# Warning – PRNDL Not In Park-Specific to U725 Bronco – CGEA 1.3

## Functional Description

The purpose of the PRNDL Not In Park Warning feature is to inform the driver that the vehicle is not in Park under certain conditions. First, the PRNDL Not In Park Warning is displayed and a finite chime will sound when the Ignition is in Off/Accy and the TRS is not in Park. A continuous chime will sound when the driver's door is opened. The warning will remain displayed until conditions change or the ePRNDL logic shuts off the cluster. Second, the PRNDL Not In Park Warning is displayed when the Ignition is in Run, the TRS is not in Park, the driver's door is ajar, and the vehicle is stopped. The PRNDL Not In Park Warning is resettable in Run. It is not resettable in Off/Accy.

U725(Bronco) My2021 will have "Doors Off" functionality. In most of the programs Transmission Not in Park warming message/chime uses driver's door OPEN/CLOSED status for determining when to display/chime. As U725(Bronco) My2021 have "Doors Off" functionality and existing spec performance for vehicles without driver's door is not optimized for user experience. U725 program has decided to utilize seatbelt BUCKLED/UNBUCKLED signal to replace driver's door OPEN/CLOSED signal for TNIP and other functions. This STSS is derived from Warning - PRNDL Not In Park CGEA1.3\_v9.0

This update Improves safety warning robustness by allowing TNIP message/chime as soon as seatbelt is unbuckled when driver's door is OFF and ignition is ON.

This feature is controlled by the Automatic Transmission SDS, RQT-070501-006848 (TS-0174).

Note that on Shift By Wire vehicles, this warning will be controlled by the PCM, reference Shift by Wire Control Function - CGEA1.3\_v3.1 or later.

Consideration is given to not trigger this warning when the vehicle is in Neutral Tow mode or Park Lock Control mode. Note that only certain vehicles support Neutral Tow mode or Park Lock Control mode at this time.

The PRNDL Not In Park Warning feature correlates the GearLvrPos\_D\_Actl signal, the LifeCycMde\_D\_Actl signal (for CGEA 1.1/1.2 use CarMode signal), , the Veh\_V\_ActlEng signal, the DrStatDrv\_B\_Actl signal, DrPrsntDrv\_D\_Stat signal andthe Ignition\_Status Signal, the configuration information, and the operational mode to display the appropriate warning display in the message center.

## Interfaces

### Interface Context Diagram (I/O Block Diagram)

Figure 1 Warning – PRNDL Not In Park Warning Function Context Diagram

### Inputs

* + - * INTERNAL:

Operational\_Mode

Neutral\_Tow\_Enabled\_MC\_Status\_Flag

PLC\_Active\_Status\_Flag (see Park Lock Control Function – CGEA 1.3 STSS)

PrkLckCtl\_D\_Allw\_Cfg (see Park Lock Control Function – CGEA 1.3 STSS)

Neutral\_Tow\_Cfg (see Warning – Neutral Tow STSS and Shift By Wire Control Function STSS)

Transmission\_Type\_Cfg

Not\_In\_Park\_Cfg (see Shift By Wire Control Function STSS)

Shift\_By\_wire\_Cfg (see Shift By Wire Control Function STSS)

ePRNDL\_Mode (internal parameter from ePRNDL\_ES. Also a CAN signal)

* MUX message from the CAN bus

1. GearLvrPos\_D\_Actl (HS-CAN) Signal

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Signal Name** | **Size (bits)** | **Detail** | **Units** | **Res.** | **Offset** | **State Encoded** | **Min** | **Max** |
| GearLvrPos\_D\_Actl | 4 |  | SED | 1 | 0 |  | 0 (0x0) | 15 (0xF) |
|  |  | Park |  |  |  | 0x0 |  |  |
|  |  | Reverse |  |  |  | 0x1 |  |  |
|  |  | Neutral |  |  |  | 0x2 |  |  |
|  |  | Drive |  |  |  | 0x3 |  |  |
|  |  | Sport\_DriveSport |  |  |  | 0x4 |  |  |
|  |  | Low |  |  |  | 0x5 |  |  |
|  |  | first |  |  |  | 0x6 |  |  |
|  |  | second |  |  |  | 0x7 |  |  |
|  |  | third |  |  |  | 0x8 |  |  |
|  |  | fourth |  |  |  | 0x9 |  |  |
|  |  | fifth |  |  |  | 0xA |  |  |
|  |  | sixth |  |  |  | 0xB |  |  |
|  |  | Undefined\_Treat\_as\_Fault |  |  |  | 0xC |  |  |
|  |  | Undefined\_Treat\_as\_Fault |  |  |  | 0xD |  |  |
|  |  | Unknown\_Position |  |  |  | 0xE |  |  |
|  |  | Fault |  |  |  | 0xF |  |  |

1. LifeCycMde\_D\_Actl Signal

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Signal Name** | **Size (bits)** | **Detail** | **Units** | **Res.** | **Offset** | **State**  **Encoded** | **Min** | **Max** |
| LifeCycMde\_D\_Actl(1) | 4 |  | SED | 1 | 0 |  | 0 (0x0) | 15 (0xF) |
|  |  | Normal |  |  |  | 0x0 |  |  |
|  |  | Factory |  |  |  | 0x1 |  |  |
|  |  | NotUsed |  |  |  | 0x2 |  |  |
|  |  | Transport |  |  |  | 0x3 |  |  |

1. For CGEA 1.1/1.2 use CarMode signal.
2. Veh\_V\_ActlEng Signal

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Signal Name** | **Size (bits)** | **Detail** | **Units** | **Res.** | **Offset** | **State**  **Encoded** | **Min** | **Max** |
| Veh\_V\_ActlEng | 16 |  | KPH | 0.01 | 0 |  | 0 (0x0000) | 655.35 (0xFFFF) |

1. VehVActlEng\_D\_Qf Signal

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Signal Name** | **ID** | **Size (bits)** | **Pos. (bits)** | **Detail** | **Units** | **Res.** | **Offset** | **State**  **Encoded** | **Min** | **Max** |
| VehVActlEng\_D\_Qf | 0x201 | 2 | 14 |  | SED | 1 | 0 |  | 0 (0x0) | 3 (0x3) |
|  |  |  |  | Faulty |  |  |  | 0x0 |  |  |
|  |  |  |  | No\_Data\_Exists |  |  |  | 0x1 |  |  |
|  |  |  |  | Not\_Within\_  Specifications |  |  |  | 0x2 |  |  |
|  |  |  |  | OK |  |  |  | 0x3 |  |  |

1. DrStatDrv\_B\_Actl Signal

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Signal Name** | **Size (bits)** | **Detail** | **Units** | **Res.** | **Offset** | **State**  **Encoded** | **Min** | **Max** |
| DrStatDrv\_B\_Actl | 1 |  | SED | 1 | 0 |  | 0 (0x0) | 1 (0x1) |
|  |  | Closed |  |  |  | 0x0 |  |  |
|  |  | Ajar |  |  |  | 0x1 |  |  |

1. Ignition\_Status Signal

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Signal Name** | **Size (bits)** | **Detail** | **Units** | **Res.** | **Offset** | **State Encoded** | **Min** | **Max** |
| Ignition\_Status | 4 |  | SED | 1 | 0 |  | 0 (0x0) | 15 (0xF) |
|  | Unknown |  |  |  | 0x0 |  |  |
|  | Off |  |  |  | 0x1 |  |  |
|  | Accessory |  |  |  | 0x2 |  |  |
|  | Run |  |  |  | 0x4 |  |  |
|  | Start |  |  |  | 0x8 |  |  |
|  | Invalid |  |  |  | 0xF |  |  |

1. DrPrsntDrv\_D\_Stat Signal

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Signal Name** | **Size (bits)** | **Detail** | **Units** | **Res.** | **Offset** | **State Encoded** | **Min** | **Max** |
| DrPrsntDrv\_D\_Stat | 2 |  | SED | 1 | 0 |  | 0 (0x0) | 3 (0x3) |
|  | NotDetermined |  |  |  | 0x0 |  |  |
|  | NotPresent |  |  |  | 0x1 |  |  |
|  | Present |  |  |  | 0x2 |  |  |
|  | Faulty |  |  |  | 0x3 |  |  |

1. FirstRowBuckleDriver Signal

| **Signal Name** | **Size (bits)** | **Detail** | **Units** | **Res.** | **Offset** | **State Encoded** | **Min** | **Max** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| FirstRowBuckleDriver | 2 |  | SED | 1 | 0 |  | 0 (0x0) | 3 (0x3) |
|  |  | Faulty |  |  |  | 0x0 |  |  |
|  |  | Belted |  |  |  | 0x1 |  |  |
|  |  | Unbelted |  |  |  | 0x2 |  |  |
|  |  | Unknown |  |  |  | 0x3 |  |  |

### Outputs

* PRNDL\_Not\_In\_Park\_MC\_Status\_Flag that is used to control the Warning displayed in the message center.
* PRNDL\_Not\_In\_Park\_Chime\_Status\_Flag that is used by the Chime Arbitrator (Finite chime)
* PRNDL\_Not\_In\_Park\_Chime\_Status\_Flag2 that is used by the Chime Arbitrator (Continuous chime when ignition is Off/Acc and Driver door ajar)

## Function/Performance

### Operational Modes

|  |  |
| --- | --- |
| **Mode** | **Differentiating Vehicle Conditions** |
| Sleep Mode | OFF |
| Limited Mode | PRNDL Not In Park Control Function Text Messages/Chime OFF/ON |
| Normal Mode | PRNDL Not In Park Control Function Text Messages/Chime OFF/ON |
| Crank Mode | PRNDL Not In Park Control Function Text Messages/Chime OFF/ON |

### Voltage Levels

Refer to the Cluster Features Table located in the Operational Modes and Voltage Range Strategies Section of this SPSS.

### Human-Machine Interface

#### Visual

###### Indicator Graphics / Display Format

Refer to Message Center Function description reference "BEF Display 2x14 Text Message List.xls" file Message ID W605 and W606.

###### 1.3.3.1.2 Indicator Color Coordinates

Reference section COLOR & ILLUMINATION REQUIREMENTS (GRAPHICS)

#### 1.3.3.1.3 Indicator Characteristics

Refer to Message Center X Display\_Y Button Interface Section, where X and Y are appropriate values in this document.

#### Audio

Refer to the Chimes & Chime Arbitrator Section in this SPSS. Multiple repetitions of DNA Chime B (Soft Warning) is requested in all ignition states. Continuous repetitions of DNA Chime B (Soft Warning) is requested in ignition Off/Acc.

#### Switch Control Logic

Consumer access to Message Center Warnings shall be as specified in the message center basic functionality display as specified in Message Center X Display\_Y Button Interface Section, where X and Y are appropriate values in this document.

### System Accuracy

* The state of the chime flags shall change within 100 msec of a state change as indicated in the state matrix found in section 1.3.5.1 of this document
* The state of the message center flags shall change within 100 msec of a state change as indicated in the state matrix found in section 1.3.5.1 of this document

### Operation: Performance and Functional

#### Subsystem Algorithm Flowchart / State Diagram



1. PRNDL\_Not\_In\_Park\_MC\_Status\_Flag for U725 Bronco

**For clusters configured as Non Shift By Wire (Shift\_By\_Wire\_Cfg = Disabled)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Operational Mode** | **Shift\_By\_**  **Wire\_Cfg** | **ePRNDL\_**  **Mode** | **Transmission**  **\_ Type\_Cfg** | **PrkLckCtl**  **\_D\_Allw\_**  **Cfg** | **PLC\_Active\_**  **Status\_Flag** | **Neutral\_**  **Tow\_Cfg** | **Neutral\_Tow\_**  **Enabled\_MC\_**  **Status\_Flag** | **DrPrsntDrv**  **\_D\_Stat** | **DrStatDrv\_**  **B\_Actl** | **FirstRow**  **BuckleDriver** | LifeCycMde  \_D\_Actl(1) | Veh\_V\_ActlEng | VehVActlEng\_D\_Qf | **GearLvrPos\_D\_Actl** | **PRNDL\_Not\_In**  **\_Park\_MC\_**  **Status\_Flag** | **PRNDL\_Not\_**  **In\_Park\_Chime\_**  **Status\_Flag** | **PRNDL\_Not\_**  **In\_Park\_Chime\_**  **Status\_Flag2** |
| Limited | 0x0  (Disabled) | 0x1 (On) | 0x0  (Automatic) | 0x0 | X | 0x0  (Disabled) | X | 0x2(Present) | Ajar (0x1) | X | <>Factory (0x1) | <5 km/h  (< 0x1F4) | X | 0x1-0xD, 0xF  (i.e. not “Park” or “Unknown”) | True | 0x0 (Inactive) | 0x1 (Active) |
| 0x1  (Enabled) | 0x0 (Inactive) | Ajar (0x1) | True | 0x0 (Inactive) | 0x1 (Active) |
| 0x1 or  0x2 or 0x3 | 0x0 (Inactive) | X | X | Ajar (0x1) | True | 0x0 (Inactive) | 0x1 (Active) |
| 0x0 | X | 0x0  (Disabled) | X | Closed (0x0) | True | 0x1 (Active) | 0x0 (Inactive) |
| 0x1  (Enabled) | 0x0 (Inactive) | Closed (0x0) | True | 0x1 (Active) | 0x0 (Inactive) |
| 0x1 or  0x2 or 0x3 | 0x0 (Inactive) | X | X | Closed (0x0) | True | 0x1 (Active) | 0x0 (Inactive) |
| Normal  or Crank | 0x0 | X | 0x0  (Disabled) | X | Ajar (0x1) | 0x2 or 0x3  (i.e. “Not\_Within\_  Specifications” or “OK”) | True | 0x1 (Active) | 0x0 (Inactive) |
| 0x1  (Enabled) | 0x0 (Inactive) | Ajar (0x1) | True | 0x1 (Active) | 0x0 (Inactive) |
| 0x1 or  0x2 or 0x3 | 0x0 (Inactive) | X | X | Ajar (0x1) | True | 0x1 (Active) | 0x0 (Inactive) |
| Limited | 0x0  (Disabled) | 0x1 (On) | 0x0  (Automatic) | 0x0 | X | 0x0  (Disabled) | X | <> 0x2  or  missing as per 1.4.1 | X | ~~Unbelted (0x2)~~  X | X | True | 0x0 (Inactive) | 0x1 (Active) |
| 0x1  (Enabled) | 0x0 (Inactive) | ~~Unbelted (0x2)~~  X | True | 0x0 (Inactive) | 0x1 (Active) |
| 0x1 or  0x2 or 0x3 | 0x0 (Inactive) | X | X | ~~Unbelted (0x2)~~  X | True | 0x0 (Inactive) | 0x1 (Active) |
| ~~0x0~~ | ~~X~~ | ~~0x0~~  ~~(Disabled)~~ | ~~X~~ | ~~Belted (0x1)~~ | ~~True~~ | ~~0x1 (Active)~~ | ~~0x0 (Inactive)~~ |
| ~~0x1~~  ~~(Enabled)~~ | ~~0x0 (Inactive)~~ | ~~Belted (0x1)~~ | ~~True~~ | ~~0x1 (Active)~~ | ~~0x0 (Inactive)~~ |
| ~~0x1 or~~  ~~0x2 or 0x3~~ | ~~0x0 (Inactive)~~ | ~~X~~ | ~~X~~ | ~~Belted (0x1)~~ | ~~True~~ | ~~0x1 (Active)~~ | ~~0x0 (Inactive)~~ |
| Normal  or Crank | 0x0 | X | 0x0  (Disabled) | X | Unbelted (0x2) | 0x2 or 0x3  (i.e. “Not\_Within\_  Specifications” or “OK”) | True | 0x1 (Active) | 0x0 (Inactive) |
| 0x1  (Enabled) | 0x0 (Inactive) | Unbelted (0x2) | True | 0x1 (Active) | 0x0 (Inactive) |
| 0x1 or  0x2 or 0x3 | 0x0 (Inactive) | X | X | Unbelted (0x2) | True | 0x1 (Active) | 0x0 (Inactive) |
| All Other Cases | | | | | | | | | | | | | | | False | 0x0 (Inactive) | 0x0 (Inactive) |

1. Notes: 1. For CGEA 1.1/1.2 use CarMode signal.
2. Note that chime will re-trigger in Limited Mode when Driver’s door is opened (DrStatDrv\_B\_Actl transitions from (0x0)Closed to (0x1)Ajar) since you are changing from PRNDL\_Not\_In\_Park\_Chime\_Status\_Flag = True to PRNDL\_Not\_In\_Park\_Chime\_Status\_Flag2 = True.
3. PRNDL\_Not\_In\_Park\_MC\_Status\_Flag to MC Warning Message ID

|  |  |  |
| --- | --- | --- |
| **Operational Mode** | **PRNDL\_Not\_In\_Park\_MC\_Status\_Flag** | **MC Warning Message ID** |
| Limited | True | W605 (NR) |
| Normal or Crank | True | W606 (SC\*) |
| All other cases | | None |

#### Operation Description (supports algorithm flowchart /state diagram)

* Message Center Warning ID W606 and the PRNDL\_Not\_In\_Park Chime will both be Active whenever PRNDL\_Not\_In\_Park\_MC\_Status\_Flag is True and the operational mode is Normal/Crank.
* Message Center Warning ID W605 and the PRNDL\_Not\_In\_Park Chime will both be Active whenever PRNDL\_Not\_In\_Park\_MC\_Status\_Flag is True and the operational mode is Limited.
* For definition of how the Message Center arbitrates and displays Active warnings, see the Warning / Alert Display Logic Diagram, located in the Message Center – X Display with Y Button Interface section of this SPSS (where X and Y are appropriate values in this document).

#### Function Safety Classification (EMC)

Class B

#### Memory Storage

| **Parameter Name** | **Description** | **Value at**  **Battery Connect** | **Value at**  **Module**  **Wake-up** |
| --- | --- | --- | --- |
| ePRNDL\_Mode | CAN signal (and internal parameter) in cluster that indicates when ePRNDL Mode is active. Reference ePRNDL ES. | See ePRNDL\_ES | See ePRNDL\_ES |
| PRNDL\_Not\_In\_Park\_MC\_Status\_Flag | Used to control the state of the warning to the Message Center arbitrator | INACTIVE (0x0) | INACTIVE (0x0) |
| PRNDL\_Not\_In\_Park\_Chime\_Status\_Flag | Used to control the state of the finite chime to the Chime arbitrator | INACTIVE (0x0) | INACTIVE (0x0) |
| PRNDL\_Not\_In\_Park\_Chime\_Status\_Flag2 | Used to control the state of the continuous chime to the Chime arbitrator | INACTIVE (0x0) | INACTIVE (0x0) |
| Neutral\_Tow\_Cfg | State Indicator for feature presence controlled via CAN at EOL at VO plant. Defaulted to DISABLED at supplier manufacturing. | Use Stored Value | Use Stored Value |
| Transmission\_Type\_Cfg | State Indicator for feature presence controlled via CAN at EOL at VO plant. Defaulted to Automatic at supplier manufacturing. | Use Stored Value | Use Stored Value |
| Not\_In\_Park\_Cfg | State Indicator for Not In Park warning controlled via CAN at EOL at VO plant. Defaulted to Enabled at supplier manufacturing. Enabled means IPC controls the warning. Disabled means the PCM is controlling the warning. | Use Stored Value | Use Stored Value |
| Operational\_Mode | 4 state indicator for cluster operational mode | Limited | Limited or Normal or Crank |
| Shift\_By\_Wire\_Cfg | State Indicator for feature presence controlled via CAN at EOL at VO plant. Defaulted to DISABLED at supplier manufacturing. See Shift By Wire Control Function STSS. | Use Stored  Value | Use Stored  Value |
| PrkLckCtl\_D\_Allw\_Cfg | Indicates if Park Lock Control (Electronic BTSI Manual Override) is jurisdictionally allowable in the vehicle for either ASEAN parking usage or NA flat towing.  Controlled via CAN at EOL at VO plant. Set to 0x0 (LESS PARK LOCK CONTROL) at Cluster Supplier Manufacturing Plant. See Park Lock Control Function STSS. | Use Stored Value | Use Stored Value |
| PLC\_Active\_Status\_Flag | Output used to indicate that the Park Lock Control feature is active, and thus suppress other transmission not in park style warnings. Used by Warning – PRNDL Not In Park STSS and Warning – Passive Entry / Passive Start Immobilizer STSS to suppress warnings when in Park Lock Control. See Park Lock Control Function STSS. | Inactive | Do Not Init |
| Veh\_V\_ActlEng | Vehicle speed as received over CAN | 0x0 | 0x0 |
| VehVActlEng\_D\_Qf | Quality factor of vehicle speed as received over CAN | No\_Data\_Exists (0x1) | No\_Data\_Exists (0x1) |
| DrStatDrv\_B\_Actl | Driver's door CAN Signal sent from the BCM | Closed (0x0) | Closed (0x0) |
| DrPrsntDrv\_D\_Stat | Driver's door Present CAN Signal sent from the BCM | Present (0x2) | Present(0x2) |
| FirstRowBuckleDriver | Signal to determine Driver buckle status | Belted (0x1) | Belted (0x1) |
| LifeCycMde\_D\_Actl(1) | Signal to used to determine whether vehicle is in Factory mode. | Normal (0x0) | Normal (0x0) |
| GearLvrPos\_D\_Actl | Automatic Transmission Gear Lever Position (Driver Selected Gear Lever Position, except for PARK). PARK is now actual confirmed versus unconfirmed requested. This is true starting with 10, 9, and 8 speed Automatic Transmissions due to hardware changes. CAN signal from PCM | 0xE | 0xE |
| Neutral\_Tow\_Enabled\_MC\_Status\_Flag | State variable used by M/C Warning Arbitrator (Note This flag is set in either the Shift by Wire Control Function spec or the Warning - Neutral Tow spec.) | Inactive | Do Not Init  Value must be stored in battery backup memory |

(1) For CGEA 1.1/1.2 use CarMode signal.

#### Prove Out

No.

#### Reconfigurable Telltale

###### No.

#### Message Center Msg

Refer to Message Center Function description reference "BEF Display 2x14 Text Message List.xls" file Message ID W605 and W606.

## Error Handling

### Missing Message/Undefined Data Strategy

The signals will be declared missing as per the Diagnostics section of this SPSS.

DTCs states and history will be determined as per the Diagnostics section of this SPSS.

If Transmission\_Type\_Cfg is Manual, DTC C10000 and DTC C14000 shall never be logged for this feature.

### Invalid Message Strategy

Reference Speedometer STSS for handling of VehVActlEng\_D\_Qf. Note that this signal is only evaluated in Normal/Crank operational modes.

## Diagnostics

### Self Test

None

### Engineering Test Mode

Reference section “Dealer / Engineering Test Mode (ETM)”

### Part II Performance

**Supported Diagnostic DIDs (Service $22 and $2F)**

**Supported Diagnostic Trouble Codes (DTCs)**

|  |  |  |
| --- | --- | --- |
| **DTC** | **Description** | **When Logged** |
| C10000 | Lost communication with ECM/PCM | Message missing for more than 5 seconds. |
| C14000 | Lost Communication With Body Control Module | Message missing for more than 5 seconds. |

**DID DExx Configuration**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Block**  **Num** | **Block Description** | **Byte(s)** | **Bits** | **State: Description** | **"0"** | **"1"** | **Default** | **Comments/Information** |
| PACKETED BLOCKS | |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| $DE01 | Option Content (B&A) | \* | \* | Neutral Tow | Disabled | Enabled | Disabled |  |
|  |  |  |  |  |  |  |  |  |
| $DE02 | Option Content (B&A) | \* | \* | Transmission\_Type\_Cfg | Automatic | Manual | 0 (Automatic) |  |
|  |  |  |  |  |  |  |  |  |
| $DE01 | Option Content (B&A) | \* | \* | Not\_In\_Park\_Cfg | Disabled | Enabled | Enabled | Feature only Disabled on SBW vehicles where PCM controls this warning. |
|  |  |  |  |  |  |  |  |  |
| $DE02 | Option Content (B&A) | \* | \* | Shift By Wire | Disabled | Enabled | Disabled | Defined in Shift By Wire Control Function STSS.  **NOTE: PrkLckCtl\_D\_Allw\_**  **Cfg and Shift By Wire are mutually exclusive. If PrkLckCtl\_D\_Allw\_**  **Cfg is 0x1, 0x2, 0x3, then Shift By WIre is Disabled.** |
|  |  |  |  |  |  |  |  |  |
| $DE03 | Option Content (B&A) | \* | \* | PrkLckCtl\_D\_Allw\_  Cfg | encoded | encoded | 0x0 | Indicates if Park Lock Control (Electronic BTSI Manual Override) is jurisdictionally allowable by the PDL (for either Sustained Enable ASEAN parking usage [A8HAB] or Temporary Enable FNA flat towing usage [A8HAC]), and additionally for flat towing, if all other vehicle subsystems are compatable with prolonged key-out Four-Wheel-Down towing.  This feature is only available on vehicles with Automatic Transmissions.  See Park Lock Control Function STSS for full definition. |
|  |  |  | 00 – LESS\_PARK\_  LOCK\_CONTROL | encoded | encoded |  |  |
|  |  |  | 01 - ALLW\_SUST\_ENBL\_FOR\_PARKING | encoded | encoded |  | This config setting is only for certain Asia-Pacific countries. **This setting violates FMVSS 114 and can never be Enabled for FNA. When set to 01, Neutral Tow Cfg MUST be set to Disabled.** |
|  |  |  | 10 – ALLW\_TEMP\_ENBL\_FOR\_TOWING | encoded | encoded |  | This setting is allowed for FMVSS/CMVSS for North America. **When set to 10, Neutral Tow Cfg MUST be set to Disabled.** |
|  |  |  | 11 – ALLW\_FOR\_EITHER\_PARKING\_OR\_TOWING | encoded | encoded |  | This config setting is only for certain Asia-Pacific countries. **This setting violates FMVSS 114 and can never be Enabled for FNA. When set to 11, Neutral Tow Cfg MUST be set to Disabled.** |
|  |  |  |  |  |  |  |  |  |
|  | \*Byte and bit location to be identified in Part II Specification for this cluster |  |  |  |  |  |  |  |

## Reference Specification

PRNDL Not In Park CGEA1.3\_v9.0.docm

## Revision History

**SPSS Module Revision History**

|  |  |  |  |
| --- | --- | --- | --- |
| **Revision Level** | **Name** | **Change Description** | **Date** |
| 1.0 | H Sharma | Initial Release : This request was brought to DICC by Jim Nichols and approved to spec on 03/22/2018. This STSS is derived from base STSS “Warning - PRNDL Not In Park CGEA1.3\_v9.0.docm” and modified for the U725 Bronco since the doors can be removed and we use seatbelt status to determine Transmission Not in Park warning status rather than Door Status. Changes from baseline are marked in Turquoise color. | 01/11/2019 |
| 1.1 | S. Watkins | This update is to clarify handling of Quality Factors in ignition OFF. Vehicle Speed uses 2 CAN signals. A data signal and a QF (Quality Factor). These same changes were made to STSS “Warning - PRNDL Not In Park CGEA1.3\_v9.1.docm”.  This is a PRA for campaign 19Y05: 2019 Mustang/ Expedition Low Level Cluster Not in Park Warning as well as FER Class 1 AIMS # 3761406.  The issue occurred with 1 supplier because of this history:   1. This is the first (and only one at this time) STSS that requires that you look at vehicle speed with ignition off. During ignition off, the PCM may set the associated Qf to 0x1 (No\_Data\_Exists). 2. However, the supplier had a Q&A answer from 2012 (when vehicle speed was only looked at in RUN) that said to always look for a Qf of 0x2 or 0x3 for valid speed. (ignition states were not mentioned). 3. Thus, during OFF, the supplier mistook the Qf for 0x1 as an issue, and went to the “all other cases” row and turned off the warning when it should have been shown.   The solution is to explicitly require that the vehicle speed Qf NOT be evaluated during OFF. (i.e. only the actual vehicle speed signal Veh\_V\_ActlEng is used for this feature when in OFF).  Changes in green:   1. Section 1.3.5.1. - Table 1.8, PRNDL\_Not\_In\_Park\_MC\_Status\_Flag for U725 Bronco – Added new column for VehVActlEng\_D\_Qf. 2. Section 1.4.2 – Invalid Message Strategy – Added note that VehVActlEng\_D\_Qf is only evaluated in Normal/Crank. | 1/19/2020 |
| 2.0 | S. Watkins | During vehicle prototype testing, it was discovered that when ignition is switched to OFF, the BCM only holds up the RCM for 1s-2s. Thus, if the driver unbuckles 3s later, the signal is never sent on the CAN bus.  This required the team to re-evaluate the “Doors Off” strategy, and it was agreed upon to no longer look at buckle status with ignition off. This means that when the ignition is off, we immediately go to the 30 minute chime. (Instead of original intent of 10s chime when buckled in off, and then 30 minute chime once unbuckled).  Meeting held 3/31/2019. Jim Nichols as feature owner agreed for Campaign Prevent, and rest of team agreed there should be no TGW increase due to this change.  This update resolves:  U725 AIM 3782106 - Fresh Eyes: "Transmission Not in Park" warning Chime does not restart when seatbelt is UNBUCKLED  Spec approved offline.  Changes in yellow:   1. Table 1.8 PRNDL\_Not\_In\_Park\_MC\_Status\_Flag for U725 Bronco – In the ignition OFF case, deleted the 3 rows for “buckled”. Also, updated the 3 rows for “unbuckled” to “X” (don’t care’s). | 3/31/2020 |
| 2.1 | H. Sharma | This update is based on query from Visteon to explicitly define condition when Driver door is not present. Table 1.8 PRNDL\_Not\_In\_Park\_MC \_Status\_Flag for U725 Bronco is updated to specify behavior when driver door ‘DrPrsntDrv\_D\_Stat’ is not present.  DICC tracking # NA  Change marked in Orange Color | 09/18/2020 |