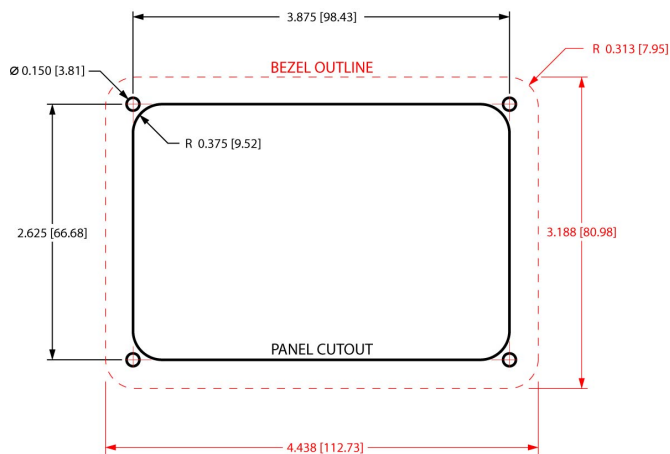


Class 1

Twister™ – CAN Electronic Throttle OEM Quick Manual

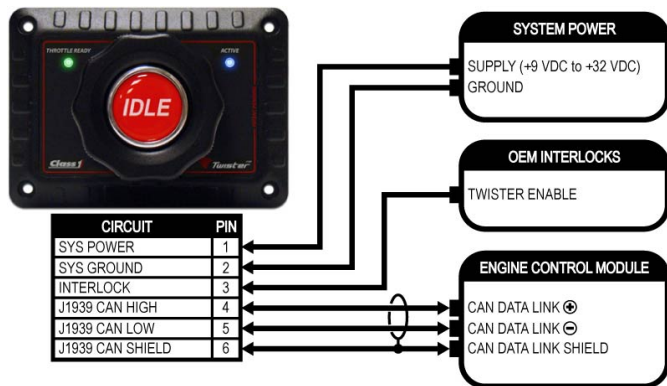
INSTALLATION

Mount the Twister™ (p/n 119970) on the operator's panel with four #6 screws and nuts. The dimensions in the detail below are in inches [millimeters].



WIRING

The Twister has a single six (6) pin Deutsch connector. The mating connector is a DT06-6S.



IDLE BUTTON OPERATION

The Twister's IDLE button is used to set the engine RPM back to idle (and enter passwords for configuration).

Press and hold the IDLE button for a half second and the engine ramps down to the configured idle RPM. The ACTIVE LED remains ON while the Twister ramps the engine to idle and then it turns OFF.

CONTROL KNOB OPERATION

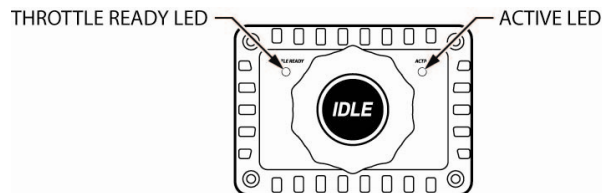
The Twister's control knob is used to control engine RPM (and enter passwords for configuration).

The "increase RPM" direction of the control knob can be configured for clockwise or counter-clockwise rotation (clockwise is default).

Each tactile click of the control knob equals 5 RPM.

LED OPERATION

The Twister has two (2) LEDs located on its front panel on either side of the control knob.



Throttle Ready LED:

The green THROTTLE READY LED is ON when the Twister's interlock (pin 3) is active. This indicates that the Twister is transmitting J1939 engine control commands and is ready for operator initiated control via the control knob.

The THROTTLE READY LED flashes when the Twister is not receiving engine RPM data from the J1939 CAN bus. No throttle control is permitted when the THROTTLE READY LED is flashing.

Active LED:

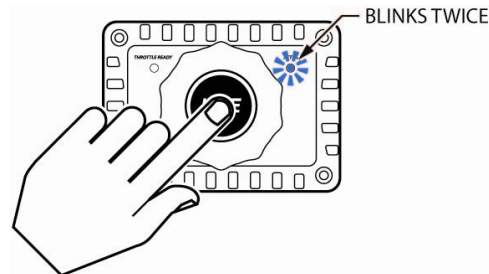
The blue ACTIVE LED is ON when the Twister's knob has been turned in the increase RPM direction. This LED indicates the Twister is actively controlling the engine.

The ACTIVE LED flashes when the operator is rotating the control knob while the engine RPM is at the configured minimum or maximum RPM.

ENTERING PASSWORDS

The Twister utilizes passwords to modify its operational parameters. All operational parameters are stored in memory and will not be lost when power is disconnected.

Enter a password by **pressing and holding** the IDLE button until the ACTIVE LED blinks twice (two seconds). **Continue holding** the IDLE button and use the knob to enter the password.



The password consists of clockwise and counter-clockwise knob rotations. A rotation consists of at least one tactile click and the rotation event complete when the knob remains stationary for at least a half-second.

Each clockwise rotation will turn the ACTIVE LED ON for a half-second.

Each counter-clockwise rotation will turn the THROTTLE READY LED ON for a half-second.

Wait for the LED indication to turn OFF before rotating the knob again.

If an error is made while entering a password, release the IDLE button to clear and then re-attempt the password from the beginning.

ENGINE TYPE CONFIGURATION

The Twister must be configured to transmit the J1939 CAN communication data required for the particular engine type. The Twister's default communication data method is via the Torque/Speed Control 1 (TSC1) PGN 0 CAN message, but Cummins Fire Pump Governor (CFPG) or Scania methods may be selected.

TSC1 communication method (default):



CFPG communication method:



Scania communication method:



KNOB ROTATION CONFIGURATION

The Twister allows the knob rotation direction for increase RPM to be configured. The default is clockwise rotation yields an increase in engine RPM. But this may be changed to counter-clockwise rotation yields an increase in engine RPM by entering a password.

Clockwise rotation equals increase engine RPM (default):



Counter-clockwise rotation equals increase engine RPM:



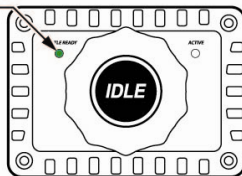
INTERLOCKING

The interlock input (pin 3) must be active before the Twister will allow control of the engine's RPM.

It is the OEM's responsibility to create a safe interlocking scheme to activate the Twister's interlock input.

The Twister's green THROTTLE READY LED will ON when the interlock input is active. The Twister is now ready for operator initiated control.

THROTTLE READY LED



The Twister allows configuration of the interlock input's (pin 3) activation polarity (positive voltage or ground).

Positive polarity interlock configuration password (default):



Ground polarity interlock configuration password:



ENGINE RPM RANGE CONFIGURATION

The Twister allows configuration of its idle RPM and maximum RPM values. The defaults are 800 RPM idle, 2200 RPM maximum.

Idle RPM configuration:

Enter the password -



Release the IDLE button.

The idle RPM value is entered by using a password created from the *hundreds* and *tens* digits of the desired idle RPM value. Use the DIGIT/ROTATIONS chart below to select the knob rotations for the two digits of the password. The valid range is 50 (500 RPM) to 95 (950 RPM).

For example, 750 RPM would use the numbers 7 and 5 (750).

The password for 750 RPM is -



Press the IDLE button to clear the RPM password if a mistake has been made.

Maximum RPM configuration:

Enter the password -



Release the IDLE button.

The maximum RPM value is entered by using a password created from the *thousands* and *hundreds* digits of the desired maximum RPM value. Use the DIGIT/ROTATIONS chart below to select the knob rotations for the two digits of the password. The valid range is 15 (1500 RPM) to 45 (4500 RPM).

For example, 2800 RPM would use the numbers 2 and 8 (2800).

The password for 2800 RPM is -



Press the IDLE button to clear the RPM password if a mistake has been made.

DIGIT	ROTATIONS
0	4 clockwise rotations
1	4 clockwise rotations, 1 counter-clockwise rotation
2	4 clockwise rotations, 2 counter-clockwise rotations
3	4 clockwise rotations, 3 counter-clockwise rotations
4	4 clockwise rotations, 4 counter-clockwise rotations

DIGIT	ROTATIONS
5	5 clockwise rotations, 1 counter-clockwise rotation
6	5 clockwise rotations, 2 counter-clockwise rotations
7	5 clockwise rotations, 3 counter-clockwise rotations
8	5 clockwise rotations, 4 counter-clockwise rotations
9	5 clockwise rotations, 5 counter-clockwise rotations

For detailed operation and troubleshooting consult the full manual (p/n 120477) available from the Class 1

Twister (CAN) OEM Quick Manual P/N 120318

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Class 1

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