

Custom Screens

1.0 General

As an option the CPP will support custom screens for the front panel LCD display. This application note describes the standard – custom screens - that are available in the CPP.

2.0 Screen Set Up

The screen is set up by entering CUSTOM<cr>. The CPP presents the following menu selection.

CUSTOM<cr>

Screen Set Up

Screen Number = 1<cr>

2.1 Screen Number - #1, #2

This allows the user to select the screen number to be set up. Enter number 1 or number 2. Two standard - custom screens #1 and #2 – are described in this section. These screens allow the user to give the screens a name, two headers, select up to 6 channels for their values to be displayed, eight I/O bits to be displayed, and four sequences to be displayed. From the screen the user can set and reset the output bits, and start and stop the sequences. Presented in figure 1 is a definition of the screen, and where on the screen the entries will be placed. Horizontal row #1 is reserved for the communications bar, and row #2 is reserved for the time bar. Selecting screen number 1 or number 2 brings up the following menu.

Screen Set Up

1 – Name

2 – Headers

3 – Chn's

4 – D I/O

5 – Seq's

6 - Password

7 – List

Selection =

2.1.1 Name

This selection allows the user to input 20 characters as a screen name, shown as NAMENAMENAMENAMENAMENAME in Figure 1. Centering the name is the responsibility of the user. A name of System Detail is an example. The CPP prints any name already set up if one has been set up.

2.1.2 Headers

This allows the user to input 16 characters for header #1 and header #2. These are shown in Figure 1 as H1H1H1H1H1H1H1H1 AND H2H2H2H2H2H2H2H2. Inlet and Outlet are examples. The CPP asks for header #1 then header #2. The CPP prints any header already set up if one has been set up. As with the screen name centering the headers is the responsibility of the user.

2.1.3 Chn's - Channels

This allows the user to select up to 6 channels to have their instantaneous data displayed. Selected channels will have their channel number and name displayed. Unused locations will be blank. The CPP asks for the channel numbers in order 1 – 6. If a channel's data is valid, there is no status modifier in the S field. If some condition is applied to the channel, such as in calibration, a character will be presented in the S field. Table 1 below presents the S field characters and their meaning.

Table 1
S Field Characters

<u>S Field</u>	<u>Meaning</u>
None	Good
A	High alarm
A	Low alarm
B	Bad
C	In Calibration
D	Downed by Operator
H	Holding
L	Instr Off Line
M	Missing
R	Response
V	Bad status indication
Z	In Initialization
S	In purge

The CPP asks the channels as;

```
Position #01 = Chn02 NOxIn = <cr>
Position #02 = Chn00      = 05<cr>
05 SO2In
Position #03 = Chn00      = <cr>
Position #03 = Chn00      = <cr>
Position #03 = Chn00      = <cr>
Position #03 = Chn00      = <cr>
```

Return to Menu

If just the channel number is entered, e.g., 05, then the CPP presents the instantaneous readings on the display. If the channel number is followed by a P, e.g., 05P, then the CPP will present the preliminary values on the display. A channel number followed by an I results in the Interim values being displayed. A channel number followed by an F results in the final average being displayed. The P, I and F selections are depicted on the display in front of the channel number.

2.1.4 D I/O – Input/Output Bits

This allows the user to select up to eight I/O bits for display and control. In the initialization, the CPP asks for the bit number for each position. Inputting a bit number results in an output bit being selected. Inputting an I before the bit number, (I01) results in an input bit being selected. The bit number and the first twelve characters of the bit label are presented on the screen. The zero, 0, or the one, 1, presented at the end of each bits label indicates that the bit is Off (0) or On (1). If the bit is an input bit, an I is presented before the bit number on the display.

The user can set and reset these from this screen. This is done by pushing the Next/Back pushbuttons until the cursor is blinking under the desired bit number. Pressing the Enter pushbutton toggles the bit from Off to On or On to Off. Use the Next and Back pushbuttons to move around the screen.

2.1.5 Seq's – Sequencers

This allows the user to select up to four sequencers to be displayed. The sequence number and the first ten characters of the sequence label are presented. The condition of the sequence, Idle, Run, Dis, NI is also displayed. Idle indicates that the sequence is set up but does not have any active output settings at this time. Run indicates that the sequence presently has active output settings. Dis indicates that the sequence has been initialized but has been disabled by the user. NI indicates that the selected sequence has not been initialized. A sequence that is Idle can be started by using the Next pushbutton to move the cursor under the sequence number and pressing the Enter pushbutton. A sequence that is running can be stopped by selecting the sequence number and pressing the Enter pushbutton.

2.1.6 Password

The password feature allows the user to assign a password to the screen. If a password is setup for a screen, then the password must be entered before the user can activate anything from the screen. Data will be displayed, but the user can not initiate any actions. The password is set up as follows.

Password None

Password = **AB34**<cr>

Ret to menu

Referencing figure 1, if no password is set up, then depressing the Next pushbutton moves the cursor from the Exit box to the screen and the user can initiate activities. If a password is set up, when the Next pushbutton is depressed, the Exit changes to xxxx, and the cursor is flashing over the first x. Depress the Enter pushbutton to enable the password entry. The first x will change to a 0, and the flashing cursor will reduce to an underline.

Use the Next and Back pushbuttons until the correct first character of the password is being displayed, e.g., in the above example, an A. Depress the enter pushbutton to input the character. The cursor then moves to the second character. Repeat the procedure until all four password characters have been input. If input correctly, then the xxxx's change to XXXX, and the cursor can be moved down into the screen, and actions initiated. If input incorrectly, the system return to the Main Menu screen.

The screen will remain active, with XXXX being displayed, until the cursor is returned to the XXXX box, which then reverts back to Exit indicating that screen actions are now disabled. The password must be reentered to return the screen to an active mode.

Entering four spaces, or four zeroes and a carriage return disables the password feature.

2.1.7 List

This provides a printout of what is set up for this screen. Although the aspect ratio is different between the LCD and a PC monitor, the list selection does allow the user to verify what has been set up.

2.2 Screen Number - #3

TBD

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
1																																										
2											N	A	M	E	N	A	M	E	N	A	M	E	N	A	M	E	N	A	M	E							E	x	i	t		
3																																										
4					H	1	H	1	H	1	H	1	H	1												H	2	H	2	H	2	H	2	H	2	H	2					
5		C	#		N	A	M	E	0	1		±	1	.	0	0	0	S						C	#		N	A	M	E	0	4		±	1	.	0	0	0	S		
6		C	#		N	A	M	E	0	2		±	1	.	0	0	0	S						C	#		N	A	M	E	0	5		±	1	.	0	0	0	S		
7		C	#		N	A	M	E	0	3		±	1	.	0	0	0	S						C	#		N	A	M	E	0	6		±	1	.	0	0	0	S		
8																																										
9		B	#		L	A	B	E	L	L	A	B	#	1		0/1								B	#		L	A	B	E	L	L	A	B	#	5		0/1				
10		B	#		L	A	B	E	L	L	A	B	#	2		0/1								B	#		L	A	B	E	L	L	A	B	#	6		0/1				
11		B	#		L	A	B	E	L	L	A	B	#	3		0/1								B	#		L	A	B	E	L	L	A	B	#	7		0/1				
12		B	#		L	A	B	E	L	L	A	B	#	4		0/1								B	#		L	A	B	E	L	L	A	B	#	8		0/1				
13																																										
14		S	#		L	A	B	E	L	L	A	B	#	1		R	U	N						S	#		L	A	B	E	L	L	A	B	#	3		I	D	L	E	
15		S	#		L	A	B	E	L	L	A	B	#	2		I	D	L	E					S	#		L	A	B	E	L	L	A	B	#	4		R	U	N		
16																																										

Figure 1
Screen Number 1 Definition