ControlWave Remote Automation Solutions

D301700X012

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	SPEC			
& SEG	SHEET	DESCRIPTION	APPROVAL	SELECT
Α		Base Housing (Note 4)		Α
		None	UL	0
		3 slot panel mount base		
		PSSM, CPU & 1 slot for I/O, No Comm Exp	UL	1
10	420DS-5L	4 slot panel mount base		
		PSSM, CPU & 2 slots for Exp Comm or I/O	UL	2
		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
В		I/O Expansion Base (Note 4)		В
		None	UL	0
20	420DS-5L	2 I/O slot panel mount exp base, Up to 2 I/O modules	UL	1
		4 I/O slot panel mount exp base, Up to 4 I/O modules	UL	2
		8 I/O slot panel mount exp base, Up to 8 I/O modules	UL	3
CC		CPU Module (Slot #2) (Note 2)		CC
	420DS-5L		UL	00
		Micro 33 CPU With Gas Calcs		
	420DS-5L	33MHz CPU/2M SR,64M SDR,16M Flash		
		0 - ENET & 2 - RS 232, & 1 RS 485	UL	01
		Micro 33 CPU Without Gas Calcs		
	420DS-5L	33MHz CPU/2M SR,64M SDR,16M Flash		
		0 - ENET & 2 - RS 232, & 1 RS 485	UL	02
		Micro 150 CPU With Gas Calcs		
		150MHzCPU/2M SR, 64M SDR, 16M Flash		
		0 - ENET & 2 - RS 232 & 1 RS 485	UL	04
30	420DS-5L	150MHzCPU/1M SR, 64M SDR, 16M Flash		
		1 - ENET & 2 - RS 232 & 1 RS 485	UL	05
		150MHzCPU/2M SR, 64M SDR, 16M Flash		
		2 - ENET & 1 - RS 232 & 1 RS 485	UL	06
		Micro 150 CPU Without Gas Calcs		
		150MHzCPU/2M SR, 64M SDR, 16M Flash		
	420DS-5L	1 - ENET & 2 - RS 232 & 1 RS 485	UL	07
		150MHzCPU/2M SR, 64M SDR, 16M Flash		
		2 - ENET & 1 - RS 232 & 1 RS 485	UL	08
		Micro Distributed I/O Expansion CPU		
	420DS-5L	Comm CPU		
		1 - ENET & 2 - RS 232, & 1 RS 485	UL	09
- <u>RR</u> - <u>S</u> Note 1: (<u>55</u> - <u>TT</u> - <u>U</u> One I/O Expa	M - A - B - CC - DD - E - F - G - HH - JJ - KK - LL U - VV - WW - X ansion Base allowed with 12-24 V System Controller. Up to n Controller I/O Limit - Up to 6 I/O modules maximum (2 iso	6 I/O modules max	imum with 6
	-	is non-isolated.		nanmum).
			look 1/0 module fre	-
iote 4: (Junisea I/O S	slots 3-14 of configured ControlWave Micro model include b	iank i/O module fro	ms.

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT
DD		Embedded Application		DD
		None	UL	00
39	CWMICRO:SM	Station Manager Application (Note 4)	UL	01
		Station Manager XT Application (Note 4)	UL	02
Е		Internal Power Supply Module (Slot#1) (Note 1)		E
		None	UL	0
		6 - 18 V input power System Controller		
		With display interface, with wet-end interface	UL	1
40	420DS-5L	12 - 24 V Syst. Cont., w/o key lock & WD		
		With display interface, no wet-end interface	UL	2
		12 - 24 V Syst. Cont., with key lock & WD		
		With display interface, no wet-end interface	UL	3
F		Approval		F
45	420DS-5L	Without CE approval	UL	0
40	420D3-3L	CE approval; CE foil shield and labels	UL/CE	1
G		Display (Keypad buttons)		G
		None	UL	0
		Display - 4 line X 20 character		
50	420DS-5L	2 buttons. Also includes 2' display cable	UL	1
		Display/Keypad - 4 line X 20 character		
		25 button keypad. Also includes 2' cable	UL	2
HH & JJ		I/O & COMM Slot #3 & #4 (Note 3)		HH & JJ
		Comm Expansion Module		
		None	UL	00
		2 Port Comm module, isolated RS 485		
60 & 70		1 - RS232 & 1 - Isolated RS 485	UL	01
00 0 10	420DS-5L	2 Port Comm module Dial-line modem,		
		1 - RS232 & 1 - Isolated RS 485 (Note 4)	UL	04
		4 Port Comm		
		2 - RS232, 2 - isolated RS 485	UL	05

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.

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

© Remote Automation Solutions, a division of Emerson Process Management, 2002-2011; All Rights Reserved.

ControlWave	Micro	(Cont.)
-------------	-------	---------

CWM

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT
HH & JJ	SHELT	I/O & COMM Slot #3 & #4	ATTROVAL	HH & JJ
111 & 55		Local Termination I/O Modules		111 & 55
		Mixed 12 DI, 4 DO with LEDs		
		Non-Isolated internally sourced dry contact	UL	06
		Isolated, Mixed 12 DI, 4 DO with LEDs	02	
		Isolated, Int. or Ext. sourced dry contact	UL	07
		16 DI with LEDs (24 VDC Input)		
		Isolated, Int. or Ext. sourced dry contact	UL	08
		16 DI with LEDs (12 VDC Input), Ext. sourced	UL	09
		8 DI with LEDs (120 - 240 VAC Input)		
		Isolated externally sourced voltage input	N/A	10
		16 DO with LEDs; 1/2 Amp Open source output	UL	11
		8 DO with LEDs (120 - 240 VAC Output) (Note 1)		
		6A Relay @ 120 VAC externally sourced	N/A	12
		6 Al (Note 2) Externally sourced 1-5 V or 4-20 mA	UL	13
60 & 70	420DS-5L	Mixed 6 AI, 2 AO (Note 2)		
	420D3-3L	Externally sourced 1-5 V or 4-20 mA	UL	14
		Isolated AI, 8 inputs (180V CM), Int or Ext sourced 1-5 V or 4-		
		20 mA	UL	15
		6 TC, B, R, S, J, E, K, T, C, N, <u>+</u> 10 mV	UL	16
		4 RTD, 2, 3, or 4 wire platinum RTD	UL	17
		Isolated AO, 4 outputs		
		Int or Ext sourced 1-5 V or 4-20 mA	UL	18
		4 HSC with LEDs, Hi / Low Speed Counters	UL	19
		8 HART/BTI (Note 3)		
		HART, BTI, AI, AO. Int/Ext sourced Als	UL	20
		Mixed 6 DIO, 4 AI, 2 HSC with LEDS	10	04
		Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	21
		Mixed 6 DIO, 4 AI, 2 HSC, 1 AO with LEDS		00
		Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	22

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.

© Remote Automation Solutions, a division of Emerson Process Management, 2002-2011; All Rights Reserved.

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

ControlWave M	Micro (Cont.)
----------------------	---------------

CWM

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECI
HH & JJ		I/O & COMM Slot #3 & #4	ATTROTAL	HH & JJ
		Remote Termination I/O Modules with		
		Remote Terminal Blocks (No Fuses)		
		Mixed 12 DI, 4 DO with LEDs		
		Non-Isolated internally sourced dry contact	N/A	23
		16 DI with LEDs		
		Isolated, Int. or Ext. sourced dry contact	N/A	24
		16 DO with LEDs, .5 Amp Open source output	N/A	25
		6 Al (Note 1), Externally sourced 1-5 V or 4-20 mA	N/A	26
		Mixed 6 AI, 2 AO		1
		Externally sourced 1-5 V or 4-20 mA	N/A	27
	420DS-5L	Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20		
		mA	N/A	28
		6 TC, B, R, S, J, E, K, T, C, N, <u>+</u> 10 mV	N/A	29
		4 RTD, 2, 3, or 4 wire platinum RTD	N/A	30
		Isolated AO, 4 outputs		
		Int or Ext sourced 1-5 V or 4-20 mA	N/A	31
		4 HSC with LEDs, Hi / Low Speed Counters	N/A	32
		8 HART/BTI		
		HART, BTI, AI, AO. Int/Ext sourced AIs (Note 1)	N/A	33
60 & 70		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
		16 DO with LEDs, .5 Amp Open source output	N/A	38
		6 AI Externally sourced 1-5 V or 4-20 mA	N/A	39
		Mixed 6 AI, 2 AO (Note 1)	N/A	10
		Externally sourced 1-5 V or 4-20 mA	N/A	40
		Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20		
		mA	N/A	41
		Isolated AO, 4 outputs		
	420DS-5L	Int or Ext sourced 1-5 V or 4-20 mA	N/A	44
		8 HART/BTI (Note 1)	N 1/A	
		HART, BTI, AI, AO. Int/Ext sourced Als	N/A	46
		Mixed 6 DIO, 4 AI, 2 HSC, With LEDS	N 1/A	
		Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	47
		Mixed 6 DIO, 4 AI, 2 HSC, 1 AO, With LEDS	N1/A	10
		Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	48
		16 DI With 120VAC Remote Terminal Block (NO FUSES)	N/A	60
		16 DO With 120VAC Remote Terminal Block		
	1	6Amp RELAY (NO FUSES)	N/A	61

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT
		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
		16 DI with LEDs		
		Isolated, Int. or Ext. sourced dry contact	N/A	63
		16 DO with LEDs, .5 Amp Open source output	N/A	64
		6 AI (Note 1), Externally sourced 1-5 V or 4-20 mA	N/A	65
		Mixed 6 AI, 2 AO (Note 1)		
		Externally sourced 1-5 V or 4-20 mA	N/A	66
		Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-		
60 & 70		20 mA	N/A	67
	420DS-5L	6 TC, B, R, S, J, E, K, T, C, N, <u>+</u> 10 mV	N/A	68
		4 RTD, 2, 3, or 4 wire platinum RTD	N/A	69
		Isolated AO, 4 outputs		
		Int or Ext sourced 1-5 V or 4-20 mA	N/A	70
		4 HSC with LEDs, Hi / Low Speed Counters	N/A	71
		8 HART/BTI (Note 2)		
		HART, BTI, AI, AO. Int/Ext sourced Als	N/A	72
		Mixed 6 DIO, 4 AI, 2 HSC, With LEDS		
		Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	73
		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
	•	d Als on the mixed I/O cards require external wiring for the 24V der r are provided on the I/O card for AOs only.	vice power. Term	inal block

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

 ${\small @ {\it Remote Automation Solutions, a division of Emerson Process Management, {\it 2002-2011}; {\it All Rights Reserved}.} }$

installed in a ControlWave Micro chassis.

ControlWave Mi	cro (Cont.)
-----------------------	-------------

MODEL &	SPEC			
SEG	SHEET	DESCRIPTION	APPROVAL	SELECT
KK & LL		I/O Slot #5 & #6		KK & LL
	420DS-5L	None	N/A	00
		Local Termination I/O Modules		
		Mixed 12 DI, 4 DO with LEDs		
		Non-Isolated internally sourced dry contact	UL	06
		Isolated, Mixed 12 DI, 4 DO with LEDs		
		Isolated, Int. or Ext. sourced dry contact	UL	07
		16 DI with LEDs (24 VDC Input)		
		Isolated, Int. or Ext. sourced dry contact	UL	08
		16 DI with LEDs (12 VDC Input), Ext. sourced	UL	09
		8 DI with LEDs (120 - 240 VAC Input)		
		Isolated externally sourced voltage input	N/A	10
		16 DO with LEDs, 1/2 Amp Open source output	UL	11
		8 DO with LEDs (120 - 240 VAC Output)		
		6A Relay @ 120 VAC externally sourced (Note 1)	N/A	12
80 & 90		6 AI, Externally sourced 1-5 V or 4-20 mA (Note 2)	UL	13
00 & 90	420DS-5L	Mixed 6 AI, 2 AO		
	420D3-5L	Externally sourced 1-5 V or 4-20 mA (Note 2)	UL	14
		Isolated AI, 8 inputs (180 V CM)		
		Int or Ext sourced 1-5 V or 4-20 mA	UL	15
		6 TC, B, R, S, J, E, K, T, C, N <u>+</u> 10 mV	UL	16
		4 RTD, 2, 3, or 4 wire platinum RTD	UL	17
		Isolated AO, 4 outputs		
		Int or Ext sourced 1-5 V or 4-20 mA	UL	18
		4 HSC with LEDs, Hi / Low Speed Counters	UL	19
		8 HART/BTI		
		HART, BIT, AI, AO. INT/EXT SOURCED AIS (NOTE 3)	UL	20
		Mixed 6 DIO, 4 AI, 2 HSC, with LEDS		
		Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	21
		Mixed 6 DIO, 4 AI, 2 HSC, 1 AO, with LEDS		
		Dry contact DI, Ext. sourced 1-5V or 4-20mA	UL	22
Note 1: 8 Poin	t 120VAC DI 8	DO Card cannot be used in the first slot of the I/O Expansion C	Chassis. 120VAC I	DI & DO
modules are n				

modules are not class 1, Div 2 approved.

Note 2: The externally sourced Als 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.

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.

© Remote Automation Solutions, a division of Emerson Process Management, 2002-2011; All Rights Reserved.

CWM

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELEC
KK & LL		I/O Slot #5 & #6		KK & L
		Remote Termination I/O Modules with		
		Remote Terminal Blocks (No Fuses)		
		Mixed 12 DI, 4 DO with LEDs		
		Non-Isolated internally sourced dry contact	N/A	23
		16 DI with LEDs, Isolated, Int. or Ext. sourced dry contact	N/A	24
		16 DO with LEDs, .5 Amp Open source output	N/A	25
		6 AI, Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	26
		Mixed 6 AI, 2 AO		
		Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	27
	420DS-5L	Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20		
		mA	N/A	28
		6 TC; B, R, S, J, E, K, T, C, N, <u>+</u> 10 mV	N/A	29
		4 RTD; 2, 3, or 4 wire platinum RTD	N/A	30
		Isolated AO, 4 outputs		
		Int or Ext sourced 1-5 V or 4-20 mA	N/A	31
		4 HSC with LEDs, Hi / Low Speed Counters	N/A	32
		8 HART/BTI HART, BTI, AI, AO. Int/Ext sourced Als (Note 2)	N/A	33
00 8 00		Remote Termination I/O Modules with		
80 & 90		Remote Terminal Blocks (With Fuses)		
		16 DI with LEDs, Isolated, Int. or Ext. sourced dry contact	N/A	37
		16 DO with LEDs, .5 Amp Open source output	N/A	38
		6 AI, Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	39
		Mixed 6 AI, 2 AO		
		Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	40
		Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20		
		mA	N/A	41
		Isolated AO, 4 outputs		
	420DS-5L	Int or Ext sourced 1-5 V or 4-20 mA	N/A	44
		8 HART/BTI HART, BTI, AI, AO. Int/Ext sourced AIs (Note 2)	N/A	46
		Mixed 6 DIO, 4 AI, 2 HSC, With LEDS		
		Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	47
		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
		16 DI With 120VAC Remote Terminal Block (NO FUSES)	N/A	60
		16 DO With 120VAC Remote Terminal Block 6Amp RELAY (NO		
		FUSES)	N/A	61
		d Als on the mixed I/O cards require external wiring for the 24V devi	ce power. Termir	al block
nnections fo	or the field powe	r are provided on the I/O card for AOs only.		

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

 ${\small @ {\it Remote Automation Solutions, a division of Emerson Process Management, {\it 2002-2011}; {\it All Rights Reserved}.} }$

COM & I/O Slot #7 through #16 None Local Termination I/O Modules Mixed 12 DI, 4 DO with LEDs Non-Isolated internally sourced dry Isolated, Mixed 12 DI, 4 DO with L Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (24 VDC Input) Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (12 VDC Input), E 8 DI with LEDs (120 - 240 VAC Inp Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so	EDs intact UL intact UL intact UL intact UL intact UL input UL input UL input UL input UL intact Intact Inta	MM - VV 00 06 07 08 09 10 11 11 12
Local Termination I/O Modules Mixed 12 DI, 4 DO with LEDs Non-Isolated internally sourced dry Isolated, Mixed 12 DI, 4 DO with L Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (24 VDC Input) Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (12 VDC Input), E 8 DI with LEDs (120 - 240 VAC Inp Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally sourced 1-5 V or 4	r contact UL EDs Intact UL Intact Intact UL Intact Intact UL Intact Intact In	06 07 08 09 10 11 12
Mixed 12 DI, 4 DO with LEDs Non-Isolated internally sourced dry Isolated, Mixed 12 DI, 4 DO with L Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (24 VDC Input) Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (12 VDC Input), E 8 DI with LEDs (120 - 240 VAC Inp Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	EDs UL intact UL intact UL intact UL input UL input UL input UL input UL input UL input UL input UL input UL	07 08 09 10 11 12
Non-Isolated internally sourced dry Isolated, Mixed 12 DI, 4 DO with L Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (24 VDC Input) Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (12 VDC Input), E 8 DI with LEDs (120 - 240 VAC Inp Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	EDs UL intact UL intact UL intact UL input UL input UL input UL input UL input UL input UL input UL input UL	07 08 09 10 11 12
Isolated, Mixed 12 DI, 4 DO with L Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (24 VDC Input) Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (12 VDC Input), E 8 DI with LEDs (120 - 240 VAC Inp Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	EDs UL intact UL intact UL intact UL input UL input UL input UL input UL input UL input UL input UL input UL	07 08 09 10 11 12
Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (24 VDC Input) Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (12 VDC Input), E 8 DI with LEDs (120 - 240 VAC Inp Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	Intact UL Intact Intact Internation Intact	08 09 10 11 12
16 DI with LEDs (24 VDC Input) Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (12 VDC Input), E 8 DI with LEDs (120 - 240 VAC Inp Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	intact UL xt. sourced UL put) input UL source output UL tput) purced (Note 1) UL	08 09 10 11 12
Isolated, Int. or Ext. sourced dry co 16 DI with LEDs (12 VDC Input), E 8 DI with LEDs (120 - 240 VAC Input) Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally sourced 6 AI, Externally sourced 1-5 V or 4	xt. sourced UL out) input UL source output UL tput) purced (Note 1) UL	09 10 11 12
16 DI with LEDs (12 VDC Input), E 8 DI with LEDs (120 - 240 VAC Input) Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	xt. sourced UL out) input UL source output UL tput) purced (Note 1) UL	09 10 11 12
8 DI with LEDs (120 - 240 VAC Inp Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	ut) UL input UL cource output UL tput) UL purced (Note 1) UL	10 11 12
Isolated externally sourced voltage 16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	input UL cource output UL tput) UL purced (Note 1) UL	11
16 DO with LEDs, 1/2 Amp Open s 8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	tput) UL tput) UL burced (Note 1) UL	11
8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	tput) purced (Note 1) UL	12
8 DO with LEDs (120-240 VAC Ou 6A Relay @ 120 VAC externally so 6 AI, Externally sourced 1-5 V or 4	tput) purced (Note 1) UL	
6 AI, Externally sourced 1-5 V or 4		
6 AI, Externally sourced 1-5 V or 4		10
		13
Mixed 6 AI, 2 AO		
Externally sourced 1-5 V or 4-20 m	A (Note 2) UL	14
Isolated AI, 8 inputs (180 V CM)		
Int or Ext sourced 1-5 V or 4-20 m	A UL	15
6 TC, B, R, S, J, E, K, T, C, N, <u>+</u> 1	DmV UL	16
4 RTD, 2, 3, or 4 wire platinum RT	D UL	17
Isolated AO, 4 outputs		
Int or Ext sourced 1-5 V or 4-20 m	A UL	18
		19
Mixed 6 DIO, 4 AI, 2 HSC, with LE	DS	
Dry contact DI, Ext. sourced 1-5V	or 4-20mA UL	21
Mixed 6 DIO, 4 AI, 2 HSC, 1 AO, w		
		22
1, s	Int or Ext sourced 1-5 V or 4-20 m/ 6 TC, B, R, S, J, E, K, T, C, N, <u>+</u> 10 4 RTD, 2, 3, or 4 wire platinum RTI Isolated AO, 4 outputs Int or Ext sourced 1-5 V or 4-20 m/ 4 HSC with LEDs, Hi / Low Speed Mixed 6 DIO, 4 AI, 2 HSC, with LEI Dry contact DI, Ext. sourced 1-5 V or Mixed 6 DIO, 4 AI, 2 HSC, 1 AO, w Dry contact DI, Ext. sourced 1-5 V or C DI & DO Card cannot be used in the first 1, Div 2 approved. sourced AIs on the mixed I/O cards require	Int or Ext sourced 1-5 V or 4-20 mAUL6 TC, B, R, S, J, E, K, T, C, N, ± 10 mVUL4 RTD, 2, 3, or 4 wire platinum RTDULIsolated AO, 4 outputsULInt or Ext sourced 1-5 V or 4-20 mAUL4 HSC with LEDs, Hi / Low Speed CountersULMixed 6 DIO, 4 AI, 2 HSC, with LEDSULDry contact DI, Ext. sourced 1-5V or 4-20mAULMixed 6 DIO, 4 AI, 2 HSC, 1 AO, with LEDSULC DI & DO Card cannot be used in the first slot of the I/O Expansion Chassis. 120

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

 $\textcircled{O} \text{ Remote Automation Solutions, a division of Emerson Process Management, \textbf{2002-2011}; All Rights Reserved.}$

MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT
MM - VV		COM & I/O Slot #7 through #16		MM - V\
		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
		16 DI with LEDs, Isolated, Int. or Ext. sourced dry contact	N/A	24
		16 DO with LEDs, .5 Amp Open source output	N/A	25
		6 AI, Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	26
		Mixed 6 AI, 2 AO		
		Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	27
		Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20		
		mA	N/A	28
		6 TC, B, R, S, J, E, K, T, C, N, <u>+</u> 10 mV	N/A	29
		4 RTD, 2, 3, or 4 wire platinum RTD	N/A	30
		Isolated AO, 4 outputs		
		Int or Ext sourced 1-5 V or 4-20 mA	N/A	31
		4 HSC with LEDs, Hi / Low Speed Counters	N/A	32
100 - 170		Remote Termination I/O Modules with		
175 - 178		Remote Terminal Blocks (With Fuses)		
	420DS-5L	16 DI with LEDs, Isolated, Int. or Ext. sourced dry contact	N/A	37
		16 DO with LEDs, .5 Amp Open source output	N/A	38
		6 AI, Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	39
		Mixed 6 AI, 2 AO		
		Externally sourced 1-5 V or 4-20 mA (Note 1)	N/A	40
		Isolated AI, 8 inputs (180 V CM), Int or Ext sourced 1-5 V or 4-20		
		mA	N/A	41
		Isolated AO, 4 outputs		
		Int or Ext sourced 1-5 V or 4-20 mA	N/A	44
		Mixed 6 DIO, 4 AI, 2 HSC, With LEDS		
		Dry contact DI, Ext. sourced 1-5V or 4-20 mA	N/A	47
		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
		16 DI With 120VAC Remote Terminal Block (NO FUSES)	N/A	60
		16 DO With 120VAC Remote Terminal Block 6Amp RELAY (NO		
		FUSES)	N/A	61
oto 1. The		ed Als on the mixed I/O cards require external wiring for the 24V de		-

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners.

 ${\small @ {\it Remote Automation Solutions, a division of Emerson Process Management, {\it 2002-2011}; {\it All Rights Reserved}.} }$

CWM			(PC 853)
MODEL & SEG	SPEC SHEET	DESCRIPTION	APPROVAL	SELECT
WW		Remote Terminal Cable Selection		WW
		Number of ControlWave Micro Remote I/O Modules		
	420DS-5L	None	N/A	00
		1 Remote I/O Module	N/A	01
		2 Remote I/O Module	N/A	02
		3 Remote I/O Module	N/A	03
		4 Remote I/O Module	N/A	04
		5 Remote I/O Module	N/A	05
180		6 Remote I/O Module	N/A	06
		7 Remote I/O Module	N/A	07
		8 Remote I/O Module	N/A	08
		9 Remote I/O Module	N/A	09
		10 Remote I/O Module	N/A	10
		11 Remote I/O Module	N/A	11
		12 Remote I/O Module	N/A	12
		13 Remote I/O Module	N/A	13
		14 Remote I/O Module	N/A	14
Х		Remote Termination Length Selection		X
	420DS-5L	None	N/A	0
190		18 inch Cable	N/A	1
		39 inch Cable	N/A	2
		6.5 foot Cable	N/A	3
		13 foot Cable	N/A	4

The Emerson logo is a trademark and service mark of Emerson Electric Co. All other marks are the property of their respective owners. © Remote Automation Solutions, a division of Emerson Process Management, **2002-2011**; All Rights Reserved.