[4.2 Driver Focused Mode (DFM) 2](#_Toc517265375)

[4.2.1 Signals and Parameters 2](#_Toc517265376)

[Table A 3](#_Toc517265377)

[*Values are in voltage (continuous)* 3](#_Toc517265378)

[*Offset should be applied linearly over specified time* 3](#_Toc517265379)

[Table B 3](#_Toc517265380)

[*Values are in voltage (continuous)* 3](#_Toc517265381)

[*Offset should be applied linearly over specified time* 3](#_Toc517265382)

[Table C 3](#_Toc517265383)

[*If Drv=Lo/Hi, then Psngr=Lo/Hi, else Psngr = Drv + Table Value* 3](#_Toc517265384)

[Table D 3](#_Toc517265385)

[*Reduce CAF by output of table when in DFM* 3](#_Toc517265386)

[4.2.2 Requirements – Driver Focused Mode Strategy 4](#_Toc517265387)

4.2 Driver Focused Mode (DFM)

**Rationale:**

*This feature is meant to restrict and/or prevent air flow to the passenger side of the vehicle when the front passenger seat is not occupied in order to save energy. Since it is undesirable to restrict/prevent air flow to passenger side under all circumstances an override strategy is supported.*

* + 1. Signals and Parameters

4.2.1.1 Configuration

|  |  |
| --- | --- |
| Name | Value |
| M2C\_DfmPnShutOffDrType | 1-WITHOUT\_FB,  2- WITH\_FB |
| M2C\_DfmFlShutOffDrType | 1-WITHOUT\_FB,  2- WITH\_FB |

4.2.1.2 Calibratable

|  |  |  |
| --- | --- | --- |
| Name | Value | Datatype |
| HMI\_DfmActvDlyTimeout | 0 | Seconds, 0-60s, 0.1s |
| HMI\_DfmInactvDlyTimeout | 2 | Seconds, 0-60s, 0.1s |
| BC\_DfmCoolModeTimeout | 8 | Seconds, 0-60s, 0.1s |
| BC\_DfmHtModeTimeout | 4 | Seconds, 0-60s, 0.1s |
| DD\_DfmFlShutOffDrPctYPsngr | [0,100] | %, 0-100, 0.1 |
| DD\_DfmPnShutOffDrPctYPsngr | [0,100] | %, 0-100, 0.1 |
| HMI\_DfmAmbActvTe | -10 | ºC, -50-100, 0.5 |
| HMI\_DfmAmbInactvTe | -15 | ºC, -50-100, 0.5 |
| BC\_DfmCoolOffstBlwrVoltZ | Ref Table A |  |
| BC\_DfmHtOffstBlwrVoltZ | Ref Table B |  |
| HMI\_DfmOffsetPsngrSetTeY | Ref Table C |  |
| CAF\_ModeDrAirflowFctrY | Ref table D |  |

Table A

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Mode / Blower Voltage** | **0** | **3.75** | **4.5** | **6** | **7.5** | **9.2** | **11** | **12.8** |
| **Panel** | 0.25 | 0.25 | 0.6 | 1 | 1.4 | 2 | 2.7 | 3.8 |
| **Panel/Floor 1** | 0.25 | 0.25 | 0.6 | 1 | 1.4 | 1.7 | 2.4 | 3.8 |
| **Panel/Floor 2** | 0.25 | 0.25 | 0.6 | 1 | 1.4 | 1.7 | 2.4 | 3.8 |
| **Panel/Floor 3** | 0.25 | 0.25 | 0.6 | 1 | 1.4 | 1.7 | 2.4 | 3.8 |
| **Defrost/Panel** | 0.25 | 0.25 | 0.6 | 1 | 1 | 1.4 | 1.7 | 2.3 |
| **Defrost/Panel/Floor** | 0.1 | 0.1 | 0.1 | 0.5 | 0.65 | 0.7 | 1.15 | 2.3 |

*Values are in voltage (continuous)*

*Offset should be applied linearly over specified time*

Table B

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Mode / Blower Voltage** | **0** | **3.75** | **4.5** | **5.5** | **6.5** | **8** | **10** | **12** |
| **Floor** | 0.25 | 0.25 | 0.6 | 0.9 | 1 | 1.2 | 1.3 | 2.1 |
| **Defrost/Floor 1** | 0.25 | 0.25 | 0.6 | 0.9 | 1 | 1.2 | 1.3 | 2.1 |
| **Defrost/Floor 2** | 0.25 | 0.25 | 0.6 | 0.9 | 1 | 1.2 | 1.3 | 2.1 |
| **Defrost/Floor 3** | 0.25 | 0.25 | 0.6 | 0.9 | 1 | 1.2 | 1.3 | 2.1 |
| **Defrost** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*Values are in voltage (continuous)*

*Offset should be applied linearly over specified time*

Table C

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Mode / Pass Temp Offset** | **Floor** | **Def/Fl** | **Defrost** | **Panel** | **PF** | **Def/Pn** | **Def/Pn/Fl** |
|  | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

*If Drv=Lo/Hi, then Psngr=Lo/Hi, else Psngr = Drv + Table Value*

Table D

|  |  |  |
| --- | --- | --- |
| **Mode / DFM Status** | **0** | **1** |
| Panel Modes | 0% | 6% |
| Other Modes | 0% | 12% |
| Windshield Only Mode | 0% | 0% |

*Reduce CAF by output of table when in DFM*

4.2.2 Requirements – Driver Focused Mode Strategy

The DFM strategy uses a timer along with other conditions to determine when airflow to the passenger side of the vehicle can be shut off. It shall be activated when either set of entry conditions are satisfied, but can be overridden via specific user selections.

Airflow to the passenger side of the vehicle is controlled by the addition of one or more air shutoff doors.

If DFM strategy is turned off via override conditions, automatic entry conditions shall not be reconsidered and DFM strategy shall not be automatically re-activated again until Vehicle State transitions from Off, Remote\_Started, Foph\_Start, PEPC or ACV to one of the following states:

No\_LV\_Bus, Crank, Normal\_Run, Autostopped, Factory or Recrank

**Automatic Entry Conditions**

1. Vehicle state = No\_LV\_Bus, Crank, Normal\_Run, Autostopped, Factory or Recrank
2. Air distribution mode is not set to Windscreen only or Max Defrost
3. Outside Air Temperature ≥ HMI\_ DfmAmbientActivation
4. Passenger seat is empty for more than timeout value (HMI\_DFMActiveDelay)

**Manual Entry Conditions**

1. Vehicle state = No\_LV\_Bus, Crank, Normal\_Run, Autostopped, Factory or Recrank
2. Air distribution mode is not set to Windscreen only or Max Defrost
3. User turns DFM on via dedicated DFM button

Once DFM strategy is activated the climate system shall:

* + - * Turn On (if Off) when activated via selection of dedicated DFM button. The climate HMI shall respond as if the power button has been pressed. Otherwise, climate system power state shall not change.
      * Adjust the front passenger’s setpoint temperature to the current driver’s setpoint temperature +/- a calbratable offset value (HMI\_ DfmPsngrTeModeBasedOffst)
* Turn off the front passenger setpoint display
* Adjust the current blower speed +/- a calibratable offset value at a calibratable rate depending on current air distribution mode (BC\_DfmCoolOffstBlwrVoltZ/ BC\_DfmCoolModeTimeout or BC\_DfmHtOffstBlwrVoltZ / BC\_DfmHtModeTimeout). However, this blower offset shall not be applied while any purge strategies(odor, evap, periodic park etc) are active.
* Adjust shut-off doors per calibratable positions (DD\_DfmxxShutOffDrPctYPsngr) to prevent airflow to front passenger side of vehicle whenever the climate system power is on and no purge strategies(odor, evap, periodic park etc) are active. Otherwise, the shut off doors shall not be adjusted to prevent airflow.
* Adjust current calculated airflow +/- a calibratable offset value (CAF\_ModeDrAirflowFctrY) However, this adjustment shall not be applied while any purge strategies(odor, evap, periodic park etc) are active.
* Turn off the passenger side condition seat. (EO will operate in background)

The DFM strategy shall be deactivated when any of the override or exit conditions are satisfied.

Once the DFM strategy is deactivated the climate system shall:

* Continue to operate per current power state
* Return to previous passenger setpoint and Dual status unless DFM is exiting via adjustment of passenger setpoint or Max Defrost in which case passenger setpoint shall change as applicable for these selections
* Turn on the passenger setpoint display per normal operation
* Return to normal blower speed per user selection
* Return to normal door positions whenever the system power is on
* Return to normal calculated airflow value per user selections
* Return to previous passenger heated and/or cooled setting unless DFM is exiting via adjustment of the passenger seat button in which case passenger seat setting shall change from previous setting per normal operation

**HMI Impact(Climate system power = on)**

When DFM is active the front passenger setpoint display shall be turned off and the indicator associated with the DFM button shall be turned on. Dual indicator (if equipped) shall also turn off (if on). Otherwise, front passenger setpoint shall be displayed normally and DFM button indicator shall be off.

**HMI Impact(Climate system power = off)**

None

**Override Conditions**

1. User turns DFM off via dedicated DFM button
2. User turns Dual on
3. User adjusts Passenger setpoint (adjustment shall begin from previous passenger setpoint)
4. User adjusts Passenger heated and/or cooled seat (adjustment shall be made from previous passenger seat setting)

**Exit Conditions**

1. Vehicle state = Off, Remote Started, FOPH\_Start, PEPC, or ACV
2. Any of the required sensor readings are faulty or disabled
3. Air distribution mode is set to Windscreen only
4. Air distribution mode is set to Max Defrost
5. User has not manually turned on DFM strategy via dedicated DFM button and either of the following conditions are satisfied:
6. Outside Air Temperature ≤ HMI\_ DfmAmbientDeactivation
7. Passenger seat is not empty for more than timeout value (HMI\_DFMDeactivateDelay)