

PDU Setup

This document is intended for use by a technical audience and describes a number of procedures that are potentially hazardous. Installations should be carried out by competent persons only.

Syvecs and the author accept no liability for any damage caused by the incorrect installation or configuration of the equipment.

Please Note that due to frequent firmware changes certain windows might not be the same as the manual illustrates. If so please contact the Syvecs Tech Team for Assistance.

Support@Syvecs.com

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1 Introduction

PduSetup is used to create PDU calibrations to control how the PDU behaves. This is done with the use of graphically represented logic control.



Due to continuous development, some features may change and the manual will update periodically. Please ensure you have the latest version dated on the cover page of this document.

Menu Shortcuts

Syvecs applications are intended for quick operation without the use of a mouse for improved usability in the pit lane. All menu buttons can therefore be reached using keyboard shortcuts. Each option has an underlined letter, identifying its shortcut key or the shortcut displayed to the left. Dialogue boxes can be navigated with the arrow keys. The <Spacebar> can be used to select while <Enter> and <Esc> are used as OK and CANCEL respectively.

2 File

PC

Select <u>File</u>, <u>New</u> and select the PDU type to create a new calibration. The PDU type is required to build the list of inputs and outputs available. Load a previously saved calibration by selecting <u>File</u>, <u>Load</u>.

Save the calibration to the working directory with *<u>File</u>, <u>Save</u> or to a different location with <u><i>File,*</u> save<u>*T*</u>o.

Select *<u>File</u>, <u>Print</u> to print the current page in black and white as it is seen. This includes text and simulation status.*

Device

Retrieve a calibration from a connected PDU with *Device*, *Get*.

Program a calibration to a connected PDU by selecting <u>Device</u>, <u>Set</u>. When programming is complete, device information will be displayed as well as any messages describing calibration problems such as invalid current limits. Check the specific product datasheet to see these limits.

Note

Connecting to a device with <u>Device</u>, <u>Connect</u> is used for monitoring only. No changes to the calibration can be made or programmed when in this state.

Working Directory

The working directory is maintained across all Syvecs applications and can be edited in PduSetup. To change the current working directory select <u>Working directory</u> under <u>File</u>. Use CREATE to create a new folder in the current location. Use SELECT to select the current location as the new working directory. If the location has not been used before, a .CFG file will be created. Selecting Working Dir Behaviour allows editing of the .CFG file. All .PDU files are saved in the PduSetup folder with no further directories.



3 Calibrate

Main Display

The main display can consist of several tabs or 'pages' displaying a grid. The pages can be added, deleted renamed, resized and cleared under the <u>Page</u> menu. Numerical shortcuts can also be found here to switch between pages.



In the menu bar, the total calibration size and connection state is shown. The bar displayed represents the calibration size as a proportion of total available memory. When this is over the limit, the bar will turn yellow and programming will not be allowed. The tooltip comment cannot be deleted but can be edited. The text here is what is displayed in the file menu in the same way as a file comment.

The keyboard can be used instead of the mouse with the following alternative controls:

Command	Mouse	Keyboard
Move pointer	Drag	Arrows
Select	Left click	Spacebar
Options	Right click	Enter
Zoom	Mouse wheel	+/-

Common windows shortcuts can be used to cut, copy, paste, undo and redo or can be accessed under the *<u>E</u>dit* menu.

When calibration is complete, it can be validated by selecting <u>Cal</u>, <u>Validate</u>. This will then display an error if validation fails and hint at the cause.



Components

Components can either be dragged onto the display with the mouse from the component panel displayed on the left of the screen or added from the <u>Add</u> menu. They can then be dragged around the grid into position. Hold <Ctrl> or draw a box to select multiple components. Select component nodes and drag to draw connectors between them. Add interconnects to create bends by selecting partway down the connection or at the end of a loose connection. Components and connections can be deleted or have further options edited by right clicking.

Shortcut	Symbol	Description	Menu Options					
<u>T</u> ext	I TEXT	Add text to the display.	Edit or lock text. When locked, text is displayed in yellow and cannot be moved or edited until unlocked.					
Input -	POLLIF Vilddon 0:05 Debarce 0:06 AETIVELOW INPLIT 10	A physical or soft input.	Further properties.					
<u>O</u> utput	Trip 1.00A/0.505 Innsi 1719-0.00A/0.0550 Lard Clarest Trip 0.00A/0.0550 Ammi Trip 0.05555() 1.055 Ammi Trip 0.05555() 1.055 OUTPUT 20	A physical or soft output.	Lock output. When locked, all connected components will also be locked and displayed in yellow. These components cannot be edited or moved until the output is unlocked. Add or remove a trip output. This acts as a bypass if the output fails. Further properties.					
Output <u>D</u> istributer		Multiple output distributer	Toggleindividual or team distribution.					
And		Logical AND. Triggers when all inputs are high.	Add or remove additional inputs.					
0 <u>r</u>	OR	Logical OR. Triggers when any single or multiple inputs are high.	Add or remove additional inputs.					
Xor	XOR	Logical XOR. Triggers when any single input is high.	Add or remove additional inputs.					
In <u>v</u> ert	BN	Logical NOT. Reverse the input.	Add or remove a conditional input. Will cause the inverter to only work when conditional input is high.					
<u>F</u> lash	FLASH	Switch between high and low at set intervals.	Properties including on and off durations.					
Latch	Auto Garoell 1006 S LATCH T R	Output is toggled when T (toggle) is high. Output set to high when S (Set) is high and low when R (reset) is high.	AddorremoveSet,ToggleandReset inputs. Properties including auto-cancel time which will reset the latch after the specified time.					

Flip Flop		Output = D (data input) only when C (clock input) is on rising edge.	Add or remove Set and Reset inputs. S latches output as high, R latches output as low.
Delay	Delay Time 1.00s	Delayed on by set delay time, instant off.	Properties including delay time.
Feedback	FEEDBACK	Return loops to inputs.	None
ON (1)		Always high input.	None
OFF (0)	OFF	Always low input.	None
Link IN (2)	Link	Terminate to continue at matching Link OUT (Can be on a different page)	Edit name of link for Link Out.
Link OUT (3)	Link	Continue from matching Link IN (Can be on a different page)	Edit which link to use.
Keypad Dimmer	Ngre 100% Ngre 100% Ngre 100%	Keypad dimmer control. Set to 'Night' when high.	Set high and low levels (%).
Reset	RESET	Reset PDU fuses and fault clear when high.	None
Fault	FAULT	Active when a PDU hard output has tripped.	None
Gate		Output = D (data input) when G (Gate input) is high and latches when G islow.	Add or remove Set and Reset inputs. S latches output as high, R latches output as low.
Lamp	Investments Nager 2006 DIM	Keypad dimmer control. Set to 'Night' when high.	Set high and low levels (%).
RSTSW	RESET	Reset PDU fuses and fault clear when high.	None
Dimmer	FAULT	Active when a PDU hard output has tripped.	None
Wake		Output = D (data input) when G (Gate input) is high and latches when G islow.	Add or remove Set and Reset inputs. S latches output as high, R latches output as low.

Examples of how each component can be used are found in the example calibration provided during software installation. By default, this file is located in: C:\Users\Public\Documents\Syvecs\PduSetup\ExampleCalibration.PDU

A components text will appear green when it is fully defined and red when it is not. A component is defined when all of its input and output nodes are used and properties correctly set. Before simulating or programming, all input nodes must be used. Output nodes can remain free to allow testing of subsystems and partial logic but will remain red.

AND

I/O-Further Properties

Input Properties



Input

Select input to assign. Either physical, soft (CAN) or LR switch panel. CAN inputs are setup under <u>Cal, Communications</u>.

Name

Type name to be visible on main display.

Pull Up/Down (physical inputs only)

Set whether the input is in a high or low state with no input signal.

Alarm/Default on timeout (soft input only)

Choose between triggering an alarm or switching to default state when message timeout has expired.

Default state ON/OFF (soft input only)

If 'Default on timeout' is selected, choose what this default state should be.

Msg Timeout (soft inputonly)

Type the amount of time allowed between messages before a timeout is triggered.

Analogue (physical input 1-4 only)

Tick this box if the input is an analogue input

High Threshold (physical input 1-4 only)

If input is analogue, type the upper threshold voltage.

Low Threshold (physical input 1-4 only)

If input is analogue, type the lower threshold voltage.

Validation

Requires an input signal to be consistent for the defined amount of time before acknowledging it as in input. Validation causes a small delay but avoids accidental switching.

Debounce

After detecting a change in state, instantly stabilises the signal for the defined amount of time.



Active High/Low (physical input only)

Set if input is active at high or low voltages. Logic uses input active state and not voltages.

Output Pr	opercies
Output #	UNASSIGNED
Name	
	ive Load 🛛 Low Side Pullup
Status Ou	tput 🔹 Copy input while Tripped (default)
	C Trip Active
	 Alarm Active
Trip 1.00	A 0.100 5
Inrush Ha	ndling 💿 Inrush Fuse (default)
	 Soft Start
Inrush Tin	ie 0.25 s
Inrush Trij	10.00 A 0.050 s
Low Curre	nt Trip 0.00 A 0.100 s
Alarm 65	5.35 A 0.100 s
	OK Cancel

Output Properties

Output

Select output to assign. Either physical high side, physical low side (PDU10 only), soft (CAN) or LR switch panel LED. CAN outputs are setup under <u>Cal</u>, <u>Communications</u>.

Name

Type name to be visible on main display.

Inductive Load (physical output only)

Set whether the output is an inductive load or not (Anything with a coil i.e. motors, pumps etc.). Setting an output as inductive increases the circuit protection required.

Trip (physical output only)

The output will trigger a fault when the trip current is exceeded for longer than the designated time period. This disables the faulted output.

Often when an output is initially switched on it may draw extra current for a period of time. This is known as the inrush period. During this time it may be desirable to have a different trip value.

Inrush (physical output only)

Specify the length of the inrush period. This affects how long the inrush trip is active.

Inrush Trip (physical output only)

A separate current trip applied during the inrush phase. The output will trigger a fault when the trip current is exceeded for longer than the designated time period. This disables the faulted output.

Low Current Trip (physical output only)

The output will trigger a fault when the current is less than the specified trip current for longer than the designated time period.

Alarm Trip (physical output only)

A CAN message is sent as a warning when the output current exceeds the specified value for longer than the designated time period.

Note

Trips can be reset with a 'circuit reset' (activating the RESET component in the calibration or switching the physical reset pin) or with a power cycle. A reset can only occur once every two seconds per output team.

4 Tools

Simulate

A full or partial calibration can be simulated to test that the calibration is behaving as intended. All input nodes must be assigned before simulation but output nodes can remain free. Simulation includes the state of all internal components so each step can be monitored. Toggle simulation mode by selecting <u>Cal</u>, <u>Start/Stop Simulation</u>. The connection status should be flashing green and display 'SIMULATING'. In this mode, components will all become locked so they cannot be moved or edited. Inputs can be toggled on and off by selecting them. Selecting an output will simulate a fault if enabled. Components will be shaded when active. Faults are displayed in red.



Monitor

Select <u>Device</u>, <u>Connect</u> to connect to a PDU. This will automatically retrieve the calibration stored and begin monitoring all inputs and outputs as well as supply voltage, board temperature and general messages displayed to the right of the main display. The message box can be cleared by selecting <u>Device</u>, clear <u>Messages</u>.



In this mode, components will all become locked so they cannot be moved or edited. Input and output states are visible but the internal logic cannot be monitored. Inputs and outputs can be forced into on or off states by right clicking to bring up the options. Selecting automatic will revert the component to display real time states.

To stop monitoring and enable editing select <u>Device</u>, <u>Disconnect</u>.

Cal options

These options affect the calibration file and can be found under the <u>Cal</u> menu.

<u>C</u>ommunications

Set custom CAN settings here including soft I/O addresses.

Communications	Mil CAN:	DO NOT USE. For military applications only.
Mil CAN Source Address F0	Serial Baud Rate:	Change serial baud rate. Must match all devices on bus.
Serial Baud Rate 38400	CAN Baud Rate:	Change CAN baud rate. Must matchalldevicesonbus.
CAN Baud Kate 1000000	DatastreamTXRate:	Transmission rate in Hz
29bit CAN IDs CAN Termination	29bit CAN IDs:	Allows 29bit addresses to be used.
Soft I/P Base (pre V2.9) 710 Datastream Base id 700	0.2A CAN Resolution:	Toggle between default 0.5A and 0.2A measurement resolution
Fault Reset id 720	Soft I/P Base (preV2.9):	Starting address of soft I/O for pre V2.9 products (16 Frames).
Switch Panel 1 Switch Panel 2 #1-8 I/P 710 O/P 718	Datastream Base id:	Starting address of PDU CAN datastream including output states and currents (10 frames).
#9-16 1/P 711 0/P 719 #17-24 1/P 712 0/P 71A #25-32 1/P 713 0/P 71B #33-40 1/P 714 0/P 716	Fault Reset id:	Receiving this frame, regardless of content, has the same effect as the RESET schematic component.
SWP1 I/P 741 O/P 740	Switch Panels:	Tick these if LR Panel is used and also
716 71E		tick Grayhill option if using a Grayhil
717 71F		CanOpen Panel
OK Cancel	I/O:	Custom soft I/O addresses. 8bits per I/O.

For more CAN information including content and default template, please refer to the Universal CAN Template Manual or contact Syvecs.

Change Type

Change the type of PDU associated with the calibration file. This changes the number of physical I/O available and must be correct before programming.

Change <u>Operating Voltage</u>

Switch between 12V and 24V power supply.

Change Identity

Change identity associated with the calibration file.

Enable PDU10 FaultPin

For PDU10 calibrations only, Input 8 may be assigned as the fault pin. This allows a mechanical switch with an LED indicator to be used as a hard reset switch in the same way as the RESET schematic component.

Other PDU products have a dedicated fault pin for this purpose.

Options

These general options are found under the **Options** menu.

Enable/Disable Grab and drag

Enable or disable the ability to drag the screen around when zoomed in. When disabled, box selection is enabled.

Enable/Disable Auto Offline

With auto offline active, if a device has been disconnected for more than 5 seconds PduSetup will revert to Offline mode and will require a manual <u>Device</u>, <u>Connect</u> to re- establish a connection or begin a new connection with a different device. If deactivated, it will continue to search for the same device only and automatically reconnect if available.

Global Options

Global options affect all applications and can be found under *<u>File</u>, <u>Global Options</u>.*

Black-on-White colour scheme

Toggle the colour scheme of all Syvecs applications between a white background and a black background. The best option will be dependent on screen quality, ambient lighting and user preference.

Colour Blind (yellow/green)

Changes fixed yellows to purple to aid with yellow/green confusion.

Reverse Folder Order (in file menu)

Folders are ordered alphabetically in the file menu. Tick this box to reverse this order.

Floating Mouse Focus (in dialogs)

Causes whatever the mouse pointer is hovering over to be highlighted as if it was selected with the keyboard.

5 CanBus Connections

Connection options and Setup



S6Plus/S6-I/S7I - Has 1 Can Available, if generic S6-I/S6+/S7-I then Can1 is 1mb. PnP Kits Can1 is used for OEM integration but some custom code can be done so that generic can frames for PDU are also sent from the ECU. As a 2nd Canbus is not available on this Ecu a slave connection is not possible.

S7Plus - Has 2 Can Available, if generic S7+ then Can1 is 1mb. PnP Kits Can1 is used for OEM integration so Can2 must be used for Slave Connections. Users can choose to have Can2 on S7+ as either Generic Can or Slave based on connection to PDU. If using slave then users can not connect the Keypad to a Slave Can and hence why it's shown in Orange to connect a keypad to Can1 on the PDU. (Terminated Resistor will be required on Keypad if wired this way)

S8 - Has 2 Can Available, both Can are fully configurable and can accept Slave Can. If it a PNP kit then a Can Bridge will also be a node on Can1 from the S8 so leave Can1 for Generic Can connections to the PDU.

S12 - Has 3 Can Available, All Can are fully configurable and can accept Slave Can. If it a PNP kit then a Can Bridge will also be a node on Can1 from the S8 so leave Can1 for Generic Can connections to the PDU.

Canbus Soft Inputs and Outputs

The Canbus soft input allows the PDU to receive 8 Bit messages as Inputs for using in the PDU Logic Pages, this is useful for when a slave connection is not used from the PDU to the Ecu for receiving states like Fuel Pump, Fan Etc.



The Can ID for receiving Soft Inputs is set in Cal – Communications. In the side screenshot, Soft I/P Base is set below at 0x710. Soft Inputs #1-8 will use 0x710 then Soft Inputs #9-16 will use 0x711. This is all adjustable.

The Can Speed is set at 1mb

The Soft Outputs allow for logic states on the PDU to be sent over Can also to the other devices on the canbus. This is set on the side screenshot so SoftOutput 1-8 is using 0x718 This is useful if wanting to send a keypad button to the ECU for changing calibration etc.

Cal Up				
DefaultOFF				
Mag Timeout 0.255				
Debourice 0.10s		CAN 0x718 byte 2 of 8		
SWP1 I/P 5	TLATCH	Soft O/P 2		
DefaultOFF				
Msg Timeout 0.25s				
Validation 0.10s Debourice 0.10s		CAN 0x718 byte 3 of 8		
SWP1 I/P 6	TLATCH	Soft O/P 3		

On the Syvecs Ecu side the Soft Output receiving is setup in the Datastreams area.

Set the Can Speed to match what is used on the PDU communication setup.

Generic CAN Receive is used for receiving the 8 Bit messages from the PDU, Enable Receive B, Set the Receive B Bus to the canbus used on the ecu, Set the Canbus identifier to match the Soft Outputs set in the PDU Setup. In this case 0x718

Logging Functions				
Datastreams				
CAN1 Bus Speed				
CAN2 Bus Speed				
Generic CAN Transmit				
Generic CAN Receive				
Receive A Enable - f(Frame)	Frame Id			
Receive A Bus - f(Frame)	B01B08 718h (0D4h / 13.2%)			
Receive A Identifier - f(Frame)				
Receive A Timeout - f(Frame)				
Receive A Initial Timeout - f(Frame)	600h -			
Receive B Enable - f(Frame)				
Receive B Bus - f(Frame)	월 400h -			
Receive B Identifier - f(Frame)	2001			
Receive B Timeout - f(Frame)	2000			
Receive B Initial Timeout - f(Frame)	opoh -			~
Receive B Signed/Unsigned - f(Item)				N
Receive C Enable - f(Frame)		-	82	Ba
Receive C Bus - f(Frame)		60	317	525
Receive C Identifier - f(Frame)		Frame		
Receive C Timeout - f(Frame)				
Density Citable Transity (Course)				

The pin assignment can then be set to the Xcan Receive B Item number so that the SoftOut Logic from the PDU is able to be used for the ECU Parameter state.

Scal 2.15.154 : C:\Users\Public\Documents\Syvecs\Calibrations\S7 TestRig 1.651 LSU.SC	X:CAN RECEIVE A #27			_ 6
Ele Cal Pastecal Device Gauge Worksheet View ID(GENERIC) Dev(S7 #XXXX) SwVer(1.651.X/1)	X:CAN RECEIVE A #28			OFFLINE
IQ Configuration / Pin Assignments	X:CAN RECEIVE A #29	FCC F45 Onlines Coloris Math. Laws Minester	ever State	
Pin Use	X:CAN RECEIVE A #30	Eac Zor Obrous Select Mani Feally Meananon	runMode	
A) Inputs : Cal Up Switch NOT CONNECTED	X:CAN RECEIVE A #31		runTime	Kenexene
A) Inputs : ALS Enable Switch NOT CONNECTED	X:CAN RECEIVE A #32		rpen post i rai	
A) Inputs : ALS Select Switch NOT CONNECTED	X:CAN RECEIVE B #01		tps1	
A) Inputs : Action Code (Clear) NOT CONNECTED	X:CAN RECEIVE B #02		map1	
A) Inputs : Action Code (Set) NOT CONNECTED	X:CAN RECEIVE B #03		turboSpeed1	Nene
A) Inputs : Ar Charge Temperature 1A NOT CONNECTED	X:CAN RECEIVE B #04		ecti	****
A) Inputs : Ar Charge Temperature 1B NOT CONNECTED	X:CAN RECEIVE B #05		bao	
A) Inputs : Air Charge Temperature 2A NOT CONNECTED	X:CAN RECEIVE B #06		ccp1	
A) Inputs : Ar Charge Temperature 2B NOT CONNECTED	X:CAN RECEIVE B #07		ecp1	***
A) Inputs : Air Con Switch NOT CONNECTED	X:CAN RECEIVE B #08		relFo1	0.80
A) Inputs : Ambient Ar Temperature NOT CONNECTED	X:CAN RECEIVE B #09		ect	***
A) Inputs : Auto Trans Accumulator Pressure NOT CONNECTED	X:CAN RECEIVE B #10		lam1	
A) Inputs : Auto Trans Input Shaft Speed NOT CONNECTED	X:CAN RECEIVE B #11		vbat	
A) Inputs : Auto Trans Line Pressure NOT CONNECTED	X:CAN RECEIVE B #12		beMax.	
A) Inputs : Auto Trans Lockup Outch Pressure NOT CONNECTED	X:CAN RECEIVE B #13		tcSwitch	*****
A) Inputs : Auto Trans Low Batto Switch NOT CONNECTED	X:CAN RECEIVE B #14		alsSelectSwitch	
A) Inputs : Auto Trans Manual Down Switch NOT CONNECTED	X:CAN RECEIVE B #15		launchSelectSwitch	Nexe
A) Inputs : Auto Trans Manual Un Switch NOT CONNECTED	X:CAN RECEIVE B #16		callidect	
A) Inputs : Auto Trans QI Temperature NOT CONNECTED	X:CAN RECEIVE B #17		ttSelect	xexe
A) Inputs : Auto Trans Output Shaft Speed NOT CONNECTED	X:CAN RECEIVE B #18		alsSelect lexchtelect	2020
A) Inputs : Auto Trans Select 1 NOT CONNECTED	X:CAN RECEIVE B #19		tuneSwitch	
A) Inputs : Auto Trans Select 2 NOT CONNECTED	X:CAN RECEIVE B #20		ImpMode	Nexe
A) Inputs : Auto Trans Select 3 NOT CONNECTED	X:CAN RECEIVE B #21		ergnecrade	
A) Inputs : Auto Trans Select 4 NOT CONNECTED	X:CAN RECEIVE B #22		beAn	
A) Inputs : Barometric Pressure NOT CONNECTED	X:CAN RECEIVE B #23		btPwr1	
A) Inputs : Beacon NOT CONNECTED	XICAN RECEIVE B #24		btMax	
A) Inputs : Brake Pressure (Front) NOT CONNECTED	X:CAN RECEIVE B #25		astPeak	Kene
A) Inputs : Brake Pressure (Rear) NOT CONNECTED	X:CAN RECEIVE B #26		astPeakIde astAva	
A) Inputs : Cal Down Switch NOT CONNECTED	X:CAN RECEIVE B #27		ac01V	
A) Inputs : Cal Up Switch NOT CONNECTED	X:CAN RECEIVE B #28		ar02V	0.00
A) Inputs : Calibration Override Switch A NOT CONNECTED	X:CAN RECEIVE B #29		anosy	
A) Inputs : Calibration Override Switch B NOT CONNECTED	XICAN RECEIVE B #30		an05V	
A) Inputs : Calibration Switch NOT CONNECTED	X:CAN RECEIVE B #31		an06V	
A) Inputs : Cam (Exhaust 1 Variable Valve Timing) NOT CONNECTED	X:CAN RECEIVE B #32		an08V	0.00
A) Inputs : Cam (Exhaust 2 Variable Valve Timing) NOT CONNECTED	X:CAN RECEIVE C #01		an09V	
A) Inputs : Cam (Inlet 1 Variable Valve Timing) NOT CONNECTED	X:CAN RECEIVE C #02		an10V	
A) Inputs : Carn (Inlet 2 Variable Valve Timing) NOT CONNECTED	X:CAN RECEIVE C #03		an12V	686
A) Inputs : Cam (Phase) A AN 02 (AB) : C11	X:CAN RECEIVE C #04		an13V	
A) Inputs : Cam (Phase) B NOT CONNECTED	X:CAN RECEIVE C #05		an15V	0.80
A) Inputs : Clutch Depressed Switch NOT CONNECTED	X:CAN RECEIVE C #06		an16V	
A) Inputs : Cutch Paddle Postion A NOT CONNECTED	X:CAN RECEIVE C #07		entriFlags entriFland	ACKONONO.
A) Inputs : Clutch Paddle Position B NOT CONNECTED	X:CAN RECEIVE C #08		errorflagsH	
A) Inputs : Clutch Postion NOT CONNECTED	X:CAN RECEIVE C #09		sensorWarningLevel	Kene
A) Inputs : Clutch Pressure NOT CONNECTED	X:CAN RECEIVE C #10		sensormaningLgitt	
A) Inputs : Crank Case Pressure 1 NOT CONNECTED	X:CAN RECEIVE C #11			
A) Inputs : Crank Case Pressure 2 NOT CONNECTED	X:CAN RECEIVE C #12			
A) Inputs : Crank Case Pressure 3 NOT CONNECTED	X:CAN RECEIVE C #13			
A) January Care Brassure 4 NOT CONVECTED	X:CAN RECEIVE C #14			

Soft Output 1 in the PDU would in this case equal Xcan Receive B01

The other way around so sending data from the ECU to the PDU is done using the Generic Can Transmit.

Set the Transmit Bus to match what is used for the connection to the PDU, Transmit Identifier needs to match what is set for Soft Input on the PDU, in this case 0x710, suggest to do this on the last Frame slots like shown below as the rest of the content section might be setup for other can interfaces.





Set the Transmit Frequency for the Identifiers set at 100hz

Set the PDUCtl states in the Transmit Content of the Frames used

SCal 2.15.154 : C:\Users\Public\Documents\Syvecs\Calibrations\S7 TestRig 1.651 LSU.SC												_ @ ×
Ele Cal Pastecal Device Gauge Worksheet View ID(GENERIC) Dev(57 #XXXX) SwVer(1.651.X/1)												OFFLINE 🔵
Datastreams / Generic CAN Transmit / Transmit Content						ESC Ed	t Option	s Select I	ath Learn	Inegrisation	syncState	******
Slot Frame							2		Carlos Carlos		runMode	******
4 40 poucd1516 convert using y=(1*x)+0 to the range 0256 (No Units, Unsigned)			Slot								rpm	*****
											ppsFinal	*****
											rps1 mao1	
		SPARE	SPARE	SPARE	SPARE						prp1	
		SPARE	SPARE	SPARE	SPARE						turboSpeed1	******
		SPARE	SPARE	SPARE	SPARE						act1	******
		SPARE	SPARE	SPARE	SPARE						bap	****
				SPARE							ccp1 ecp1	*****
		SPARE	SPARE	SPARE	SPARE						fp1	*****
	8	SPARE	SPARE	SPARE	SPARE						relFp1	*****
		SPARE	SPARE	SPARE	SPARE						lant	*****
	10										eg/Max	
		SPARE	SPARE	SPARE	SPARE						htMay	*****
	12	SPARE	SPARE	SPARE	SPARE						calSwitch	******
	13	SPARE	SPARE	SPARE	SPARE						tcSwitch	******
	14	SPARE	SPARE	SPARE	SPARE						laurchSelectSwitch	******
	15	SPARE	SPARE	SPARE	SPARE						cslOverideActive	******
	16	SPARE	SPARE	SPARE	SPARE						calSelect trSelect	
		SPARE	SPARE	SPARE	SPARE						alsSelect	******
	18	SPARE	SPARE	SPARE	SPARE						launchSelect	******
	g 19										ImpMode	******
	툴 20	SPARE	SPARE	SPARE	SPARE						engineEnable	******
	²¹ 21	SPARE	SPARE	SPARE	SPARE						Collected	
	22	SPARE	SPARE	SPARE	SPARE						fuelFinalP12	******
	23	SPARE	SPARE	SPARE	SPARE						fuelFinalSec1	******
	24	SPARE	SPARE	SPARE	SPARE						Instruction	******
	25	SPARE	SPARE	SPARE	SPARE						ignRinalPri2	
	26	SPARE	SPARE	SPARE	SPARE							
	27	SPARE	SPARE	SPARE	SPARE							
	28	SPARE	SPARE	SPARE	SPARE							
	29	SPARE	SPARE	SPARE	SPARE							
	30	SPARE	SPARE	SPARE	SPARE							
	31	SPARE	SPARE	SPARE	SPARE							
	32	SPARE	SPARE	SPARE	SPARE							
	33	CDADE	COADE	CDADE	COADE							
	25	COADE	CDADE	CDADC	COADE							
	26	COARE	CDADE	CDADC	CDARE							
	37	SPARE	SDARE	SDARE	SDARE							
	38	SPARE	SDARE	SDARE	SDARE							
	39	nduCti0102	duCti0304	oduCt10506	pduCti0708							
	40	pduCti0910	duCtl1112	pduCtl1314	pduCtl1516							

The items can then be set in the Pin assignments to the XPDU Control Items, in this setup XPDU Control #01 would line up to Soft Input #01 in the PDU Setup

Ele Gal Pastecal Device Gauge Worksheet View	ID(GENERIC) Dev(S7 #X000X) SwVer(1.651.X/1							OFFLINE
O Configuration / Pin Assignments			ESC Edit	Options Select Mat	1 Learn	Nearisation	syncState	******
in Use) Outputs : Fan 1 NOT CONNECTED							runTime	*********
A B) Outputs : Engine Speed Controlled B	NOT CONNECTED						rpm and Field	*****
B) Outputs : Exhaust Gas Backgubtion 1	NOT CONNECTED						tps1	*****
B) Outputs : Exhaust Gas Recirculation 2	NOT CONNECTED						map1	****
B) Outputs : Ean 1	NOT CONNECTED						prp1 turboSpeed1	*****
B) Outputs : Fan 2	NOT CONNECTED						ect1	*****
B) Outputs : Fan 3 [HBR3]	NOT CONNECTED						acti	*****
B) Outputs : Eao 4 [NONE]	NOT CONNECTED						ccp1	
B) Outputs : Fan 5	NOT CONNECTED						eop1	
B) Outputs : Fan 6 [HBR4]	NOT CONNECTED						tp1 relFo1	
B) Outputs : Ean 7 [HBR5]	NOT CONNECTED						405	
B) Outputs : Fan 8 [HBR6]	NOT CONNECTED						lam1	*****
B) Outputs : Fuel Pump 1	NOT CONNECTED						vbet	*****
B) Outputs : Euel Pump 2	NOT CONNECTED						btMax	*****
B) Outputs : Euel Pump 3	NOT CONNECTED						calb witch tcSwitch	******
B) Outputs : Full Course Yellow Light	NOT CONNECTED	CPDU CONTROL #01					alsSelectSwitch	xexexe
B) Outputs : Gear Position Neutral Light	NOT CONNECTED	CPDU CONTROL #02					launchSelectSwitch	Nevene
B) Outputs - Gear Position Reverse Light	NOT CONNECTED	CPDU CONTROL #03					calSelect	*****
B) Outputs : Gear Shift Out Request	NOT CONNECTED	CONTROL #04					ttSelect	******
B) Outputs : Gear Shift Down	NOT CONNECTED	CPDU CONTROL #05					alsSelect	xexexe
B) Outputs : Gear Shift System Pressure Control	NOT CONNECTED	CPDU CONTROL #06					tuneSwitch	
B) Outputs : Gear Shift System Pressure Relief Valve Contro	I NOT CONNECTED	CONTROL #07					ImpMode	******
B) Outputs : Gear Shift Throttle Bin	NOT CONNECTED	CPDU CONTROL #08				II	engineenable	
B) Outputs : Gear Shift Throttle Bin Positive Return	NOT CONNECTED	CPDU CONTROL #09				I	btAn	
B) Outputs : Gear Shift Up	NOT CONNECTED	CPDU CONTROL #10					btPwr1	
B) Outputs : Headlight Control	NOT CONNECTED	CPDU CONTROL #11					btPwr2 htMay	
B) Outputs : Heated Screen Control	NOT CONNECTED	CPDU CONTROL #12					astPeak	******
B) Outputs : Idle Control Active	NOT CONNECTED	CPDU CONTROL #13					astPeakIdx	Keke
B) Outputs : Idle Speed Control 1	NOT CONNECTED	CPDU CONTROL #14					an01V	
B) Outputs : Idle Speed Control 2	NOT CONNECTED	CPDU CONTROL #15					an02V	
B) Outputs : Idle Sneed Control 3	NOT CONNECTED	CPDU CONTROL #16					an0.3V	
B) Outputs : Idle Speed Control 4	NOT CONNECTED						ar05V	
B) Outputs : Instrument PWM 01 [instFiv]	NOT CONNECTED	earch : x					an06V	*****
B) Outputs : Instrument PWM 02 [ectMax]	NOT CONNECTED	OK Cancel					an07V an08V	
B) Outputs : Instrument PWM 03 [con1]	NOT CONNECTED						an09V	
B) Outputs : Instrument PWM 04 [ent]	NOT CONNECTED						an10V	
B) Outputs : Instrument PWM 05 [fnMin]	NOT CONNECTED						an12V	*****
B) Outputs : Instrument PWM 06 [CutchEVENPr 1108]	NOT CONNECTED						an13V	*****
B) Outputs : Instrument PWM 07 [eco]	NOT CONNECTED						an14V an15V	
B) Outputs : Instrument PWM 08 [manMav]	NOT CONNECTED						an16V	*****
B) Outputs : Instrument PWM 09 [turboSpeed1DeSpiked]	NOT CONNECTED						enorFlags	********
B) Outputs : Instrument PWM 10 [actMax]	NOT CONNECTED						enorFlags.	0.0.0.0
B) Outputs : Instrument PWM 11 [abt 115]	NOT CONNECTED						sensor/WarningLevel	******
B) Outputs : Instrument PIVM 12 [dtr. [118]	NOT CONNECTED						sensorWarningLight	******
B) Outputs : Instrumentation - Power On Lamn Test	NOT CONNECTED					Iî		
B) Outputs : Knock Centrel Warning	NOT CONNECTED							
B) Outputs : Lambda Heater 1	SLAVEL OUT #08 : A9							
B) Outputs : Lambda Heater 2	NOT CONNECTED							
B) Outputs : Lateral G Negative	NOT CONNECTED							
B) Outputs : Lateral G Positive	NOT CONNECTED							
B) Outputs : Limp Mode High Engine Speed Alarm	NOT CONNECTED							
B) Outputs : Low Battery Voltage Light	NOT CONNECTED							
B) Outputs : Low Engine Oil Pressure Light	NOT CONNECTED							