Control Valve Errors
WS1, WS1TT, WS1.25, WS1.5P, WS1.5, WS2, WS2QC

SD	CS, WS1	CH, EE, SP	CB, CT TB, TC	CD, CU	SYSTEM CONTROLLER	Description of Error
1001	101	101	E1	101		Valve Motor Output Energized - NOT SENSING VALVE MOVEMENT
1002	102	102	E2	102		Valve Motor RAN TOO SHORT, STALLED - unable to find next cycle position
1003	103	103	E3	103		Valve Motor RAN TOO LONG - unable to find next cycle position
1004	104	104		104		Valve Motor UNABLE TO FIND HOME POSITION - during regeneration or control reset
1006		106		106		Alternator MAV/NHBP Motor RAN TOO LONG - unable to find proper park position
1007		107		107		Alternator MAV/NHBP Motor RAN TOO SHORT, STALLED - unable to find proper park position
1009	109	109		109		INVALID MOTOR STATE DETECTED, Internal Software Error - proper software operation can no longer be maintained by the microcontroller
				116		Aux MAV 1/NHBP Motor RAN TOO LONG - unable to find proper park position
				117		Aux MAV 1/NHBP Motor RAN TOO SHORT, STALLED - unable to find proper park position
2001	201	201		201		INVALID REGENERATION CYCLE STEP DETECTED, Internal Software Error - proper software operation can no longer be maintained by the microcontroller
		202		202		UNEXPECTED STALL DETECTED - When motor stalls unexpectedly during regeneration, the control will back off of the current stall position and attempt to move ahead once more. If successful, a "202 Error" is only logged (on some controls - w/step position where it occurred). The control does NOT enter Error Mode and continues to operate normally. If unsuccessful, a "102 Error" is logged and Error Mode is then entered.
4002	402	402		402	402	CHECK SUM ERROR FROM THE POWER DOWN SECTION OF EEPROM MEMORY, Nonvolatile Memory Failure - microcontroller can no longer operate properly
4003	403	403	E4	403	403	CHECK SUM ERROR FROM THE PROGRAM SETTING SECTION OF EEPROM MEMORY, Nonvolatile Memory Failure - microcontroller can no longer operate properly
4004	404	404		404	404	CHECK SUM ERROR FROM THE DIAGNOSTIC SECTION OF EEPROM MEMORY, Nonvolatile Memory Failure - microcontroller can no longer operate properly
	405	405		405		CHECK SUM ERROR FROM THE HISTORY PORTION OF EEPROM MEMORY, Nonvolatile Memory Failure - When this error is generated, like a "407" or "408" Error, a "405" is recorded in the Error Log, but the control does not enter Error Mode and continues to operate normally. This portion of memory includes parameters that are in the category of "Since Beginning of Time", like number of days, number of regens, and total volume.
		406		406		CHECK SUM ERROR FROM THE CONTACT SCREEN SECTION OF EEPROM MEMORY, Nonvolatile Memory Failure - microcontroller can no longer operate properly
	407	407		407		STATUS RAM MEMORY FAILURE - Error generated when the microcontroller can't operate properly due to corrupted data contained in the Operational Data/Status Section of RAM memory. When this error is generated, like a "405" or "408" Error, a "407" is recorded in the Error Log, but the control does not enter Error Mode and continues to operate normally using previously stored Status RAM data (that can be up to 6 hrs old). This portion of memory includes the state of motors, relays, flow, regen, and more. Most things that are tracked on a moment by moment basis that need to be able to recover in the event of a power loss or reset is saved here.
	408	408		408		DIAGNOSTIC RAM MEMORY FAILURE - Error generated when the microcontroller can't operate properly due to corrupted data contained in the Diagnostic Section of RAM memory. When this error is generated, like a "405" or "407" Error, a "408" is recorded in the Error Log, but the control does not enter Error Mode and continues to operate normally using previously stored Diagnostic RAM data (that can be up to 6 hrs old). This portion of memory includes parameters normally displayed in the diagnostic branch of the menu map.
	410	410		410	410	CONFIGURATOR DOWNLOAD ERROR - Configuration file downloaded to this control was not originally uploaded from another control with the same software revision
					411	NO EXTERNAL MEMORY - Onboard external memory cannot be found by the microcontroller, the required memory chip or external SD card is not installed or defective
				412		PROGRESSIVE FLOW COMMUNICATION ERROR - Communication has been lost to Valve #1 in the progressive flow system. Error Code is displayed in the User Level as well as the Error Log of the control which has the communication loss.
					412	COMMUNICATION LOSS - Communication has been lost at some point to valve(s) in the system. Display is automatically reset once communications have been successfully restored
				413		PROGRESSIVE FLOW COMMUNICATION RESTORED - Communication has resumed to Valve #1 in the progressive flow system. Error Code is only displayed/recorded in the Error Log of the control which previously had the communication loss.
					413	MAC ADDRESS UNDEFFINED - A unique MAC address must be programmed into each System Controller for proper operation on a computer network
					414	VALVE X NO FLOW - The System Controller has detected a possible problem with a flow meter in the system. On the valve indicated (X), check flow meter wiring and/or clear an obstruction that may be preventing the meter from working properly. To clear the error, manually start a regeneration on the unit at fault.