Crestron Interface Specification

for the

Bosch
PLENA PLM-2xPx
DSP Power Amplifiers

V1.00

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Introduction

These Crestron SIMPL+ modules provide a control and monitoring interface between a Crestron controller and a Bosch Plena PLM-4Px2x DSP Amplifier.

The main module "PLENA PLM-4Px2x" handles the communications between the Crestron controller and the amplifier; as well as providing the symbol inputs and outputs for controlling and monitoring the main functions such as power and channel levels and mutes.

The sub-module "PLENA PLM-4Px2x Mix" communicates to the main module and provides the symbol inputs and outputs for controlling the input mix levels and mutes for a particular channel. Up to 4 of these sub-modules can be connected to each main module.

The sub-module "PLENA Amplifier Level to dB" converts an analogue level to a string dB value.

Module PLENA PLM-4Px2

Signal name and type	Description
Digital input: <**Enable**>	Enables / disables the communications to the amplifier. High/1 = Enabled; Low/0 = Disabled
Digital input: <**Clock**>	Connect to a 100ms oscillator.
Digital input: <**Reset**>	Refreshes the data from the amplifier. High/1 (rising edge) = Issue Refresh; Low/0 = No Effect
Digital input: <**PowerOn**> Digital input: <**PowerOff**> Digital input: <**PowerToggle**>	Sets / Resets / Toggles the power state of the amplifier. High/1 (rising edge) = Set power state; Low/0 = No Effect
Digital input: <**GlobalMuteOn**> Digital input <**GlobalMuteOff**> Digital input <**GlobalMuteToggle**>	Sets / Resets / Toggles the global (all channels) mute state. High/1 (rising edge) = Set mute state; Low/0 = No Effect;
Digital input: <**ChanXMuteOn**> Digital input: <**ChanXMuteOff**> Digital input: <**ChanXMuteToggle**>	Sets / Resets / Toggles the channel 'X' mute state. High/1 (rising edge) = Set mute state; Low/0 = No Effect;
Digital input: <**PresetX**>	Trigger Preset 'X'. High/1 (rising edge) = Trigger Preset; Low/0 = No Effect;
String input: <**IPAddr**>	Specifies the IP address of the amplifier.. This signal should be fed from a "Serial Send" or similar symbol.
String input: <**TxSubModules**>	String inputs from channel sub-modules. The use of

	sub-modules allow the control of individual channel controls such as input mix levels.
Analog input: <**ChanXLevel**>	Sets the tapered output level of channel 'X'. Range 0 (-100dB) to 65535 (+10dB)
Digital output: <**Online**>	Indicates that the module is communicating with the amplifier.
Digital output: <**PowerFB**>	Indicates that the amplifier is currently in operational mode.
Digital output: <**OverrideFB**>	Indicates that the amplifier is currently being overridden (EWIS trip)
Digital output: <**GlobalMuteFB**>	Indicates that the Global mute is in effect.
Digital output: <**ChanXMuteFB**>	Indicates that the channel 'X' is currently muted.
Digital output: <**ChanXFaultFB**>	Indicated that channel 'X' is in fault mode.
Digital output: <**ChanXThermFB**>	Indicated that channel 'X' has thermal tripped,
Digital output: <**PresetXValid**>	Indicates that Preset X has been stored and is valid.
String output: <**AmpName**>	Indicates the Name of the amplifier.
String output: <**RxSubModules**>	The string output to the various sub modules.
Analog output: <**ChanXLevelFB**>	Indicates the tapered output level of channel 'X' 0 (-100dB) to 65535 (+10dB).
String output: <**InputXName**>	Indicates the name of input 'X'.

Signal name and type	Description
String output: <**ChanXName**>	Indicates the name of channel 'X'.
String output: <**PresetXName**>	Indicates the name of Preset 'X'.
Integer parameter: <**PollTime**>	The number of clock "ticks" between polling the status of the amplifier. This number should be kept as small as possible without overloading the controller, A value of 0 will disable the polling in which case the 'Refresh' input must be pulsed to poll the amplifier.

Sub-Module PLENA PLM-4Px2x Mix

Signal name and type	Description
Digital input: <**InputXMuteOn**> Digital input: <**InputXMuteOff**> Digital input: <**InputXMuteToggle**>	Sets / Resets / Toggles the input 'X' mix mute state. High/1 (rising edge) = Set mute state; Low/0 = No Effect;
String input: <**RxAmp**>	Input string to receive feedback strings from the main amplifier module.
Analog input: <**InputXLevel**>	Sets the tapered mix level for input 'X'. 0 (-100dB) to 65535 (+10dB)
Digital output: <**InputXMuteFB**>	Indicates the mix mute status for input 'X'.
String output : <**TxAmp**>	Output string to pass commands to the main amplifier module.
Analog output: <**InputXLevelFB**>	Indicates the tapered mix level for input 'X' 0 (-100dB) to 65535 (+10dB).
Integer parameter: <**Channel**>	Defines the channel number for the sub-module.

Sub-Module PLENA Amplifier Level to dB

Signal name and type	Description
Analog input: <**Level**>	Tapered amp level 0 (-100dB) to 65535 (+10dB)
String output: <**dB**>	dB output string for Level