**FanSpd\_VD**

## 1.基本信息

### 1.1.目的

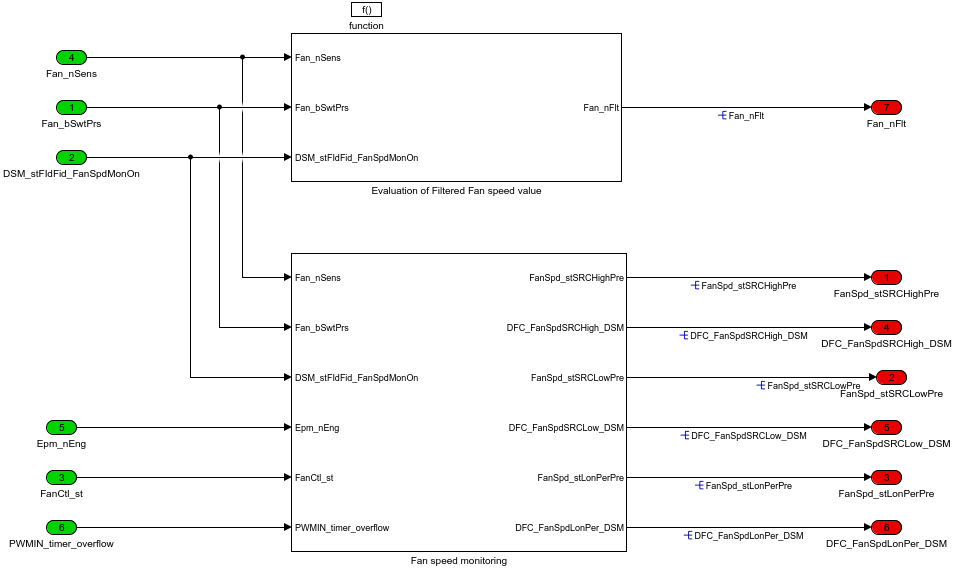
冷却风扇转速滤波处理和转速监测。

### 1.2.参考

FanCtl\_Spd；Fans\_ClgDem ；Fans\_trq；Fan\_DD；Fan\_VD；FanSpd\_DD；FanSpd\_VD

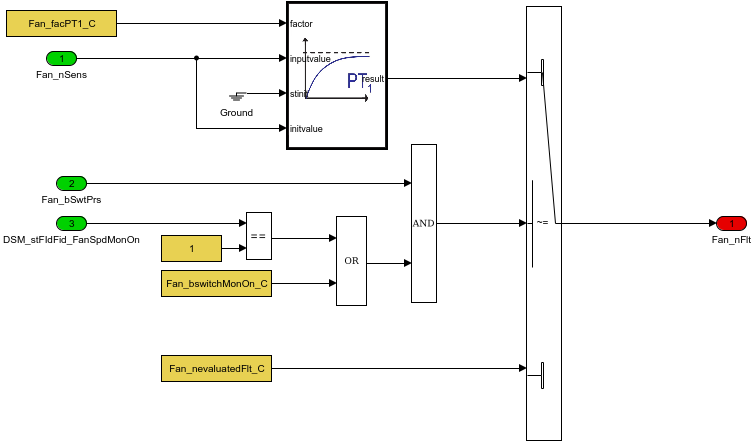
## 2.功能描述

### 2.1.Top level overview



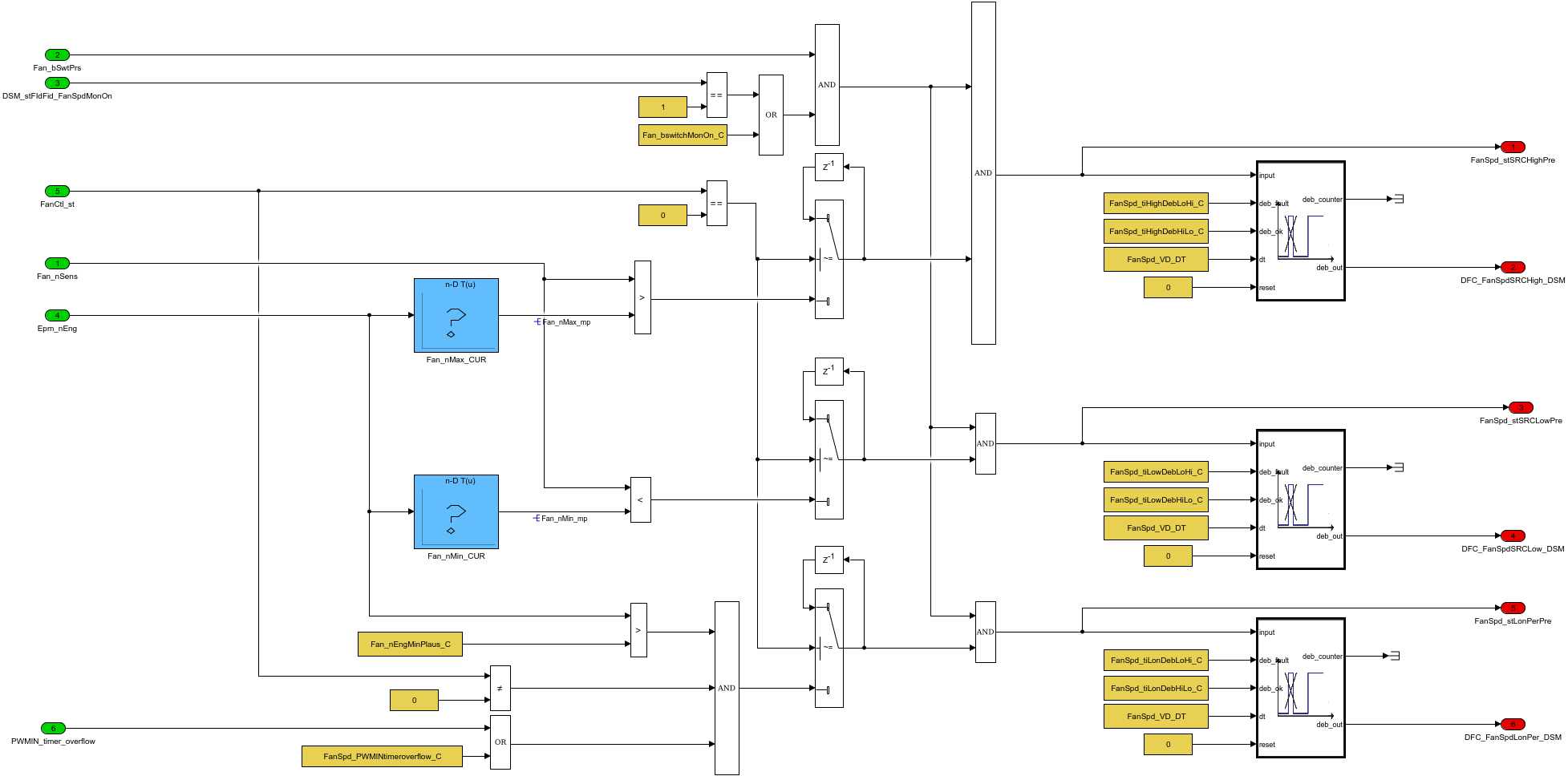
上边子模块是风扇转速滤波，下面子模块是风扇转速监测。

#### 2.1.1.Evaluation of Filtered Fan speed value



风扇转速滤波处理。

#### 2.1.2.Fan speed monitoring



风扇转速监测和故障处理。FanSpd\_stSRCLowPre表示初步错误。DFC\_FanSpdSRCLow\_DSM传到DFC故障处理。

Table. 输入信号

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Min | Max | Width | Description | Object Class | Typedef | Unit |
| Fan\_bSwtPrs | 0.0 | 1.0 | -1.0 | Fan\_bSwtPrs ==0 fan sensor is not installed/==1 sensor stalled |  | boolean |  |
| DSM\_stFIdFid\_FanSpdMonOn | 0.0 | 255.0 | -1.0 | monitoring signal |  | State\_uint8 |  |
| FanCtl\_st | 0.0 | 255.0 | -1.0 |  |  | State\_uint8 |  |
| Fan\_nSens | 0.0 | 32767.0 | -1.0 |  |  | FanSpd\_rpm | rpm |
| Epm\_nEng | 0.0 | 6000.0 | -1.0 | Engine speed |  | EngSpeed\_rpm | rpm |
| PWMIN\_timer\_overflow | 0.0 | 65535.0 | -1.0 |  |  | State\_uint16 |  |

Table. 输出信号

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Min | Max | Width | Description | Object Class | Typedef | DefaultValue | Unit |
| FanSpd\_stSRCHighPre | 0.0 | 1.0 | -1.0 |  |  | boolean | 0.0 |  |
| FanSpd\_stSRCLowPre | 0.0 | 1.0 | -1.0 |  |  | boolean | 0.0 |  |
| FanSpd\_stLonPerPre | 0.0 | 1.0 | -1.0 |  |  | boolean | 0.0 |  |
| DFC\_FanSpdSRCHigh\_DSM | 0.0 | 1.0 | -1.0 | after debouncing FanSpd\_stSRCHighPre |  | boolean | 0.0 |  |
| DFC\_FanSpdSRCLow\_DSM | 0.0 | 1.0 | -1.0 | after debouncing FanSpd\_stSRCLowPre |  | boolean | 0.0 |  |
| DFC\_FanSpdLonPer\_DSM | 0.0 | 1.0 | -1.0 | after debouncing FanSpd\_stLonPerPre |  | boolean | 0.0 |  |
| Fan\_nFlt | 0.0 | 32767.0 | -1.0 |  |  | FanSpd\_rpm | 0.0 | rpm |

Table. 监控量

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Min | Max | Width | Description | Object Class | Typedef | DefaultValue | Unit |
| Fan\_nMax\_mp | 0.0 | 32767.0 | -1.0 |  |  | FanSpd\_rpm | 3000.0 | rpm |
| Fan\_nMin\_mp | 0.0 | 32767.0 | -1.0 |  |  | FanSpd\_rpm | 0.0 | rpm |

Table. 标定量

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Name | Min | Max | Width | Description | Object Class | Typedef | DefaultValue | Unit |
| Fan\_nEngMinPlaus\_C | 0.0 | 3000.0 | -1.0 |  |  | EngSpeed\_rpm | 800.0 | rpm |
| FanSpd\_tiHighDebLoHi\_C | 0.0 | 65535.0 | -1.0 | Parameter structure for debounce times high / Time for a Low to High transition |  | Debounce\_ms | 300.0 | ms |
| FanSpd\_tiHighDebHiLo\_C | 0.0 | 65535.0 | -1.0 | Parameter structure for debounce times high / Time for a High to Low transition |  | Debounce\_ms | 300.0 | ms |
| FanSpd\_tiLowDebLoHi\_C | 0.0 | 65535.0 | -1.0 | Parameter structure for debounce times low / Time for a Low to High transition |  | Debounce\_ms | 300.0 | ms |
| FanSpd\_tiLowDebHiLo\_C | 0.0 | 65535.0 | -1.0 | Parameter structure for debounce times low / Time for a High to Low transition |  | Debounce\_ms | 300.0 | ms |
| FanSpd\_tiLonDebLoHi\_C | 0.0 | 65535.0 | -1.0 | Parameter structure for debounce times LonPer/ Time for a Low to High transition |  | Debounce\_ms | 300.0 | ms |
| FanSpd\_tiLonDebHiLo\_C | 0.0 | 65535.0 | -1.0 | Parameter structure for debounce times LonPer / Time for a High to Low transition |  | Debounce\_ms | 300.0 | ms |
| Fan\_facPT1\_C | 0.0 | 99.9985 | -1.0 | Time constant of PT1 filter for fan speed |  | PT\_fac | 50.0 |  |
| Fan\_nevaluatedFlt\_C | 0.0 | 32767.0 | -1.0 | function is evaluated |  | FanSpd\_rpm | 0.0 | rpm |
| Fan\_nMax\_CUR | 0.0 | 32767.0 | 25.0 | engine speed look up table obtain fan speed max |  | FanSpd\_rpm | [0 6 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92 96 100] | rpm |
| Fan\_nMax\_CURX | 0.0 | 3000.0 | 25.0 | engine speed input mp to mmax fan speed |  | EngSpeed\_rpm | [0 6 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92 96 100] | rpm |
| Fan\_nMin\_CUR | 0.0 | 32767.0 | 25.0 | engine speed look up table obtain fan speed min |  | FanSpd\_rpm | [0 6 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92 96 100] | rpm |
| Fan\_nMin\_CURX | 0.0 | 3000.0 | 25.0 | engine speed input mp to min fan speed |  | EngSpeed\_rpm | [0 6 12 16 20 24 28 32 36 40 44 48 52 56 60 64 68 72 76 80 84 88 92 96 100] | rpm |
| FanSpd\_PWMINtimeroverflow\_C | 0.0 | 1.0 | -1.0 | If the PWMIN\_timer\_overflow used calibrated to 1 |  | boolean | 0.0 |  |
| Fan\_bswitchMonOn\_C | 0.0 | 1.0 | -1.0 | DINH\_stFId.FId\_FanSpdMonOn Under influence Fan speed |  | boolean | 0.0 |  |

Table. 系统常量

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Name | Value | Description | Object Class | Typedef | Unit |