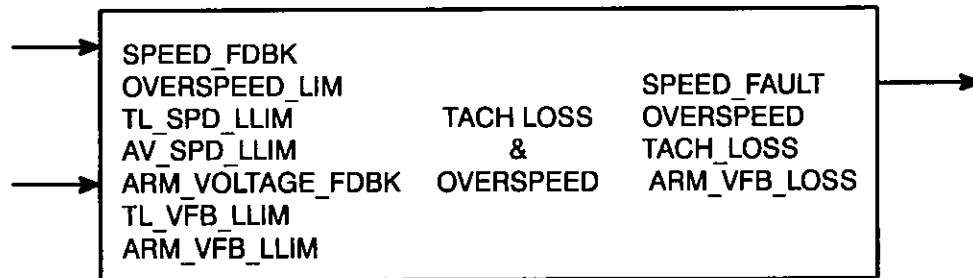


# 35.0 TACH LOSS AND OVERSPEED

This function can be used in UDC Control Block tasks only. It cannot be used in AutoMax Control Block tasks.



## Function

This function provides tachometer loss and overspeed detection using speed feedback and armature voltage for Distributed Power System drives. Use of this block is appropriate for control of motor-generator sets or in speed regulators where a signal proportional to speed that is independent of the device measuring speed (such as a resolver) is not provided by the PMI.

## Program Statement

```
CALL TACHLOSS_OVERSPEED( SPEED_FDBK = speed_fdbk%, &
    ARM_VOLTAGE_FDBK = arm_voltage_fdbk%, &
    OVERSPEED_LIM = overspeed_lim%, &
    TL_SPD_L LIM = tl_spd_llim%, &
    AV_SPD_L LIM = av_spd_llim%, &
    TL_VFB_L LIM = tl_vfb_llim%, &
    ARM_VFB_L LIM = arm_vfb_llim%, &
    SPEED_FAULT = speed_fault@, &
    OVERSPEED = overspeed@, &
    TACH_LOSS = tach_loss@, &
    ARM_VFB_LOSS = arm_vfb_loss@ )
```

## Inputs

**SPEED\_FDBK =**

INTEGER speed feedback from the drive (typically 4095 = gear-in speed). This parameter must be specified. There is no default.

**OVERSPEED\_LIM =**

INTEGER overspeed trip point or limit (typically 10% over gear-in speed). The default is 4505.

**TL\_SPD\_L LIM =**

INTEGER speed feedback low limit used for tach loss detection (typically 5% of gear-in speed). The default is 205.

**AV\_SPD\_LLIM =**

INTEGER speed feedback low limit used for armature voltage feedback loss detection (typically 40% of gear-in speed). The default is 1638.

**ARM\_VOLTAGE\_FDBK =**

INTEGER armature voltage feedback from drive (typically 3000 = rated armature volts). This parameter must be specified. There is no default.

**TL\_VFB\_LLIM =**

INTEGER armature voltage feedback low limit used for tach loss detection (typically 40% of rated voltage). The default is 1200.

**ARM\_VFB\_LLIM =**

INTEGER armature voltage feedback low limit used for armature voltage feedback loss detection (typically 5% of rated voltage). The default is 150.

## Outputs

**SPEED\_FAULT =**

BOOLEAN speed emergency stop output; TRUE when overspeed, tach loss, or armature voltage feedback loss is detected. This parameter must be specified.

**OVERSPEED =**

BOOLEAN output TRUE when overspeed is detected. The default is FALSE.

**TACH\_LOSS =**

BOOLEAN output TRUE when tach loss is detected. The default is FALSE.

**ARM\_VFB\_LOSS =**

BOOLEAN output TRUE when armature voltage feedback loss is detected. The default is FALSE.

## Notes

1. If armature voltage feedback comes from the PMI in volts, the armature volts low limit must also be in volts.

## 35.1 Setup Calculations and Block Equations

```
IF ABS(XXX_SPD_FBK%) > OVERSPD_LIM% THEN
  XXX_OVERSPD@ = TRUE
ELSE
  XXX_OVERSPD@ = FALSE
END_IF

IF ABS(XXX_SPD_FBK%) < TL_SPD_FBK_LIM% AND
  ABS(XXX_ARM_VFB%) > TL_VFB_LOW_LIM% THEN
  XXX_TACH_LOSS@ = TRUE
ELSE
  XXX_TACH_LOSS@ = FALSE
END_IF

IF ABS(XXX_SPD_FBK%) > AV_SPD_FBK_LIM% AND
  ABS(XXX_ARM_VFB%) < ARM_VFB_LOW_LIM% THEN
  XXX_AVFB_LOSS@ = TRUE
ELSE
  XXX_AVFB_LOSS@ = FALSE
END_IF

IF XXX_OVERSPD@ = TRUE OR &
  XXX_TACH_LOSS@ = TRUE OR &
  XXX_AVFB_LOSS@ = TRUE THEN
  XXX_SPD_ESTOP@ = TRUE
ELSE
  XXX_SPD_ESTOP@ = FALSE
END_IF
```