

AMF Sequence Test for SEM A & B

This testing will confirm that the AMF will not disarm correctly when there is not enough battery power to fully boot-up the SEM PLC. In the cases where the PLC cannot operate, the AMF sequence will continue to restart and cycle when AMF all conditions are met.

NOTE: The AMF card in the PLC rack has a delay before AMF activation of 12-15 seconds once all the AMF conditions are met.

Section 1 –Test SEM A & B**Set Up For****WITH THE SEM BELL HOUSING REMOVED****Verify**

Replace both 9V batteries with two 9V power supplies.
Configure SEM A power supply to provide up to 7 Amps at 9 V

Configure SEM B power supply to provide up to 4 Amps at 8.4 V

Replace the 27 V batteries with one 27V power supply
Configure the 27V power supply to provide 27 V and up to 3 Amps

Connect PETU

Select the SEM A modem with the PETU modem switch.

Connect 4-20mA simulator to side-connector that supplies the Conduit Supply analog channel (TP9, pin 11). Use the pin from the same connector that connected to the 5th pin of the AMF card to provide +24 volts. Or use Enerpac to adjust pressure through the Transducer.

Connect 4-20mA simulator to side-connector that supplies the Hydrostatic Pressure analog Channel (TP10, pin 12). Or use Enerpac to adjust pressure through the Transducer.

Connect solenoids as required by the AMF sequence.

Function Name	Solenoid Function Number	Solenoid Pie Connector	Verify
LMRP Stinger Extend	50	6C	
Stack Stinger Extend	107	8A	

Testing on the Deepwater AMF sequence
Would not switch the AMF on
Worley

LMRP Stinger Seals Energize	52	6E	
Stack Stinger Seals Energize	109	8C	
De-activate LMRP Stinger Extend	50	6C	
De-activate Stack Stinger Extend	107	8A	
High Pressure Blind Shear Ram	103	8E	
De-activate High Pressure Blind Shear Ram	103	8E	

Adjust hydrostatic head pressure TP10 simulator to 10.3mA

Or adjust to 2000 psig using Enerpac

Check raw value with Win Tsim

SEM A

SEM B

Analog Channel? _____

Adjust conduit supply pressure TP9 simulator to 14.4mA

Or adjust to 8000 psig using Enerpac

Check raw value with Win Tsim

SEM A

SEM B

Analog Channel? _____

AMF activate/deactivate - check analogue data

Verify

Function SEM A AMF to deactivate/unarm. Confirm that analog channel has a value of 900+/-60

Function SEM A AMF to activate/arm and confirm that corresponding analog has a value of 0-30

Function SEM B AMF to deactivate/unarm. Confirm that analog channel has a value of 900+/-60

Function SEM B AMF to activate/arm and confirm that corresponding analog has a value of 0-30

Test 1

1. Turn off the power to the SEM A and SEM B at the PETU main switch, confirm for 30 seconds AMF does not activate.

2. Confirm that the 27V supply is now pulsing the simulator for TP9 Conduit Supply. Check the 27 Volt supply display for current flow. _____
3. Lower simulated pressure to TP9 (Conduit Supply) and confirm AMF sequence activates within 15 seconds. _____
4. Confirm SEM A sequence as per function table and that the sequence is complete within _37_ seconds after first initializing. Verify assigned solenoids have functioned by opening bleed ports on the designated POD values. (Refer to rig/SEM specific shutdown.asc file to determine correct time in seconds.) _____
5. Confirm SEM B PLC is unable to complete the boot-up sequence and does not activate. Check SEM B's PLC CPU indicator lights. The CPU indicator light will show a low power fault. _____
6. Once SEM A PLC is complete confirm no other solenoids function for 1 minute. _____
7. Wait three minutes before powering SEM back up, to allow AMF circuitry to cool down _____
8. Turn on the PETU and Confirm SEM B initiates sequence as per function table and that the sequence is complete within _37_ seconds after first initializing. Verify assigned solenoids have functioned by opening bleed ports on the designated POD values. (Refer to rig/SEM specific shutdown.asc file to determine correct time in seconds.) _____
9. Turn off the PETU and wait three minutes before powering SEM back up, to allow AMF circuitry to cool down _____

Reset system for next test

(Wait three minutes before powering SEM back up, to allow AMF circuitry to cool down)

Turn on PETU power to SEM A.

Confirm that the AMF analog channel indicates the AMF is disarmed. Value should be 900+/-60. _____

Function AMF SEM A solenoid to activate/arm and confirm that corresponding analog channel has Value of 0-30. _____

Turn on PETU power to SEM B.

Confirm that the AMF analog channel indicates the AMF is disarmed. Value should be 900+/-60. _____

Function AMF SEM B solenoid to activate/arm and confirm that corresponding analog channel has Value of 0-30. _____

Last Step

Verify that the AMF-controller is deactivated when this FAT is finished.

Switch power ON at the PETU

Send a valve command to deactivate the AMF

Check the raw value

If the AMF is inactive the analog value should be between 700....1000

End Test

Verify
