

# SS 726-WST 2022 49X & 47X Non Functioning Heated Headlamps

## **Applicable Vehicles**

49X & 47X vehicles

## **Symptoms**

Heating function of heated headlamps not functioning possible allowing snow and moisture to accumulate on lens.

## **Issue**

There are alternate possible issues for the failure mode:

- Driver education of functionality and usage of the heated portion of the headlamps
- Wiring and parameter changes in production allowing for non functioning heating of the headlamps due to pin locations on XMC1 & XMC2

## **Solution**

For the first issue, the drivers manuals have been updated to show functionality criteria for heated headlamps

For the second issue:

### **How to Diagnose a Heated Headlamp Wiring or Parameter Issue**

Before checking heated headlamp wiring and parameters, it is necessary to determine which XMC unit the headed headlamps are wired to. If the truck only has one XMC unit, then that unit is XMC1. If there is more than one XMC unit installed on the truck, then it may be necessary to follow the process outlined below to determine which XMC is which.

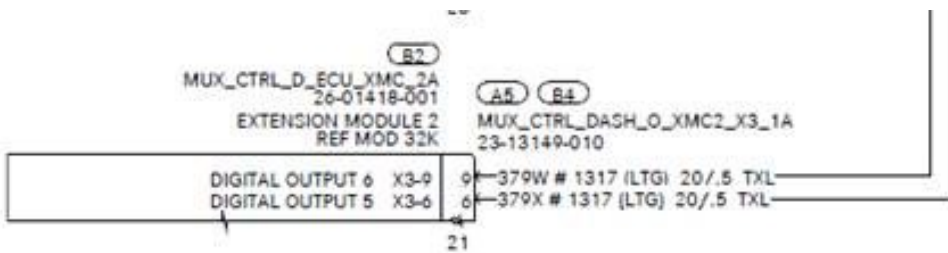
**Note**, it is not recommend skipping this step. The XMC hardware is identical, and the wiring has no poka-yoke features to prevent mis-plugging.

**Procedure to determine XMC #1 and #2:**

1. Open Diagnostic link and ensure you have established a connection to XMC1 and XMC2 (identified as XMC02T and XMC202T)
2. Find the XMC unit assumed to be #1 and physically unplug CAN connector X1 from the back of unit. (This will cause Diagnostic Link to fail to connect)
3. Re-connect via Diagnostic Link.
4. Determine which XMC is unplugged by confirming which XMC (XMC02T or XMC202T) cannot establish a connection to Diagnostic Link.
5. Repeat the process for the other XMC unit to confirm
6. Once confirmed which XMC is which, it is recommend labelling the ECUs and harnesses to prevent any future confusion

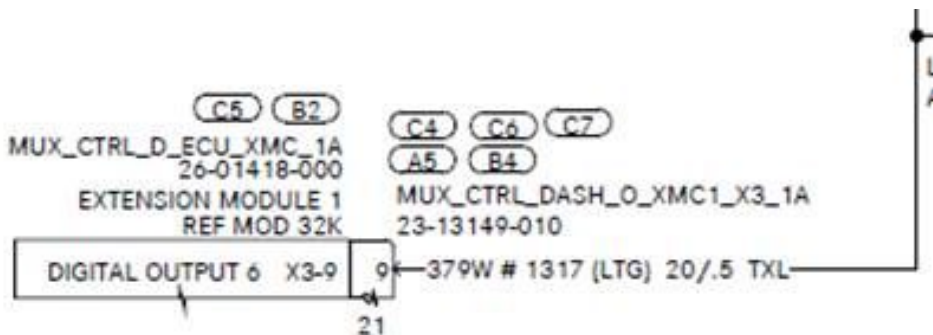
Once determined which XMC is which, examine the wiring to brown connector X3 on each XMC unit, there should be one of two variants:

- Two light green wires to pins 9 and 6 of **XMC2**



**OR...**

- One light green wire to pin 9 of **XMC1**



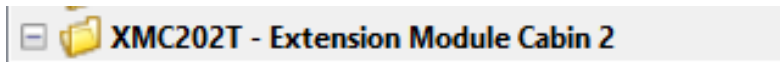
If any other wiring variation, then either the truck was built before series production, the connectors were swapped, or it was mis-wired. Most likely, the brown X3 connectors just got swapped between the two XMC units and can be swapped back, but be careful of any other features

or modifications wired in that may be impacted. If a rewire to XMC1 single pin option is needed, it is recommend using 16 gauge for the spliced wire to pin 9 on XMC1 instead of 20 gauge. This wire may have been undersized and corrected on a future revision.

Once the wiring configurations above are confirmed, and have corrected any issues with the wiring, below are the latest parameters that should be loaded to XMC1 or XMC2 to ensure the heater logic functions correctly. Please select the correct parameters depending on the wiring configuration used above, both shouldn't have to be loaded.

**Parameters for dual pins wired to XMC2 (pre-November 2021 configuration):**

Select XMC2 folder and make sure the following parameters are selected



FSC Logic Block 1\_5: 0254474346-002

FSC Logic Block 1_5	A0244473746-001	tp Enabled, XMC 2 43N	Heated Headlamp Enabled, XMC 2 43N
PFSC_logic_blk0001_in1_hys	(from parent)	A0244473746-001 FSC Logic Block 1_5 Default, Heated Headlamp Enabled, XMC 2 43N	5
PFSC_logic_blk0001_in1_sel	(from parent)	A0254474346-002 Enabled, Heated Headlamp 43N LG2 - Production RC3	5
PFSC_logic_blk0001_in1_thre	(from parent)	A0254474346-001 Enabled, Heated Headlamp 43N LG2 - Production RC2	5
PFSC_logic_blk0001_in2_hys	(from parent)	A0244472546-001 FSC Logic Block 1_5 Disabled, XMC 2 43N	5

FSC Logic Block 16\_20: 0264471146-001

FSC Logic Block 16_20	A0244472846-001	0 Disabled, XMC 2 43N	bled, XMC 2 43N
PFSC_logic_blk0016_in1_hys	(from parent)	A0304473046-001 FSC Logic Block 16_20 81Z-007 42N	
PFSC_logic_blk0016_in1_sel	(from parent)	A0264471146-001 Enabled, Heated Headlamp 43N LG2 - Production RC1	
PFSC_logic_blk0016_in1_thre	(from parent)	A0244472846-001 FSC Logic Block 16_20 Disabled, XMC 2 43N	

FSC Output pin block 1\_12: 0254474546-004

FSC Parameters OutputPinBlock 1_12	A0254474546-003	inout - Production RC4	put - Production RC4
PFSC_output_pin0001_sel	(from parent)	A0254474546-002 Default string 43N LG2 Pinout - Production RC3	
PFSC_output_pin0001_thre	(from parent)	A0304473046-001 FSC OutputPinBlock 1_12 81Z-007 42N	
PFSC_output_pin0002_sel	(from parent)	A0234477946-001 Default string 43N LG2 Pinout FSC XMC 2	
PFSC_output_pin0002_thre	(from parent)	A0254474546-003 Default string 43N LG2 Pinout - Production RC4	
PFSC_output_pin0003_sel	(from parent)	A0304473046-003 OutputPinBlock 1_12 81Z-006 43N SP Trn Sig Mrkr Util Lgt Fix	
PFSC_output_pin0003_thre	(from parent)	A0294479046-002 OutputPintBlock1_12 81Z-801 43N SP Trn Sig and Mrkr Fix	
PFSC_output_pin0004_sel	(from parent)	A0294477946-001 Defaultstring_FSC Output Pin Block 1_12 81Z-801	
PFSC_output_pin0004_thre	(from parent)	A0284478746-001 Defaultstring.HeatedHL	
PFSC_output_pin0005_sel	(from parent)	A0254474546-001 Default string 43N LG2 Pinout - Production RC2	
PFSC_output_pin0005_thre	(from parent)	A0254474546-004 Defaultstring 43N LG2 RC4 ZGS 004	
PFSC_output_pin0006_sel	(from parent)	A0294479446-001 OutputPinBlock 1_12 81Z-006 Utility light pin swap	

FSC Timer block 1\_20: 0254474846-003

FSC Timer Block 1_20	A0234479346-001	tp Enabled, XMC 2 43N	lit, Heated Headlamp Enabled, XMC 2 43N
PFSC_timer0001_en_sel	(from parent)	A0234479346-001 FSC Timer Block 1_20 Default, Heated Headlamp Enabled, XMC 2 43N	
PFSC_timer0001_en_thre	(from parent)	A0254474846-002 Enabled, 43N LG2 - Production RC3	
PFSC_timer0001_initialvalue	(from parent)	A0254474846-003 Enabled, 43N LG2 - Production RC4	
PFSC_timer0001_rst_sel	(from parent)	A0284478846-001 Defaultstring.HeatedHL.TimerDisabled	
PFSC_timer0001_rst_thre	(from parent)	A0254474846-001 Enabled, Heated Headlamps 43N LG2 - Production RC2	
PFSC_timer0002_en_sel	(from parent)	A0244473946-001 FSC Timer Block 1_20 Disabled, XMC 2 43N	
PFSC_timer0002_en_thre	(from parent)	1	NoUnit 0 65535

## Parameters for single pin wired to XMC1 (current production configuration):

Select the XMC1 folder and make sure the following parameters are selected.



FSC CAN Event 1\_32: 0264471946-001

FSC CAN Event 1_32	A0264471946-001	g.CANEvent.HeatedHL	g.CANEvent.HeatedHL
PFSC_can_event0001_id	(from parent)	A0264471946-001 Defaultstring.CANEvent.HeatedHL	
PFSC_can_event0002_id	(from parent)	A0184475646-001 Default (Disabled)	
PFSC_can_event0003_id	(from parent)	A0254472846-001 Enabled 43N LG2 Fixed Pin Config - Production RC2	
PFSC_can_event0004_id	(from parent)	A0234477846-001 Enabled 43N LG2 Fixed Pin Config	

FSC Logic Block 6\_10: 0264472046-001

FSC Logic Block 6_10	A0264472046-001	ck.6-10.Write.HeatedHL	ck.6-10.Write.HeatedHL
PFSC_logic_blk0006_in1_hys	(from parent)	A0264472046-001 Defaultstring.FSC.LogicBlock.6-10.Write.HeatedHL	
PFSC_logic_blk0006_in1_sel	(from parent)	A0184476146-001 Default (Disabled)	
PFSC_logic_blk0006_in1_thre	(from parent)	A0254473046-001 Enabled LG2 Marker Interrupt Logic - Production RC2	

FSC Logic Block 11\_15: 0264472346-001

FSC Logic Block 11_15	A0264472346-001	ck.11-15.Write.HeatedHL	ck.11-15.Write.HeatedHL
PFSC_logic_blk0011_in1_hys	(from parent)	A0264472346-001 Defaultstring.FSC.LogicBlock.11-15.Write.HeatedHL	
PFSC_logic_blk0011_in1_sel	(from parent)	A0184476246-001 Default (Disabled)	

FSC Timer Block 1\_20: 0264472246-001

FSC Timer Block 1_20	A0264472246-001	TimerBlock.HeatedHL	TimerBlock.HeatedHL
PFSC_timer0001_en_sel	(from parent)	A0264472246-001 Defaultstring.TimerBlock.HeatedHL	
PFSC_timer0001_en_thre	(from parent)	A0304474746-002 FSC Timer Block 1_20 42NLG1PS1 ZGS 002	
PFSC_timer0001_initialvalue	(from parent)	A0264472246-002 FSC Timer Block 1_20 Heated HL ZGS 002	
PFSC_timer0001_rst_sel	(from parent)	A0304474746-001 FSC Timer Block 1_20 81Z-007 42NLG1PS1	
PFSC_timer0001_rst_thre	(from parent)	A0184477446-001 Default (Disabled)	

FSC OutputPinBlock 1\_12: A0264472146-001

FSC Parameters OutputPinBlock 1_12	A0264472146-001	Defaultstring.HeatedHL	Defaultstring.HeatedHL
PFSC_output_pin0001_sel	(from parent)	A0264472146-001 Defaultstring.HeatedHL	
PFSC_output_pin0001_thre	(from parent)	A0194474946-001 Enabled 43N LG2 Fixed Pin Config	
PFSC_output_pin0002_sel	(from parent)	A0184477146-001 Default (Disabled)	
PFSC_output_pin0002_thre	(from parent)	A0254476246-001 Default string 43V Pinout - Production	
PFSC_output_pin0003_sel	(from parent)	A0254476646-001 Default string 44S Pinout - Production	
PFSC_output_pin0003_thre	(from parent)	A0314476246-001 EMG Default Output Pins	
PFSC_output_pin0004_sel	(from parent)	A0254473346-001 Enabled 43N LG2 Fixed Pin Config - Production RC2	

Labels :

49X

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