UL	0		
		FF H1, single segment w/o power conditioner	UL	1	\$1,996	A
		FF H1, single segment with power conditioner	UL	2	\$2,439	A
		FF H1, dual segment w/o power conditioner	UL	3	\$2,771	A
		FF H1, dual segment with power conditioner	UL	4	\$3,215	A

Model Number: CWM-FF - A - B - C - D

ControlWave FOUNDATION Fieldbus Interface Parts

(PC 898/410)

DESCRIPTION	PART NO.	LIST PRICE	CAT.
Field Interface Configuration Software (PC 898)			
Software CD with license	395575-11-7	\$2,778	A
Spare parts (PC 410)			
H1 Segment Carrier	400136-01-5	\$1,334	A
H1 Segment module	396910-01-7	\$833	A
Power Conditioner	396911-01-3	\$500	A
FUSE (1.5A 5B)	395603-10-2	\$4	D1
Foundation Fieldbus Terminator	395757-01-0	\$59	D1

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ControlWave Express

ControlWave® Express SCADA RTU provides exceptional performance and unique functionality for applications requiring low installation cost, very low power consumption, and space efficiency. ControlWave Express is a fixed I/O RTU with three serial and one optional Ethernet port for a wide range of remote area applications.



CWEXP

(PC 856)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
A		Packaging		A		
10	420DS-6C	Basic RTU Panel Mount	UL/ATEX	1	\$0	A
		Basic RTU 35 MM DIN Rail Mount	UL/ATEX	2	\$101	A
B		Certification		B		
20		UL Class I DIV II	UL/ATEX	1	\$0	A
		UL, CE (With Protective Cover) (Note 1)	UL/ATEX/CE	2	\$51	A
C D		Processor (CPU board has 2 PI/DI & 3 serial ports)		C D		
		Advanced CPU with gas calculations				
		Ultra low power CPU (5-18V, Solar reg, AUX Out & RTD interface, 14 MHz)	UL/ATEX	A5	\$2,068	A
		Low power CPU without Ethernet (9-28V, Solar Regulator, Aux Out, 33 MHz)	UL/ATEX	A6	\$1,944	A
		CPU with Ethernet (9-28V, Ethernet, 33 MHz, No Solar Regulator or Aux Out)	UL/ATEX	A8	\$2,152	A
		Standard CPU without gas calculations				
		Ultra low power CPU (5-18V, Solar reg, AUX Out & RTD interface, 14 MHz)	UL/ATEX	S5	\$1,398	A
		Low power CPU without Ethernet (9-28V, Solar Regulator, Aux Out, 33 MHz)	UL/ATEX	S6	\$1,275	A
		CPU with Ethernet (9-28V, Ethernet, 33 MHz, No Solar Regulator or Aux Out)	UL/ATEX	S8	\$1,480	A
E		I/O Options		E		
		None	UL/ATEX	0	\$0	A
		2 PI/DI on Base CPU Base + 2 DI/DO, 4 DI, 2 DO, 2 HSC	UL/ATEX	4	\$289	A
		2 PI/DI on Base CPU Base + 2 DI/DO, 4 DI, 2 DO, 2 HSC, 3 AI	UL/ATEX	5	\$620	A
		2 PI/DI on Base CPU Base + 2 DI/DO, 4 DI, 2 DO, 2 HSC, 3 AI, 1 AO	UL/ATEX	6	\$860	A
F G		Application Program		F G		
		No application program	N/A	00	\$0	A
		Pump Control Application	N/A	01	\$323	A
H		Conformal Coating		H		
		Without	UL/ATEX	0	\$0	A
		With	UL/ATEX	1	\$285	A
J		Display (Keypad buttons)		J		
		None	UL	0	\$0	A
		Display - 4 line X 20 character 2 buttons. Also includes 2' display cable	UL	1	\$419	A
		Display/Keypad - 4 line X 20 character 25 button keypad. Also includes 2' cable	UL	2	\$587	A
Model Number: CWEXP - A - B - C D - E - F G - H - I						
Note 1: 9-pin 'D' connector for Comm port 1 cannot have a connector hood. Use (P/N 392843-03-0 \$104) for cable without						

ControlWave Express Spare Parts

(PC 851)

DESCRIPTION	PART NO.	LIST PRICE	CAT.
Fuse	395603-07-2	\$4	D1
Battery	395620-01-5	\$23	D1
DIN rail mounting kit	621583-01-4-Kit	\$90	D1
I/O terminal cover	621590-01-0-Kit	\$52	D1
LED board	400098-01-6	\$43	D1
Boot PROM for all 14 MHz CPUs	Call Watertown		
Boot PROM for all 33 MHz CPUs	Call Watertown		
PROM Extraction tool	395548-01-2	\$8	D1
3 pin terminal block	395711-01-0	\$15	D1
4 pin terminal block	395710-03-0	\$15	D1
5 pin terminal block	395710-04-9	\$23	D1
6 pin power terminal block	395710-07-3	\$23	D1
8 pin terminal block	395710-05-7	\$23	D1
9 pin terminal block	395710-06-5	\$23	D1
PC Cable-10 Foot; 9-pin Female-to-Circular, Alden Connector	395402-01-8	\$171	D1
PC Cable-25 Foot; 9-pin Female-to-Circular, Alden Connector	395402-02-6	\$189	D1

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ControlWave ExpressPAC

ControlWave® ExpressPAC is a pre-packaged SCADA RTU providing exceptional performance and unique functionality for applications requiring low installation cost, very low power consumption, and space efficiency. ControlWave Express is a fixed I/O RTU with three serial and one optional Ethernet port for a wide range of remote area applications. The enclosure supports a wide range of wired and wireless communication, display, solar and battery backup options.



CWEPAC

(PC 859)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
A		Integral Enclosure and LCD/Keypad		A		
10		7½" x 11¾" Lexan with LCD display only, no Keypad	UL	1	\$827	A
		7½" x 11¾" Lexan, LCD, 2 Keys	UL	2	\$1,158	A
		7½" x 11¾" Lexan, LCD, 25 Keys	UL	3	\$1,323	A
		7½" x 11¾" Lexan, LCD, No Display	UL	4	\$643	A
B		Power System (Note 1)		B		
20		None - External Power Source is Necessary	UL	1	\$0	A
		7.2 V Lithium Battery, Single	UL	2	\$248	A
		7.2 V Lithium Battery, Dual	UL	3	\$432	A
		6 V, 7 AH Lead Acid Cell Battery and 6 V, 1 W Solar Panel System	UL	4	\$205	A
		6 V, 7 AH Lead Acid Cell Battery and 6 V, 4.3W Solar Panel System	UL	5	\$373	A
		12 V, 7 AH Lead Acid Cell Battery and 12 V, 4.5 W Solar Panel System	UL	6	\$388	A
C D		Processor (CPU board has 2 P/DI & 3 serial ports)		C D		
30		Advanced CPU with gas calculations				
		Ultra low power CPU (5-18V, Solar reg, AUX Out & RTD interface, 14 MHz)	UL	A5	\$2,068	A
		Low power CPU without Ethernet (9-28V, Solar Regulator, Aux Out, 33 MHz)	UL	A6	\$1,944	A
		CPU with Ethernet (9-28V, Ethernet, 33 MHz, No Solar Regulator or Aux Out)	UL	A8	\$2,152	A
		Standard CPU without gas calculations				
		Ultra low power CPU (5-18V, Solar reg, AUX Out & RTD interface, 14 MHz)	UL	S5	\$1,398	A
		Low power CPU without Ethernet (9-28V, Solar regulator, Aux Out, 33 MHz)	UL	S6	\$1,275	A
	CPU with Ethernet (9-28V, Ethernet, 33 MHz, No Solar Regulator or Aux Out)	UL	S8	\$1,480	A	
Model Number: CWEPAC - A - B - C D - E - F - G H - J - K - L M N						
Note 1: Power System Selections 2, 3, 4, & 5 can only use 5 - 18 V CPUs A1 & S1.						

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ControlWave ExpressPAC (Cont.)

CWEPAC

(PC 859)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
E		I/O Configuration (Note 1)		E		
40		No I/O module - Base CPU 2 DI / PI Only	UL	0	\$0	A
		2 PI/DI on Base CPU + 2 DI/DO, 4 DI, 2 DO, 2 HSC	UL	4	\$289	A
		2 PI/DI on Base CPU + 2 DI/DO, 4 DI, 2 DO, 2 HSC, 3 AI	UL	5	\$620	A
		2 PI/DI on Base CPU + 2 DI/DO, 4 DI, 2 DO, 2 HSC, 3 AI, 1 AO	UL	6	\$860	A
F		Mounting		F		
50		Pole mount (pipe clamp and brackets)	UL	1	\$61	A
		Panel mount (with 4 fastening ears)	UL	2	\$15	A
G H		Application Program		G H		
60		None	UL	00	\$0	A
		Pump Control Application	UL	01	\$312	A
J		Hazardous Area Certification		J		
70		None	UL	0	\$0	A
		Class I, Division 2 Non-incendive (UL/CUL - NI)	UL	1	\$0	A
K		Radio Cable/Mounting Hardware and Polyphaser Option		K		
80		No Radio	UL	0	\$0	A
		Without Polyphaser	UL	1	\$0	A
		With Polyphaser	UL	2	\$168	A
L M N		Radio or Modem Option		L M N		
90		None	UL	000	\$0	A
		Dial-line Modem (Cermatek)	UL	001	\$1,011	A
		1200 Baud leased line modem	UL	002	\$941	A
		Standard FreeWave Radio	UL	103	\$1,417	A
		Standard FreeWave Radio Ready	UL	104	\$156	A
		Standard MDS Transnet Radio	UL	201	\$2,005	A
		Standard Transnet Radio Ready	UL	202	\$156	A
		Standard MDS 9810 Radio with Diag	UL	301	\$2,432	A
		Standard MDS 4710A Radio with Diag	UL	310	\$2,092	A
		Standard MDS 4710B Radio with Diag	UL	311	\$2,092	A
		Standard MDS 9710A Radio with Diag	UL	320	\$2,345	A
		Standard MDS 9710B Radio with Diag	UL	321	\$2,345	A
		Standard MDS 4710 A/B, 9710 A/B, 9810 Radio Ready	UL	322	\$156	A
		Standard MDS EntraNet Radio Ready	UL	404	\$156	A
	Standard MDS iNet 900 Radio Ready	UL	423	\$156	A	
Model Number: CWEPAC - A - B - C D - E - F - G H - J - K - L M N						
Note1: Don't forget to specify a "1" or "2" for MODEL 80 if a radio is selected in 'LMN'.						
Note2: All radios are located on the Radio Bracket in the ExpressPAC enclosure.						

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CW_10, CW_30, CW_35 & CW_31 Upgrade/Exchange

(PC 891)

DESCRIPTION	PART NO.	PRICE	CAT.
CW_10 Upgrade/Exchange Kit (Note: 1)			
CW_10 Upgrade kit - 12 Vdc includes CPU & MFIB	396807-01-1-EXCH	\$5,047	A
CW_10 Upgrade kit - 24 Vdc includes CPU & MFIB	396807-02-0-EXCH	\$5,047	A
CPU Credit - credit issued upon return of 3310 CPU	3310CPU-CREDIT	(\$450)	
MFIB Credit - credit issued upon return of 3310 MFIB	3310MFIB-CREDIT	(\$450)	
CW_30 CPU Upgrade/Exchange Kit (Note: 1 & 2)			
CW_30 CPU, 2 serial, without Ethernet	396807-03-8-EXCH	\$4,205	A
CW_30 CPU, 2 serial, with 1 Ethernet port	396807-04-6-EXCH	\$4,628	A
CW_30 CPU, 2 serial, with 2 Ethernet ports	396807-05-4-EXCH	\$5,047	A
CPU Credit - credit issued upon return of 3330 CPU	3330CPU-CREDIT	(\$752)	
CW_35 CPU Upgrade/Exchange Kit (Note: 1)			
CW_35 CPU, 2 serial, with 2 Ethernet ports	396807-09-7-EXCH	\$4,900	A
CPU Credit - credit issued upon return of 3335 CPU	3335CPU-CREDIT	(\$450)	
CW_31 CPU Upgrade/Exchange Kit (Note: 1)			
CW_31 CPU, 2 serial, with 1 Ethernet ports	396807-10-0-EXCH	\$3,266	A
CPU Credit - credit issued upon return of 3331 CPU	3331CPU-CREDIT	(\$450)	
CW_30 Serial Comm Upgrade/Exchange Kit (Note: 1)			
CW_30 - 2 Port Enhanced Comm Board (3330 only)	396807-06-2-EXCH	\$841	A
CW_30 - 4 Port Enhanced Comm Board (3330 only)	396807-07-0-EXCH	\$1,094	A
Comm Credit - credit issued upon return of 3330 comm card	3330COMM-CREDIT	(\$150)	
CW_35 Serial Comm Upgrade/Exchange Kit (Note: 1)			
CW_35 - 2 Port Enhanced Comm Board (3335 only)	396807-12-7-EXCH	\$816	A
CW_35 - 4 Port Enhanced Comm Board (3335 only)	396807-11-9-EXCH	\$1,061	A
Comm Credit - credit issued upon return of 3335 comm card	3335COMM-CREDIT	(\$150)	
Note 1: Upgrade/Exchange kits require a PO for the full published list price less discount. The customer will be invoiced for this full list, less the discount. Upon return of the old CPU, MFIB, and comm boards, a credit will be issued for Returned Credit Value.			
Note 2: BIP port cable not included with CW_30 CPU. Order BIP port cable (P/N 621529-01-0-kit \$91) when upgrading CPU that do not already have the BIP cable. For example 3330 186 (with no BIP ports) or 386 Real Mode CPUs with BIP ports on the CPU.			
Note 3: Existing 33xx COMMUNICATION CARDS are not compatible with the CW_XX CPUs. COMMUNICATION CARDS must be upgraded with the CW_XX COMMUNICATION CARDS.			
Note 4: CW_XX CPUs and COMM cards are FM APPROVED for Class 1, Div. 2 Hazardous Installations.			

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REVISION HISTORY

Date	Changes
4-Jan-11	Initial release of Consolidated Price book.
27-Jan-11	Changed CPU from segment 20 to 30 and power supply from segment 30 to 40.
30-Mar-11	Added items on ControlWave PAC: Segment 20 - Part no: CW-B1 (page 1); CW-FF72 to 84 (page 3).
30-Mar-11	Added items on ControlWave Micro: Segment 60 & 70 - Part no: CWM-HH62 to 74 (page 16).
5-Apr-11	Added items on ControlWave Express: Spec Sheet: 420DS-6C in Segment 10 (page 26). added new item - Segment 70: 420DS-5L (page 26).
6-Apr-11	Changed SELECT HI to H on Seg 60 (page 26).
22-Jul-11	Update prices on price pages for October 2011 price increase.
29-Aug-11	Deleted: Part Numbers: BB-16AI2H, BB-8AI2-4AO2-H, BB-16DO2-H, BB8-DI2-8A12-H, BB-8CNT-U BB-8INS-U, BB-4RTD-4D12-U, BB-16AI2-M, BB-8AI2-4AO2-M, BB-16DI2-M BB-16DO2-M, BB-8DI2-8DO2-M, BB-8DI2-8AI2-M, BB-8CNT-M, BB-8INS-M BB-4RTD-4DI2-M.
2-Sep-11	Changed Spec: 420DS-5L to CWMICRO-SM Added: Station Manager Application and Station Manager XT Application on SEG 39. Note: 4 on page 12. ControlWave Applications: SOFTWARE USER LICENSE on page 23. Rosemount 1420 Wireless Gateway: 3.6% price increase.
7-Sep-11	Added: Selection to ControlWave FOUNDATION Fieldbus Interface Segment 10, 20 and 30 page 25.
21-Oct-11	Price change - Part numbers: CWM-HH15 - \$1102 to \$1185. CWM-HH28 - \$1220 to \$1303. CWM-HH41 - \$1258 to \$1341. CWM-HH67 - \$1102 to \$1185. CWM-KK15 - \$1102 to \$1185. CWM-KK28 - \$1220 to \$1303. CWM-KK41 - \$1258 to \$1341. CWM-MM15 - \$1102 to \$1185. CWM-MM28 - \$1220 to \$1303. CWM-MM41 - \$1258 to \$1341.
15-Nov-11	Deleted: Power Supplies - Phoenix (PC 493) Part Numbers: V2938581; V2938604; V2938620 Power Supplies - PULS (PC493) - Series Class 1, Div 2 approved Spring clamp terminals Part Numbers: VML30102; VML50102; VML100102; VML30100; VML50100; VML100100 Q-Series Class 1, Div2 - Spring clamp terminals Part Numbers: VQS20241 Deleted Part Numbers: VCS3241; VCS5241; VCS10241 Price change - Part numbers: 398036-00-4 - \$651 to \$250 398036-01-2 - \$242 to \$691

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REVISION HISTORY

Date	Changes
20-Jan-12	<p>Deleted Part Numbers: CWM-HH02 and CWM-HH03 (page 12).</p> <p>Added Part Number: 400131-02-1 Mixed I/O Remote Term Fused (6DIO, 4AI, IAO) (page 21).</p> <p>Deleted Note 3: MDS radio is not compatible with Comm module 396581-01-3.</p>
27-Jan-12	<p>Added: Note 1 & Note 2 (page 2); Note 2 (page 13); Note 3 (page 16); Note 2 (page 18). Note 1 (page 3).</p> <p>Price change: Seg 50 - Selection 00 \$0 to \$20.</p> <p>Deleted: Model & Seg E (page 4) P/N: CWREDCPUCWREDCONF0, CWREDCPUCWREDCONF1</p> <p>Added item: Model & Seg D selection 3 & 4 (page 4)- P/N CWREDCPUCWREDCHASI3, CWREDCPUCWREDCHASI4. Model & Seg A selection 4 (page 5) - P/N CWREDCPUCWREDCPU4</p> <p>Deleted: Model & Seg R (page 6)</p> <p>Price changes: ControlWave PAC Parts and Accessories</p> <p style="padding-left: 40px;">P/N 396391-01-0 \$59 to \$58 396391-02-8 \$79 to \$78 396885-01-2 \$138 to \$136 396292-01-6 \$82 to \$81 395622-02-6 \$160 to \$159 395622-04-2 \$260 to \$258 395622-00-0 \$237 to \$235 396389-04-0 \$44 to \$43 396389-03-1 \$67 to \$66</p> <p>Added: Note 4 (page 20).</p> <p>Added items: ControlWave Micro Spares and Accessories P/N 396582-03-6; 395620-01-5.</p>
1-Mar-12	<p>Added item: Seg E 40 selection 1 Conformal Coating (page 5). Seg R 100 selection 1 Conformal Coating (page 6).</p>
6-Jul-12	<p>Added page: ControlWave Ethernet I/O (page 10).</p>
28-Sep-12	<p>Update prices on price pages for October 2012 price increase.</p>

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OPENENTERPRISE SCADA SERVER SOFTWARE LICENSE

OpenEnterprise SCADA is the RAS HOST software product to monitor and control RAS RTU's and flow computers. It is designed to operate on a Microsoft Windows™ environment in a simplex or redundant configuration.

OESL (PC857)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
A		OpenEnterprise SCADA Server				
10		OE Server - Stand Alone (Note 1, Note 2, Note 3)				
		Server already exists.	N/A	0	\$0	A
10		RAS Device drivers (BSAP,ROC),Communications management, Real time and Historical data storage, Data server for HMI's, redundancy support.	N/A	1	\$24,003	A
B		OE Server Standby				
20		None	N/A	0	\$0	A
		Hot standby OE Server - requires segment 10	N/A	1	\$20,066	A
C		OpenEnterprise Communications				
30		OE OPC Client RDI				
		None	N/A	0	\$0	A
30		Permits OpenEnterprise Server to collect data from a 3rd Party OPC DA 2.05 Server.	N/A	1	\$2,242	A
D		OpenEnterprise Server Utilities				
40		OE Report Suite				
		None	N/A	0	\$0	A
40		Report template develop, publish and distribute kit. Includes Excel Plugin & the report scheduler/config tool.	N/A	1	\$10,401	A
E		OE Messaging				
50		None	N/A	0	\$0	A
		OE Alarm paging and email alerts.	N/A	1	\$2,247	A
F		OE WebToolkit Server				
60		None	N/A	0	\$0	A
		WebToolkit: Web server development kit.	N/A	1	\$5,940	A
G		OE WebToolkit Server Connections				
70		OE WebToolkit Clients (Note 4)				
		1 Concurrent user	N/A	1	\$3,079	A
		5 Concurrent user	N/A	2	\$15,398	A
		10 Concurrent user	N/A	3	\$24,637	A
		20 Concurrent user	N/A	4	\$36,956	A
		50 Concurrent user	N/A	5	\$76,992	A
	Unlimited Concurrent users	N/A	6	\$153,983	A	

Note 1: Includes entitlement to OE upgrades and product support for the 1 year duration from time of purchase (Receipt of purchase order).

Refer to support contract for definition of the scope of support and the terms and conditions (OE Product support contract VAPR2011).

Note 2: 30 Day license included with Media with a restriction of 26 tags on the displays. Online registration required for full license activation.

Note 3: OE Server segment is dispatched with an OE install media (DVD).

Note 4: Requires WebToolkit (Web Server) on OE Server options.

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OPENENTERPRISE SCADA CLIENT SOFTWARE LICENSE

The workstation components of OpenEnterprise includes the Thick client side licenses for the HMI functionality.

OECL (PC 857)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.	
A		OE Workstation Thick clients					
		OE Graphics Black Dongle (Note 1, Note 5)					
	10		Operator Workstation license - Quantity 1	N/A	1	\$7,790	A
			Operator Workstation license - Quantity 2	N/A	2	\$15,581	A
			Operator Workstation license - Quantity 3	N/A	3	\$23,370	A
			Operator Workstation license - Quantity 4	N/A	4	\$31,161	A
			Operator Workstation license - Quantity 5	N/A	5	\$38,951	A
			Operator Workstation license - Quantity 6	N/A	6	\$46,742	A
			Operator Workstation license - Quantity 7	N/A	7	\$54,531	A
			Operator Workstation license - Quantity 8	N/A	8	\$62,322	A
			Operator Workstation license - Quantity 9	N/A	9	\$70,112	A
		Operator Workstation license - Quantity 10	N/A	10	\$77,903	A	
B		OE Terminal Clients (Note 2,3,4)					
	20		5 Concurrent Users	N/A	5	\$24,189	A
			6 Concurrent Users	N/A	6	\$25,834	A
			7 Concurrent Users	N/A	7	\$30,140	A
			8 Concurrent Users	N/A	8	\$34,445	A
			10 Concurrent Users	N/A	10	\$37,735	A
			15 Concurrent Users	N/A	15	\$56,603	A
			20 Concurrent Users	N/A	20	\$75,470	A
		25 Concurrent Users	N/A	25	\$94,338	A	

Note 1: For use ONLY with OE 2.82 and later (Graphworx 8.1 to 9.2).

Note 2: Quantities accepted is 5 to max 25 per key. One key ordered per model string.

Note 3: OETS minimum licenses per key = 5

Note 4: Each OpenEnterprise Terminal Services license requires a single Microsoft Terminal Services CAL.

Note 5: OpenEnterprise workstations will have 30 day trial period on initial install. This is restricted to 26 viewable tags.

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OPENENTERPRISE SCADA PARTS

OE Parts to support Upgrade and legacy systems.

DESCRIPTION	PART NO.	LIST PRICE	CAT.
OpenEnterprise Workstation Support Components			
OE Graphics Unactivated Black Dongle (Note 1)			
Unlicensed dongle for upgrade or replacement	395065-00-3	\$413	
OE Graphics Blue Dongle activated (Note 2)			
Workstation license	396827-01-2	\$6,404	
OE Graphics Blue Dongle shell only (Note 3)			
Dongle replacement	396827-02-0	\$413	
<p>Note 1: For use ONLY with OE 2.82 and later (Graphworx 9.2 or earlier). Used in upgrade process from Blue dongle.</p> <p>Note 2: For use ONLY with OE 2.81 and earlier (Graphworx 9.1 and earlier).</p> <p>Note 3: Normally used to upgrade from Parallel port keys, or to replace a broken USB carrier. For use ONLY with OE 2.81 and earlier (Graphworx 9.1 and earlier).</p> <p>Black Key/GWX 9.1x (XP, Win2008).</p> <p>Black Key/GWX 9.2x (XP, Win7, Win2008).</p>			

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OPENENTERPRISE SCADA SERVER UPGRADE PLAN

The Upgrade Plan is available to customers who require the latest release of OpenEnterprise software and ARE NOT covered by

1. First year cover from initial purchase of the license.
2. Annual support plan.

The Upgrade plan provides customers the following services:

1. Entitlement of the latest major release of OpenEnterprise for the calendar year of the upgrade.
2. Product information telephone support, during office hours, for Open Enterprise for the calendar year of the upgrade.
3. Customer is entitled to enroll into the Customer Annual Support Plan at the calendar expiry of the Upgrade plan.

Note 1: Upgrades must be applied to all components, partial upgrades will not be allowed and will invalidate the support.
Note 2: The Upgrade plan does not include for any engineering time to implement upgrades. This can be quoted separately.
Note 3: Product support and access to upgrade media commences on receipt and approval of purchase order.
Note 4: The option to take up a support contract is available on completion of the upgrade contract (1 year after purchase). This must occur within 4 weeks of expiry or an upgrade charge will apply.
Note 5: Refer to support contract for definition of the scope of support and the terms and conditions (OE Product support contract VAPR2011).

OpenEnterprise SCADA is the RAS HOST software product to monitor and control RAS RTU's and flow computers. It is designed to operate on a Microsoft Windows™ environment in a standalone or redundant configuration.

OESS

(PC 857)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
A		OpenEnterprise SCADA Server				
10		OE Server - Stand Alone (Note 1, Note 2, Note 3)				
		Server already exists.	N/A	0	\$0	A
		RAS Device drivers (BSAP,ROC),Communications management, Real time and Historical data storage, Data server for HMI's, redundancy support. Includes OpenBSI Upgrade.	N/A	1	\$19,202	A
B		OE Server Standby				
20		None	N/A	0	\$0	A
		Hot standby OE Server - requires segment 10	N/A	1	\$16,009	A
C		OpenEnterprise Communications				
30		OE OPC Client RDI				
		None	N/A	0	\$0	A
		Permits OpenEnterprise Server to collect data from a 3rd Party OPC DA 2.05 Server.	N/A	1	\$1,793	A
D		OpenEnterprise Server Utilities				
40		OE Report Suite				
		None	N/A	0	\$0	A
		Report template develop, publish and distribute kit. Includes Excel Plugin & the report scheduler/config tool.	N/A	1	\$8,321	A
E		OE Messaging				
50		None	N/A	0	\$0	A
		OE Alarm paging and email alerts.	N/A	1	\$1,797	A
F		OE WebToolkit Server				
60		None	N/A	0	\$0	A
		WebToolkit: Web server development kit.	N/A	1	\$4,752	A

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OPENENTERPRISE SCADA SERVER UPGRADE PLAN (Cont.)

OESS

(PC 857)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
G		OE WebToolkit Server Connections				
		OE WebToolkit Clients (Note 4)				
70		1 Concurrent user	N/A	1	\$2,463	A
		5 Concurrent user	N/A	2	\$12,319	A
		10 Concurrent user	N/A	3	\$19,709	A
		20 Concurrent user	N/A	4	\$29,565	A
		50 Concurrent user	N/A	5	\$61,594	A
		Unlimited Concurrent users	N/A	6	\$123,186	A
<p>Note 1: Includes entitlement to OE upgrades and product support for the 1 year duration from time of purchase (Receipt of purchase order). Refer to support contract for definition of the scope of support and the terms and conditions (OE Product support contract VAPR2011).</p> <p>Note 2: 30 Day license included with Media with a restriction of 26 tags on the displays. Online registration required for full license activation.</p> <p>Note 3: OE Server segment is dispatched with an OE install media (DVD).</p> <p>Note 4: Requires WebToolkit (Web Server) on OE Server options.</p>						

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OPENENTERPRISE SCADA CLIENT UPGRADE PLAN

The work station components of OpenEnterprise includes the Thick client side licenses for the HMI functionality.

OECS		(PC 857)				
MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
A		OE Workstation Thick clients				
		OE Graphics Black Dongle (Note 1, Note 5)				
10		Workstation license	N/A	1	\$6,232	A
		Workstation license	N/A	2	\$12,464	A
		Workstation license	N/A	3	\$18,697	A
		Workstation license	N/A	4	\$24,929	A
		Workstation license	N/A	5	\$31,161	A
		Workstation license	N/A	6	\$37,393	A
		Workstation license	N/A	7	\$43,625	A
		Workstation license	N/A	8	\$49,858	A
		Workstation license	N/A	9	\$56,090	A
		Workstation license	N/A	10	\$62,322	A
B		OE Terminal Clients (Note 2,3,4)				
20		5 Concurrent Users	N/A	5	\$19,351	A
		6 Concurrent Users	N/A	6	\$20,667	A
		7 Concurrent Users	N/A	7	\$24,112	A
		8 Concurrent Users	N/A	8	\$27,556	A
		10 Concurrent Users	N/A	10	\$30,188	A
		15 Concurrent Users	N/A	15	\$45,282	A
		20 Concurrent Users	N/A	20	\$60,376	A
	25 Concurrent Users	N/A	25	\$75,470	A	

Note 1: For use ONLY with OE 2.82 and later (Graphworx 8.1 to 9.2).
Note 2: Quantities accepted is 5 to max 25 per key. One key ordered per model string.
Note 3: OETS minimum licenses per key = 5
Note 4: Each OpenEnterprise Terminal Services license requires a single Microsoft Terminal Services CAL.
Note 5 : OpenEnterprise workstations will have 30 day trial period on initial install. This is restricted to 26 viewable tags.

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REVISION HISTORY

Date	Changes
1-Oct-11	Initial release of Consolidated Price book.
28-Sep-12	Update prices on price pages for October 2012 price increase.

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OPENBSI UTILITIES SOFTWARE USER LICENSE

OpenBSI is a range of software products for Microsoft Windows™ that provides access to the entire range of Bristol ControlWave and 33xx products. It includes options for communications drivers, diagnostic, data collection tools and OPC & ODBC interfaces.

OpenBSILIC (PC 898)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
10		OpenBSI Utilities CD (Note 6)	N/A		\$34	A
		Hardware Dongle License (Note 7)				
160		USB Dongle for portable license. (Software license via web site registration if segment 160 not ordered)	N/A		\$199	A
A		Programming Software		A		
		ACCOL Workbench				
30		Compiles both Real & Protected Mode loads	N/A		\$2,415	A
		ControlWave Designer with ACCOL III				
40		ControlWave programming with ACCOL III Function Block Library	N/A		\$3,998	A
		Virtual ControlWave for OpenEnterprise				
170		Number of Licenses (Number of PCs licensed for Virtual ControlWave)	N/A		\$1,525	A
		Virtual ControlWave I/O Count per Virtual ControlWave License (Note 8) (Requires OpenEnterprise Server)				
180		2000 I/O points	N/A	1	\$2,287	A
		5000 I/O points	N/A	2	\$4,574	A
		Unlimited I/O points	N/A	3	\$7,622	A

Note 1: Includes automatic upgrades for 1 year.
Note 2: 30 day OpenBSI Software Evaluation CD - P/N 395575-02-8 - Charge to region.
 30 day ControlWave Evaluation Tutorial CD - P/N 395575-06-0 - Charge to region.
Note 3: The User License provides single PC system licensing up to the number specified. Enter the quantity for each segment and apply appropriate discount below. Segments with different quantities may have different discount calculations.

<u>Qty</u>	<u>Discount</u>	<u>Qty</u>	<u>Discount</u>	<u>Qty</u>	<u>Discount</u>	<u>Qty</u>	<u>Discount</u>
2 - 10	20%	11-20	30%	21-30	40%	31 + up	50%

Note 4: Multi-user discounts not available to ASPs.
Note 5: Order by line Segment Numbers, Example Line 1: Segment 20 = 03; \$3195 less 20% = \$2556
 List only the segments numbers to be ordered, Example Line 2: Segment 80 = 03; \$2028 less 20% = \$1622.4
Note 6: Please note that software media CD will only be issued with orders for software. Orders for CD media only will not be accepted.
Note 7: Object Server and Web Toolkit cannot be licensed on a Dongle. They are software licenses only.
Note 8: This is the Quantity of I/O points supported by the Virtual ControlWave license above.

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OPENBSI UTILITIES SOFTWARE USER LICENSE (Cont.)

OpenBSILIC

(PC 898)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
B		OpenBSI Networking Software		B		
		OpenBSI Network Edition				
20		Includes all Basic OpenBSI Utilities for network setup, configuration, calibration, data viewing, file downloading & diagnostics.	N/A		\$1,576	A
80		Harvester				
		Historical Data Collection Tools	N/A		\$1,001	A
		Security Vision				
90		Security Vision utility. Requires ControlWave Designer application function block P/N	N/A		\$1,124	A
		Communication Interfaces		C		
60		OPC Server				
		None	N/A		\$0	
		Object Server (Not available on Dongle)				
110		Communications manager for OPC Server(s) supporting ControlWave and NW3000 products	N/A		\$831	A
		Object Server OPC Interface (Requires Object Server purchase above) (Note 6)				
		1 OPC Server Licenses (to connect to Object Server)	N/A	001	\$831	A
		5 OPC Server Licenses (to connect to Object Server)	N/A	002	\$3,332	A
		10 OPC Server Licenses (to connect to Object Server)	N/A	003	\$6,664	A
		20 OPC Server Licenses (to connect to Object Server)	N/A	004	\$11,660	A
		50 OPC Server Licenses (to connect to Object Server)	N/A	005	\$24,988	A
		Unlimited Client license	N/A	006	\$49,974	A

Note 1: Includes automatic upgrades for 1 year.

Note 2: 30 day OpenBSI Software Evaluation CD - P/N 395575-02-8 - Charge to region.

30 day ControlWave Evaluation Tutorial CD - P/N 395575-06-0 - Charge to region.

Note 3: The User License provides single PC system licensing up to the number specified. Enter the quantity for each segment and apply appropriate discount below. Segments with different quantities may have different discount calculations.

<u>Qty</u>	<u>Discount</u>	<u>Qty</u>	<u>Discount</u>	<u>Qty</u>	<u>Discount</u>	<u>Qty</u>	<u>Discount</u>
2 - 10	20%	11-20	30%	21-30	40%	31 + up	50%

Note 4: Multi-user discounts not available to ASPs.

Note 5: Order by line Segment Numbers, Example Line 1: Segment 20 = 03; \$3195 less 20% = \$2556

List only the segments numbers to be ordered, Example Line 2: Segment 80 = 03; \$2028 less 20% = \$1622.4

Note 6: Individual OPC SERVERS (DA, Alarm & Event) can be purchased to connect locally or remotely to the Object Server - Communications manager.

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OPENBSI UTILITIES SOFTWARE USER LICENSE (Cont.)

OpenBSILIC

(PC 898)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
D		Object Server and OE Utility options		D		
130		Alarm Paging (not available yet) (Not available on Dongle)				
		Requires Object Server or OE	N/A	0		A
140		Web Toolkit Server (Requires Object Server purchase above or OE)				
		Requires Object Server or OE (Not available on Dongle)	N/A	001	\$3,641	A
		Web Toolkit Connection (Note 6)				
		1 Client license	N/A	001	\$831	A
		5 Client licenses	N/A	002	\$3,332	A
150		10 Client licenses	N/A	003	\$6,664	A
		20 Client licenses	N/A	004	\$11,660	A
		50 Client licenses	N/A	005	\$24,988	A
		Unlimited Client licenses	N/A	006	\$49,974	A

Note 1: Includes automatic upgrades for 1 year.

Note 2: 30 day OpenBSI Software Evaluation CD - P/N 395575-02-8 - Charge to region.

30 day ControlWave Evaluation Tutorial CD - P/N 395575-06-0 - Charge to region.

Note 3: The User License provides single PC system licensing up to the number specified. Enter the quantity for each segment and apply appropriate discount below. Segments with different quantities may have different discount calculations.

Qty	Discount	Qty	Discount	Qty	Discount	Qty	Discount
2 - 10	20%	11-20	30%	21-30	40%	31 + up	50%

Note 4: Multi-user discounts not available to ASPs.

Note 5: Order by line Segment Numbers, Example Line 1: Segment 20 = 03; \$3195 less 20% = \$2556

List only the segments numbers to be ordered, Example Line 2: Segment 80 = 03; \$2028 less 20% = \$1622.4

Note 6: This is the Quantity of I/O points supported by the Virtual ControlWave license above.

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OPENBSI UTILITIES SOFTWARE UPGRADE PLANS

OpenBSI is a range of software products for Microsoft Windows™ that provides access to the entire range of Bristol ControlWave and 33xx products. It includes options for communications drivers, diagnostic, data collection tools and OPC & ODBC interfaces.

OpenBSISS

(PC 899)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
10		OpenBSI Utilities CD (Note 6)	N/A		\$0	A
A		Programming Software		A		
30		ACCOL Workbench				
		Compiles both Real & Protected Mode loads	N/A		\$965	A
40		ControlWave Designer with ACCOL III (Note 1)				
		ControlWave programming with ACCOL III Function Block Library	N/A		\$1,598	A
170		Virtual ControlWave for OpenEnterprise (Not yet available)				
		Number of Licenses (Number of PCs licensed for Virtual ControlWave)	N/A		\$610	A
180		Virtual ControlWave I/O Count per Virtual ControlWave License (Note 7) (Requires OpenEnterprise Server) (Not yet available)				
		2000 I/O points	N/A	001	\$915	A
		5000 I/O points	N/A	002	\$1,829	A
		Unlimited I/O points	N/A	003	\$3,050	A

Note 1: Includes automatic upgrades for 1 year.

Note 2: 30 day OpenBSI Software Evaluation CD - P/N 395575-02-8 - Charge to region.

30 day ControlWave Evaluation Tutorial CD - P/N 395575-06-0 - Charge to region.

Note 3: The User License provides single PC system licensing up to the number specified. Enter the quantity for each segment and apply appropriate discount below. Segments with different quantities may have different discount calculations.

Qty	Discount	Qty	Discount	Qty	Discount	Qty	Discount
2 - 10	20%	11-20	30%	21-30	40%	31 + up	50%

Note 4: Multi-user discounts not available to ASPs.

Note 5: Order by line Segment Numbers, Example Line 1: Segment 20 = 03; \$1317 less 20% = \$1053.6

List only the segments numbers to be ordered, Example Line 2: Segment 80 = 03; \$813 less 20% = \$650.4

Note 6: Order for software media CDs can only be accepted on the OPENBSILIC price book page. Orders for CDs from this price book page will not be accepted.

Note 7: This is the Quantity of I/O points supported by the Virtual ControlWave license above.

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OPENBSI UTILITIES SOFTWARE UPGRADE PLANS (Cont.)

OpenBSISS (PC 899)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
B		OpenBSI Networking Software		B		
		OpenBSI Network Edition				
20		Includes all Basic OpenBSI Utilities for network setup, configuration, calibration, data viewing, file downloading & diagnostics.	N/A		\$650	A
80		Harvester				
		Historical Data Collection Tools	N/A		\$401	A
90		Security Vision				
		Security Vision utility. Requires ControlWave Designer application function block P/N	N/A		\$450	A
C		Communication Interfaces		C		
		Object Server (Not available on Dongle)				
110		Communications manager for OPC Server(s) supporting ControlWave and NW3000 products	N/A		\$333	A
		Object Server OPC Interface (Requires Object Server purchase above) (Note 6)				
120		1 OPC Server License (to connect to Object Server)	N/A	001	\$333	A
		5 OPC Server Licenses (to connect to Object Server)	N/A	002	\$1,331	A
		10 OPC Server Licenses (to connect to Object Server)	N/A	003	\$2,663	A
		20 OPC Server Licenses (to connect to Object Server)	N/A	004	\$4,664	A
		50 OPC Server Licenses (to connect to Object Server)	N/A	005	\$9,996	A
		Unlimited Client licenses	N/A	006	\$19,990	A

Note 1: Includes automatic upgrades for 1 year.

Note 2: 30 day OpenBSI Software Evaluation CD - P/N 395575-02-8 - Charge to region.
30 day ControlWave Evaluation Tutorial CD - P/N 395575-06-0 - Charge to region.

Note 3: The User License provides single PC system licensing up to the number specified. Enter the quantity for each segment and apply appropriate discount below. Segments with different quantities may have different discount calculations.

<u>Qty</u>	<u>Discount</u>	<u>Qty</u>	<u>Discount</u>	<u>Qty</u>	<u>Discount</u>	<u>Qty</u>	<u>Discount</u>
2 - 10	20%	11-20	30%	21-30	40%	31 + up	50%

Note 4: Multi-user discounts not available to ASPs.

Note 5: Order by line Segment Numbers, Example Line 1: Segment 20 = 03; \$1317 less 20% = \$1053.6
List only the segments numbers to be ordered, Example Line 2: Segment 80 = 03; \$813 less 20% = \$650.4

Note 6: Individual OPC SERVERS (DA, Alarm & Event) can be purchased to connect locally or remotely to the Object Server - Communications manager.

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OPENBSI UTILITIES SOFTWARE UPGRADE PLANS (Cont.)

OpenBSISS

(PC 899)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
D		Object Server and OE Utility options		D		
130		Alarm Paging (not available yet)				
		Requires Object Server or OE	N/A	0		A
140		Web Toolkit Server (Requires Object Server purchase above or OE)				
		Requires Object Server or OE	N/A		\$1,500	A
150		Web Toolkit Connection (Note 6)				
		1 Client license	N/A	001	\$333	A
		5 Client licenses	N/A	002	\$1,331	A
		10 Client licenses	N/A	003	\$2,663	A
		20 Client licenses	N/A	004	\$4,664	A
		50 Client licenses	N/A	005	\$9,996	A
		Unlimited Client licenses	N/A	006	\$19,990	A

Note 1: Includes automatic upgrades for 1 year.
Note 2: 30 day OpenBSI Software Evaluation CD - P/N 395575-02-8 - Charge to region.
30 day ControlWave Evaluation Tutorial CD - P/N 395575-06-0 - Charge to region.
Note 3: The User License provides single PC system licensing up to the number specified. Enter the quantity for each segment and apply appropriate discount below. Segments with different quantities may have different discount calculations.

Qty	Discount	Qty	Discount	Qty	Discount	Qty	Discount
2 - 10	20%	11-20	30%	21-30	40%	31 + up	50%

Note 4: Multi-user discounts not available to ASPs.
Note 5: Order by line Segment Numbers, Example Line 1: Segment 20 = 03; \$1317 less 20% = \$1053.6
List only the segments numbers to be ordered, Example Line 2: Segment 80 = 03; \$813 less 20% = \$650.4
Note 6: This is the Quantity of I/O points supported by the Virtual ControlWave license above.

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OPENBSI UTILITIES USB DONGLE

OpenBSI is a range of software products for Microsoft Windows™ that provides access to the entire range of Bristol ControlWave and 33xx products. It includes options for communications drivers, diagnostic, data collection tools and OPC & ODBC interfaces.

OpenBSIHWD

(PC 898)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
10		OpenBSI Utilities CD (Note 5)	N/A		\$0	A
		Hardware Dongle License				
160		USB Dongle for portable license. Replaces existing registered software license	N/A		\$416	A
A		Programming Software		A		
30		ACCOL Workbench				
		Compiles both Real & Protected Mode loads	N/A		\$0	A
40		ControlWave Designer with ACCOL III				
		ControlWave programming with ACCOL III Function Block Library	N/A		\$0	A
170		Virtual ControlWave for OpenEnterprise				
		Number of Licenses (Number of PCs licensed for Virtual ControlWave)	N/A			A
180		Virtual ControlWave I/O Count per Virtual ControlWave License (Note 6) (Requires OpenEnterprise Server) (Not yet available)				
		2000 I/O points	N/A	1		A
		5000 I/O points	N/A	2		A
		Unlimited I/O points	N/A	3		A

Note 1: USB Dongle Requires OpenBSI Version 5.4 SP1 or later.

Note 2: Dongle available to current Software Support Plan members only. Non-members may purchase dongles as part of a Software Upgrade and Support Plan. **Order must be accompanied by customers OpenBSI Customer ID and Password for each license transfer. Each Dongle order requires a separate line item entry.**

Note 3: Multi-user discounts not available to ASPs.

Note 4: Order by line Segment Numbers, Example Line 1: Segment 160 = 1 @ \$281 Customer ID = XXXX Password = XXXX. List only the segments numbers to be ordered, **Example Line 2: Segment 20 & 80 = 1 \$0**

Note 5: Orders for software media CDs can only be accepted on the OPENBSILIC price book page. Orders for CDs from this price book page will not be accepted.

Note 6: This is the Quantity of I/O points supported by the Virtual ControlWave license above.

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OPENBSI UTILITIES USB DONGLE (Cont.)

OpenBSIHWD

(PC 898)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
B		OpenBSI Networking Software		B		
		OpenBSI Network Edition				
20		Includes all Basic OpenBSI Utilities for network setup, configuration, calibration, data viewing, file downloading & diagnostics.	N/A		\$0	A
80		Harvester				
		Historical Data Collection Tools	N/A		\$0	A
90		Security Vision				
		Security Vision utility. Requires ControlWave Designer application function block P/N	N/A		\$0	A
C		Communication Interfaces		C		
60		OPC Server (Last Release with OpenBSI V5.7)				
		OPC Data, Alarm & Event Server	N/A		\$0	A
110		Object Server (Not available on Dongle)				
		Communications manager for OPC Server(s) supporting ControlWave and NW3000 products	N/A		\$0	A
120		Object Server OPC Interface (Requires Object Server purchase above) (Note 5)				
		1 OPC Server License (to connect to Object Server)	N/A	0	\$0	A
		5 OPC Server Licenses (to connect to Object Server)	N/A	0	\$0	A
		10 OPC Server Licenses (to connect to Object Server)	N/A	0	\$0	A
		20 OPC Server Licenses (to connect to Object Server)	N/A	0	\$0	A
		50 OPC Server Licenses (to connect to Object Server)	N/A	0	\$0	A
		Unlimited Client licenses	N/A	0	\$0	A

Note 1: USB Dongle Requires OpenBSI Version 5.4 SP1 or later.

Note 2: Dongle available to current Software Support Plan members only. Non-members may purchase dongles as part of a Software Upgrade and Support Plan. **Order must be accompanied by customers OpenBSI Customer ID and Password for each license transfer. Each Dongle order requires a separate line item entry.**

Note 3: Multi-user discounts not available to ASPs.

Note 4: Order by line Segment Numbers, Example Line 1: Segment 160 = 1 @ \$281 Customer ID = XXXX Password = XXXX. List only the segments numbers to be ordered, **Example Line 2: Segment 20 & 80 = 1 \$0**

Note 5: Individual OPC SERVERS (DA, Alarm & Event) can be purchased to connect locally or remotely to the Object Server - Communications manager.

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OPENBSI UTILITIES USB DONGLE (Cont.)

OpenBSIHWD

(PC 898)

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT	LIST PRICE	CAT.
D		Object Server and OE Utility options		D		
130		Alarm Paging (not available yet) (Not available on Dongle)				
		Requires Object Server or OE	N/A	0		A
140		Web Toolkit Server (Requires Object Server purchase above or OE) (Not available on Dongle)				
		Requires Object Server or OE	N/A	0	\$0	A
150		Web Toolkit Connection (Note 5)				
		1 Client license	N/A	001	\$831	A
		5 Client licenses	N/A	002	\$3,332	A
		10 Client licenses	N/A	003	\$6,664	A
		20 Client licenses	N/A	004	\$11,660	A
		50 Client licenses	N/A	005	\$24,988	A
		Unlimited Client licenses	N/A	006	\$49,974	A

Note 1: USB Dongle Requires OpenBSI Version 5.4 SP1 or later.

Note 2: Dongle available to current Software Support Plan members only. Non-members may purchase dongles as part of a Software Upgrade and Support Plan. **Order must be accompanied by customers OpenBSI Customer ID and Password for each license transfer. Each Dongle order requires a separate line item entry.**

Note 3: Multi-user discounts not available to ASPs.

Note 4: Order by line Segment Numbers, Example Line 1: Segment 160 = 1 @ \$281 Customer ID = XXXX Password = XXXX. List only the segments numbers to be ordered, **Example Line 2: Segment 20 & 80 = 1 \$0**

Note 5: This is the Quantity of I/O points supported by the Virtual ControlWave license above.

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REVISION HISTORY

Date	Changes
4-Jan-11	Initial release of Consolidated Price book.
25-Jan-11	Page 2 SEG 60 - changed OPC Data, Alarm & Event Server to None - This OPC Server is no longer available. Use Object Server. OPC Server price changed from \$2,281 to \$0.
31-May-11	Price change on segment 170 \$278 to \$574.
4-Aug-11	Update prices on price pages for October 2011 price increase.
28-Sep-12	Update prices on price pages for October 2012 price increase.

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The following table identifies list price for RTU Emerson Control Wave technical services provided by Emerson Process Management Power & Water Solutions, Inc (Emerson). The list price is current as of January 1, 2013 and is based on a one hour bases during normal business hours (8:00 a.m. to 5:00 p.m.). The rate does not include travel and living expenses, which will be billed at cost plus 10%.

Table 1: Technical Services List Prices

Description	List Price (per hour)
Field Engineer (per hour)	\$223.00
Field Engineer (per hour) Overtime (weekends and Saturday)	\$336.00
Field Engineer (per hour) Overtime (Sundays and Holidays)	\$446.00

Emerson reserves the right to make periodic changes to these list prices and will provide notification in writing of such changes.