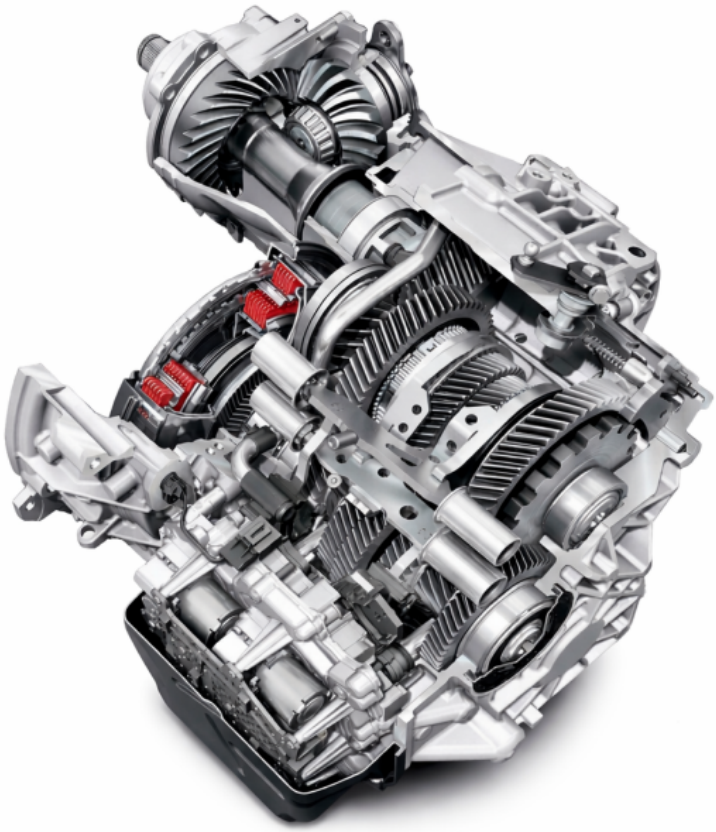


DQ250 MQB DSG

SyvTCM Integration Manual

Installation, wiring, calibration and diagnostics

Integration guide | September 2026

Contents

DQ250MQB DSG Integration

Standalone DSG control for custom vehicle installations

The Syvecs SyvTCM integrates a supported DQ250 MQB transmission into a non-OEM chassis. It communicates with the gearbox's original transmission controller over CAN, supplying the engine and vehicle information normally provided by the donor vehicle.

Integration without the complete donor electronics

The standalone control software emulates missing vehicle modules, including ABS and steering-column systems, while providing the engine variables required by the TCU. Engine data can be received from a supported ECU CAN protocol, configured through Generic CAN Receive, or supplied through suitable physical inputs. Internal torque estimation is available where the engine controller does not provide torque values.

Driver controls and calibration

The guide covers the VAG OEM shifter, generic CAN keypads, Grayhill / MoTeC CANopen keypads and paddle-control arrangements. SCal provides access to input assignments, shift-related settings, gearbox data and diagnostic functions. The DQ-specific sections cover crank-signal emulation, Normal and Dynamic mode selection where supported, clutch-pressure logging and the basic-setting procedure.

The SyvTCM uses CAN1 (pins A17 CAN High and A18 CAN Low) to communicate with the DQ250 TCU and shifter. CAN0 (pins A14 CAN High and A15 CAN Low) is used for the Syvecs Engine ECU link or other external engine control modules.

Diagnostics and gearbox protection

Monitor selected gear, shaft speeds, torque requests and transmission fault or limp status in SCal. Clutch-pressure logging supports setup and analysis, while the basic-setting procedure covers clutch relearn after relevant gearbox work. Fault information can be sent to the engine ECU to support torque limiting.

Example supported DQ250 MQB controller references

Example controller references
02E927770 AN
02E927770 AQ
02E927770 AS

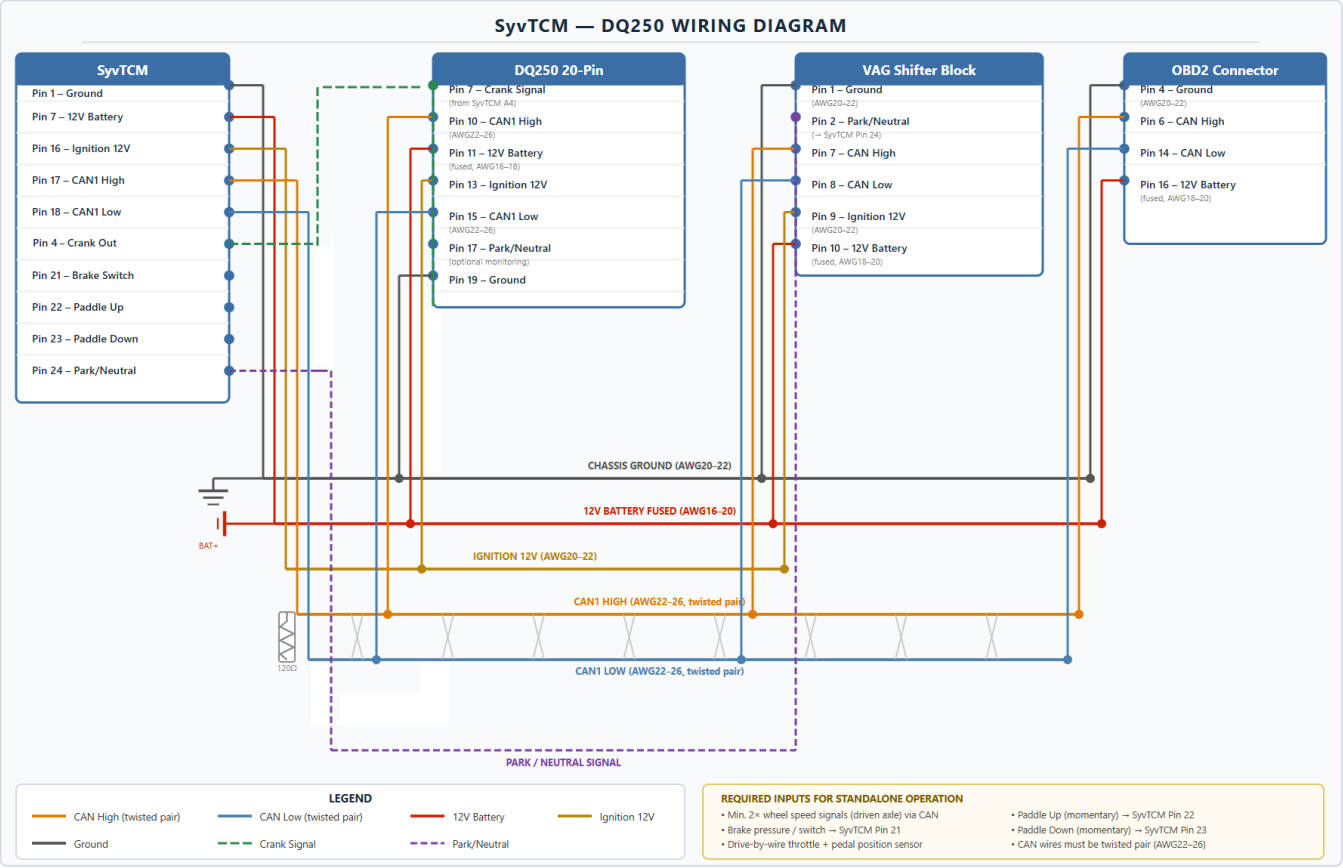
The TCM must be flashed to remove the VIN lock before standalone use.

CAN overview and example wiring

For the CAN bus to work properly it needs to have the correct impedance to be as error-free as possible. This is achieved by adding two 120 ohm termination resistors at each end of the CAN bus. The SyvTCM has a built-in 120 ohm termination resistor on CAN0 and CAN1, so only one additional resistor is required at the gearbox end of the CAN line.

CAN1 connects the gearbox and OEM shifter through SyvTCM A17 (CAN High) and A18 (CAN Low). CAN0 connects the engine ECU through A14 (CAN High) and A15 (CAN Low).

DQ250 MQB example wiring

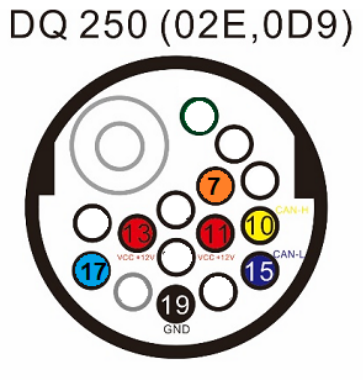


SyvTCM Pinout

Mating Connector - TE 3-1437290-7

CANTCM Pinout	Description	Notes
A1	PWRGND	Ground
A2	PWRGND	Ground
A3	H-Bridge1	Reverse Light
A4	H-Bridge2	Spare Output
A5	H-Bridge3	Spare Output
A6	H-Bridge4	Spare Output
A7	12V HC	12V Supply - High Current
A8	Kline/LinBus	Kline/LinBus
A9	MagnetoResistive 1	Connects to ABS +Wire
A10	MagnetoResistive 2	Connects to ABS +Wire
A11	MagnetoResistive 3	Connects to ABS +Wire
A12	MagnetoResistive 4	Connects to ABS +Wire
A13	12V HC	12V Supply - High Current
A14	Can0 H	ECU/OEM Bus
A15	Can0 L	ECU/OEM Bus
A16	12V IG SW	12V Ignition Switch
A17	Can1 H	Gearbox / Shifter CAN
A18	Can1 L	Gearbox / Shifter CAN
A19	12V HC	12V Supply - High Current
A20	5V Out	5V Output Supply
A21	AN1	Paddle Up or Spare Input
A22	AN2	Paddle Down or Spare Input
A23	AN3	Cal Switch or Spare Input
A24	AN4	Spare Input
A25	PWRGND	Ground
A26	PWRGND	Ground

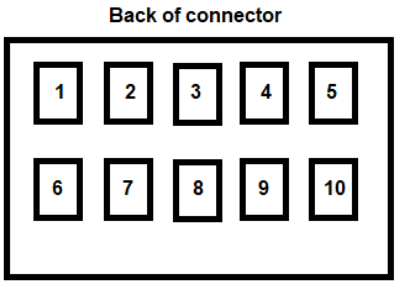
DQ250MQB Connections



Gearbox Connector - 1J0 927 320

Pin	Function / connection	Wire size
7	Crank signal emulated by a spare SyvTCM H-Bridge output	
10	CAN1 High to SyvTCM A17	AWG22-26
11	Fused battery 12V supply	AWG16-18
13	Ignition-switched 12V supply	
15	CAN1 Low to SyvTCM A18	AWG22-26
17	Park/Neutral position - optional monitoring	
19	Ground	

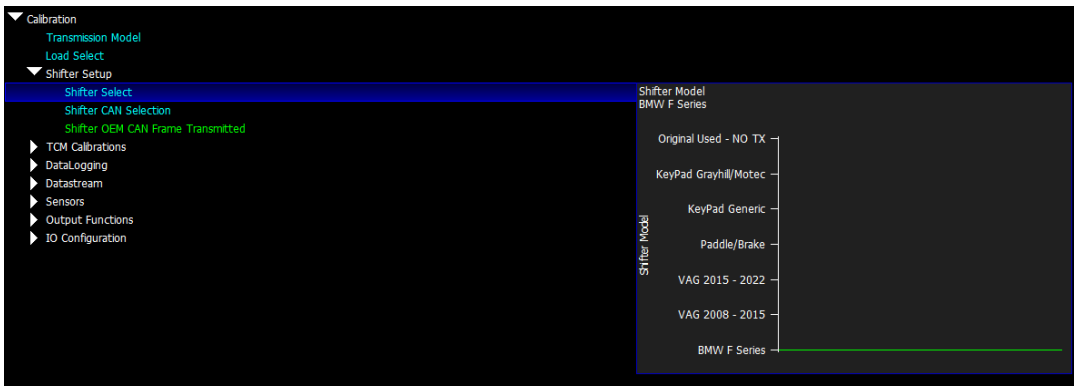
VAG OEM Shifter Connections



Shifter Connector - 1K0 972 776

Pin	Function / connection	Wire size
1	Ground	AWG20-22
2	Park/Neutral position to SyvTCM pin 23	
5	Not needed	
7	CAN High	
8	CAN Low	
9	Ignition-switched 12V supply	AWG20-22
10	Fused battery 12V supply	AWG18-20

If the OEM Shifter Block is used is must be connected on the Same CANbus as the gearbox and Set this map as Original used.



Additional electronic shifter wiring

The following connector references are carried over from the SyvTCM 8HP guide. Use them only where the installed DQ250 firmware offers the corresponding shifter selection. Confirm the DQ250 CAN configuration and OEM-frame settings before connection; these wiring references do not establish compatibility on their own.

Dodge electronic shifter

Mating connector: 9132571-02 / 1-929423-2

Pin	Function	Connection / supply
1 (top left, rear view)	12V wakeup	Ignition-switched 12V
4	CAN High	Selected shifter CAN High
5	CAN Low	Selected shifter CAN Low
10	Ground	Ground

BMW F-Series electronic shifter

10-pin connector | Mating connector: 9132571-02 / 1-929423-2

Pin	Function	Connection / supply
3	CAN Low	Selected shifter CAN Low
4	CAN High	Selected shifter CAN High
7	12V wakeup	Ignition-switched 12V
8	Ground	Ground
10	12V	Main power supply

Toyota Supra A90 electronic shifter

10-pin connector | Mating connector: 9132571-02 / 1-929423-2

Pin	Function	Connection / supply
3	CAN Low	Selected shifter CAN Low
4	CAN High	Selected shifter CAN High
8	Ground	Ground
10	12V	Main power supply

KeyPad - Generic

System Overview

When the Shifter Selection is set on Keypad , the calibrator is able to use the Generic CAN Receive logic to pickup keypad buttons for enabling drive shift selections from a CANbus source.

The following buttons can then be assigned to CAN Items to allow the a keypad unit or other external CAN device control the gearbox.

parkButton

neutralButton

driveButton

reverseButton

manual/auto Switch

sportButton

The usual shift options apply with the keypad selections for Park/Reverse Speed lockouts etc.

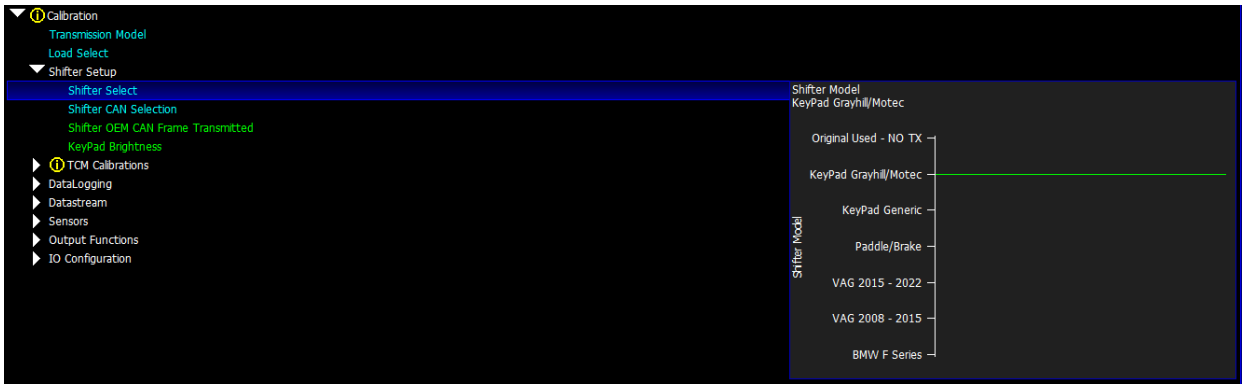
Paddles can also be wired or assign if a Manual/Auto Switch is setup

KeyPad - GrayHill / Motec (CANOPEN)

CONNECTION
4 pin Deutsch DT Connector.
Power with 8V to 32V vehicle type inputs.

System Overview

When the Shifter Selection is set on Grayhill Keypad , the Keypad buttons will be setup like the above image automatically. Paddles can also be assigned into the physical inputs on the SyvTCM or via CAN to provide the paddle option when in Manual Mode.



The following items are then assigned as per the image above.

parkButton

neutralButton

driveButton

reverseButton

The usual shift options apply with the keypad selections for Park/Reverse Speed lockouts etc. Paddles can also be wired or assign if a Manual/Auto Switch is setupThe Keypad Brightness can also be adjusted when Grayhill Keypad is selected

manual/auto Switch

sportButton

calupSwitch

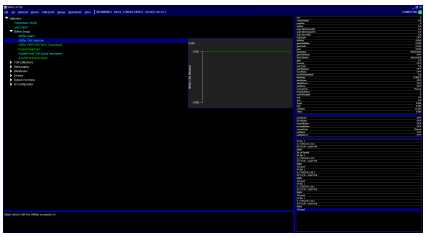
transBrake

Grayhill Panel Reprogramming for SyvTcm

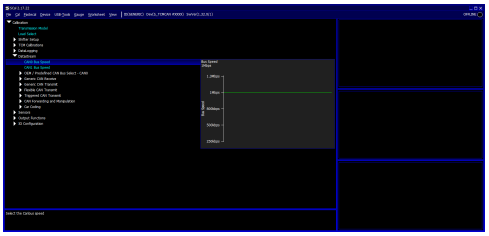
A GrayhillCANopen keypad must be programmed once from new so that its CAN messages match the SyvTCM shifter control system. This can be done directly from the SyvTCM firmware using the built-in programming routine.

• First connect the keypad to desired CANbus on the SyvTcm, generally this is CAN0 as CAN1 is used for Vehicle TCM Communications.

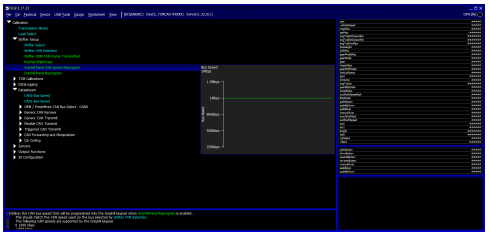
IMPORTANT MAKE SURE NO OTHER CAN DEVICES ARE CONNECTED AND ACTIVE ON THE BUS DURING PROGRAMMING and the CANbus is TERMINATED at BOTH ENDS.



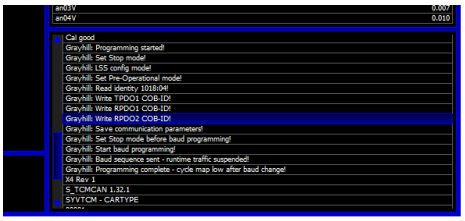
• As standard, the Grayhill panels come with the baud rate set at 250kb,in order to program them you need to set the CAN used speed at that rate to allows the messages to update the panel.This can be done using the SyvecsSCalprogram. A device - Program is required after this change.



• Select KEYPADGRAYHILL in Shifter Selector Map followed by selection of the desired keypad CAN speed so it matches the CAN bus which is planned to be used for communication to the Engine controller on CAN0.



To program the keypad simply set the Grayhill Reprogram map to Enabled; the SyvTCM will automatically transmit the required CANopen configuration messages and the process will complete in approximately two seconds. In the bottom right of scal a message service will show the update process.



During programming the keypad LEDs may briefly flicker. The keypad will then store the configuration internally in its EEPROM and begin using the SyvTCM CAN IDs for button transmission and LED/brightness control. After programming is complete set the Grayhill reprogramming map back to disabledto prevent the routine from running again.

This procedure normally only needs to be performed once when installing a new keypad or if the keypad has been reset to factory defaults.

Paddles - Up and Down

Paddle Switches		
Pin	Description	Usage / note
1	Up Wire	SyvTCM Pin 21
2	GND	GND
3	Down Wire	SyvTCM Pin 22

System Overview

Paddles can be used with a Shifter block for Manual mode shifting OR the paddles and a brake signal can be used for emulating the shifter block on its own.

You can control the gearbox using the two paddles behind the steering wheel and the brake pedal:

- Left Paddle (−) → Downshift
- Right Paddle (+) → Upshift
- Both Paddles Together → Neutral
- Brake Pedal → Required for Park / Reverse selection
- Manual / Auto Button → Toggles between automatic and manual modes

Starting & Parking

- On startup, the gearbox automatically enters Neutral.
- To select Drive or Reverse, press the brake pedal first.
- Press Right Paddle (+) once → moves to Drive
- Press Left Paddle (−) once → moves to Reverse (only when stopped or below the safety speed limit)

Neutral Mode

• Pull both paddles together → shifts to Neutral.

• You must release both paddles fully before any further action.

• After a short delay (approx. 0.3s), the system will automatically move to Drive when you press the brake and the right paddle.

Drive Mode

• Standard automatic drive (if Manual/Auto button is off).

• Tap the Right Paddle (+) or Left Paddle (−) at any time to manually upshift or downshift.

• Using a paddle temporarily switches you to Manual Mode - the gearbox will stay manual for 10 seconds of inactivity, then automatically return to Drive.

Manual Mode

• Enabled automatically when you use the paddles while in Drive.

• Can also be enabled permanently by pressing the Manual/Auto button.

• Shifting:

• Right Paddle (+) → Upshift

• Left Paddle (−) → Downshift

• After 10 seconds of no paddle activity (if button is off), it will return to Drive automatically.

Switching Between Modes

Current Mode	Action	Result
Park	Hold both paddles (with brake)	Neutral
Neutral	Brake + Right Paddle	Drive
Neutral	Brake + Left Paddle	Reverse
Drive	Both Paddles	Neutral
Drive	Right Paddle	Upshift / Manual Mode
Drive	Left Paddle	Downshift / Manual Mode
Manual	Both Paddles	Neutral
Manual	Idle 10s (Manual button off)	Return to Drive

CAN Bus and Input/Output Configuration

The SYVTCM unit offers flexible CAN bus speed settings for both of its interfaces. CAN1 is used exclusively for the DQ communications, while CAN0 is intended for connecting to either aftermarket ECUs or the OEM powertrain CAN buses. Both CAN1 and CAN0 support adjustable bit rates of 250 kbit, 500 kbit, 1 Mbit, or 1.33 Mbit, and these can be configured via the Syvecs SCAL program. By default, CAN0 and CAN1 has a termination resistor set

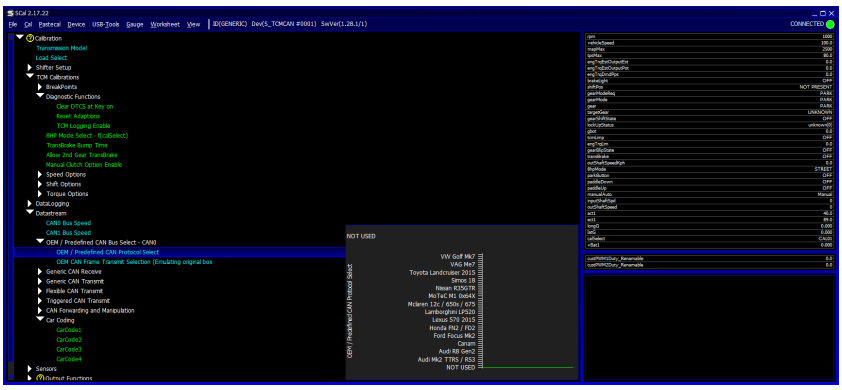
In addition to its CAN bus capabilities, the module provides four analog inputs and four analog outputs. The analog inputs support a thermistor function, allowing a 3k pull-up resistor to be assigned to read temperature sensors or detect switches and paddle inputs that pull to ground.

On the output side, each of the four low-side driven outputs can handle up to 4 amps and features adjustable PWM support. Within the module's firmware, customizable output maps can be configured through the SCAL software, allowing you to define any input or signal as an axis and create tailored PWM output behaviours.

CAN Bus Configuration and Vehicle Compatibility

Designed to seamlessly integrate with both aftermarket ECUs and OEM powertrain CAN bus systems. Through the Syvecs SCAL software, users can select predefined CAN structures from a list of supported OEM vehicles or aftermarket ECUs. This makes installation straightforward.

In cases where your specific car or aftermarket ECU isn't on the predefined list, the Syvecs TCM provides full flexibility. You can manually configure generic CAN receive channels by specifying custom CAN IDs, start bits, scaling, and offsets. This ensures you can map any external data into the SyvTcm.



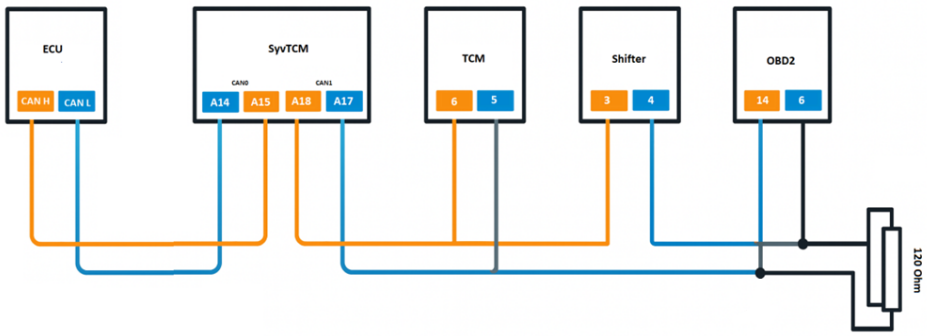
TCM Integrated Data Handling

In addition to receiving CAN data from ECUs, the SyvTcm also picks up data directly from the original gearbox ECU. This data is presented to end-users through the SCAL software. Users can then configure the Syvecs CAN transmit function in the Data Stream section, allowing them to send relevant data back out over CAN. This data can be directed to a Syvecs ECU, the original OEM powertrain CAN bus, or even an aftermarket ECU bus.

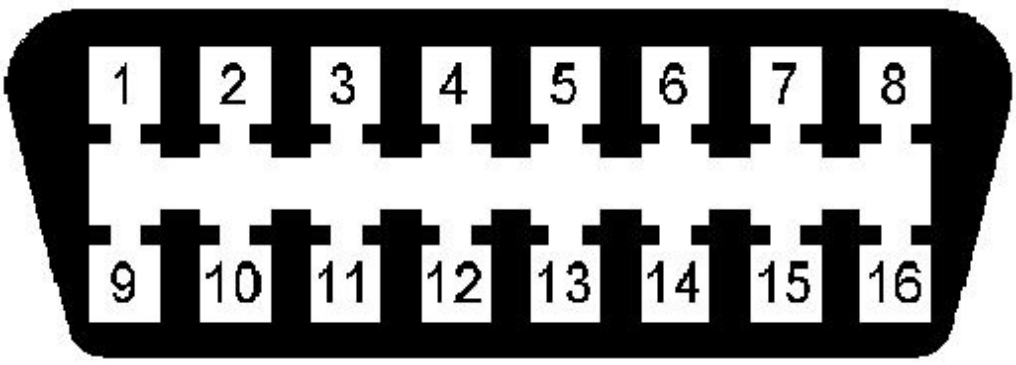
Critical parameters such as gear position, engine torque limitation, blip requests, and more. This ensures smooth communication between the transmission, engine control, and other powertrain elements-whether OEM or aftermarket-enhancing overall drivetrain coordination.

The gearbox control data is sent over CAN1 from the SYVTCM. CAN0 can be used for additional CAN modules, such as OEM vehicle data, keypads or Syvecs ECU communication.

Example CAN Wiring



OBD2 Connector - Diagnostics



Pin	Description	Usage / note
4	GND	Ground
6	CANH	CAN1 High
14	CANL	CAN1Low
16	12V	12V Switched

Setup and Calibration

Once the SyvecsSYVTCM unit is installed, load the default calibration file and proceed to select the transmission model and shifter installed. As these are blue items it requires the module to be programmed to take effect. This is done by pressing Device - Program

After the desired transmission model is selected, a valid Licence code will need to be obtained before the module can be calibrated.

Obtaining Licence codes

For valid licence codes, please email support@syvecs.com with the following details:

Module serial number - A*****

Transmission model -

Licence invoice number -

Required Sensors / Data

The following inputs are required for correct standalone operation:

• Minimum 2 x wheel speed signals from driven axle (e.g. Rear Left and Rear Right) from CAN Source (Option Available to Calculate Speed Internally from Output Shaft)

• Engine Speed

• Engine Torques (Can be Calculated Internally on SyvTCM)

• Pedal Position

• Throttle Position

• Brake Pressure sensor or Brake Switch wired to SyvTCM Pin24 or From CAN Source

• Drive-by-wire throttle control on Engine control with TPS and Pedal Values sent to SyvTCM

• Paddle Up switch - Momentary, wired to SyvTCM AN1 (A21)

• Paddle Down switch - Momentary, wired to SyvTCM AN2 (A22)

• Calibration switch - For TCM mode changes: Comfort, Sport, Dynamic. Wired to SyvTCM AN Input or from CAN

• Optional (recommended): Syvecs GPS/IMU Sensor - provides LongG and LatG signals for improved shift quality, especially on circuit.

• Air Temp

• Engine Coolant Temp

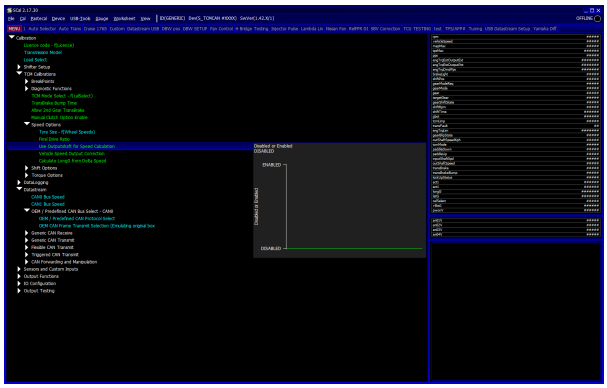
IMPORTANT: CHECK ALL THE ABOVE VALUES ARE READING CORRECTLY in SCAL BEFORE CONNECTING THE TCM TO GEARBOX

Engine Speed (RPM)

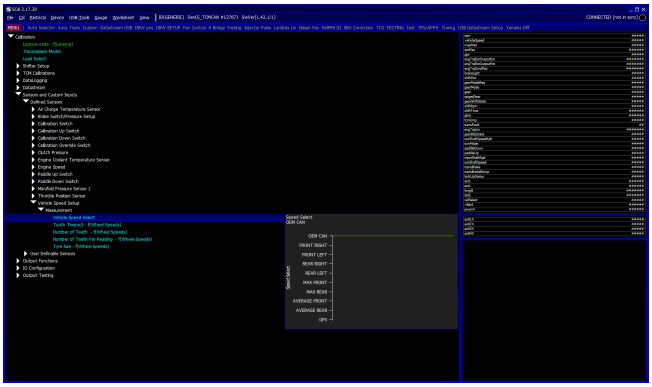
RPM is a vital input for the SyvTCM and can be obtained from CAN or a Physical Pulsed Engine speed signal with older cars like an Injector negative signal which can be T'd into and wired to any Hall / Freq Input on the SyvTCM

Vehicle Speed (vehicleSpeed)

Speed is another vital input for the SyvTCM and can be obtained multiple ways, an easy way is from the Output Shaft Speed on the DQ Trans but this gets the info from the diagnostic TCM frames and can stop external diagnostic equipment working.



Its best to be picked up from an external CAN ABS frame or physical inputs. Important - select the Vehicle Speed source here if not using Output Shaft Speed option.



Manifold Pressure (MAP)

MAP can be used for the Internal Torque Table and feed into the SyvTCM via a CAN signal or from a physical pin.

Throttle Position Sensor (TPS)

TPS can be used for the Internal Torque Table and feed into the SyvTCM via a CAN signal or from a physical pin.

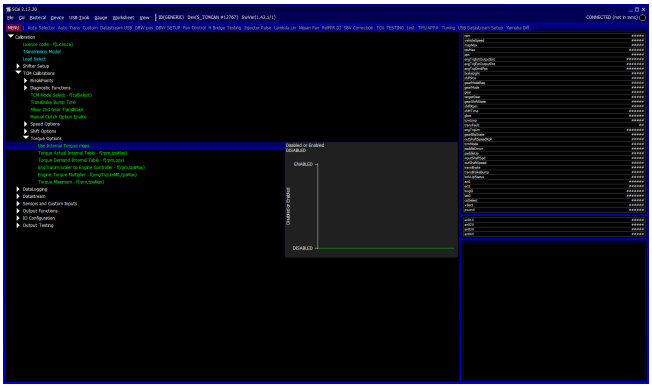
Pedal Position Sensor (PPS)

PPS is needed for internal Torque Demand tables and feed into the SyvTCMvia a CAN signal

Torque Actual, Torque Potential and Torque Demand

The Torque values are importantitems for providing estimated Torque Actual, Torque potential and demanded torque. These value are sent to the TCM to change how the clutch packs are applied and pressures. If using the SyvTCM with a Syvecs ECU these can be picked up via CAN from the Engine ECU or any other ECU which has Torque values.

If the engine controller doesn't have onboard Torque control then users can use the Internal torque option of the SyvTcm to provide torque values.
Please Note: The values may seem higher than the actual engine torque to apply more pressure and faster shifts. The Maximum Torque which can be sent is 1200nm.



Brake Light Input Handling

In the Dq gearbox control logic, the brake light signal plays a crucial role in determining when the brake pedal is pressed. This input can be sourced either through the generic CAN receive function or directly from predefined vehicle profiles that tap into the original vehicle CAN bus for the brake signal.

In cases where the brake light signal isn't available on the CAN bus, but brake pressure data is, the logic can rely on brake pressure readings. There is an adjustable mapping table that allows you to set a specific brake pressure threshold at which the system will consider the brake light "on." Once this threshold is met, a brake light flag is sent to the Dq gearbox, ensuring that the control logic accurately recognizes braking events.

Engine Coolant and Air Temp (ECT and ACT)

These value are used for warm up and ambient adjustments of the tcm logic. They can be wired into the SyvTCM direct or picked up via CAN.

Paddles

Can be wired to the SyvTCM or picked up via CAN data, See Paddle up and down page for more info

I/O and SCAL Setup

In addition to its CAN bus capabilities, the module provides four analog inputs and four analog outputs. The analog inputs support a thermistor function, allowing a 3k pull-up resistor to be assigned to read temperature sensors or detect switches and paddle inputs that pull to ground.

On the output side, each of the four low-side driven outputs can handle up to 4 amps and features adjustable PWM support. Within the module's firmware, customizable output maps can be configured through the SCAL software, allowing you to define any input or signal as an axis and create tailored PWM output behaviors.

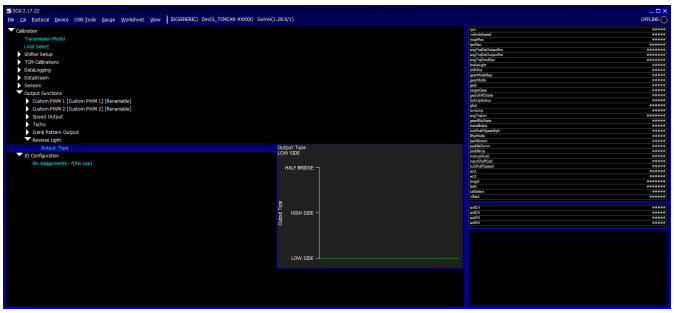
Brake Switch

Assign to Brake Switch in pin assignments and user setup the polarity/threshold.

Reverse Light

The reverse light signal is sent from the DQ250 TCU back to the SyvTCM via CAN1. The SyvTCM H-Bridge output can then be set to Reverse light in pin assignments to activate a low or high side outputs. The output can handle 8amps

Output Type set here



Paddle Switches

Paddle switches can be wired directly to the SyvTCM analog inputs or sent via CAN and setup in generic receive CAN. Any of the inputs can be assigned to the paddles. The SyvTCM has internal pull-up capability on the 4 inputs.

Assign in pin assignments

Then in sensors setup the Input Type (thermistor apples 3k Input Pull-up to 5v)

Set the polarity and threshold for the input to be classed as ON, then can open gauges for PaddleUp and PaddleDown to check. Gauge - Add - Paddleup

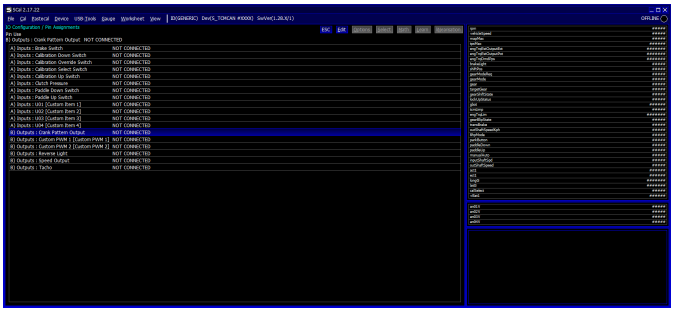
LatG and LongG Signals

The DQ250 TCU monitors lateral and longitudinal G-force signals from the OEM IMU. Standalone control will work without these, but for circuit use it is strongly recommended to fit a Syvecs 50Hz/100Hz GPS Module with its internal 5-axis IMU. This provides Yaw, LongG, and LatG signals which are transmitted to the TCU automatically.

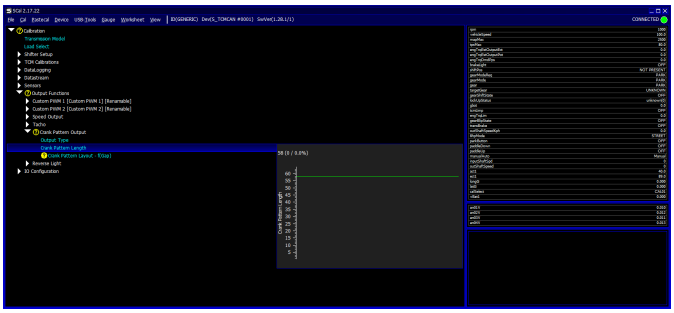
Crank Output

The DQ250 TCU requires a tacho signal as a backup engine speed source. Pin 7 on the gearbox connector needs to be wired to a spare H-Bridge output on the SyvTCM (e.g. A4). Assign that output to the Crank Out function in pin assignments.

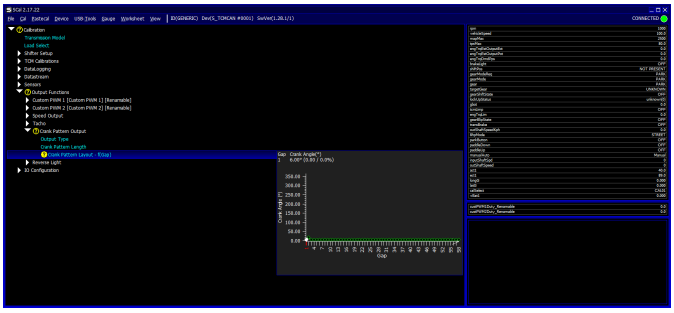
Output Type set as H-Bridge



Output functions - Crank pattern output - Crank Pattern Length - Set the Crank pattern Length at 58



Output functions - Crank pattern output - Crank Pattern Layout - Set all the gaps at 6 apart from gap2 which needs to be 18



Auto Paddle Up Control

The Auto Paddle Up Control strategy can be used either as a visual shift indicator or as an automatic virtual paddle upshift request in Manual Mode. This is particularly useful for drag racing, roll racing, or applications where consistent and repeatable shift points are required.

When all configured conditions are met, the Change Light output becomes active. If the gearbox is operating in Manual Mode, the strategy can also automatically generate a virtual paddle upshift request (paddleUp), allowing the gearbox to upshift without driver input.

The shift point is determined using a gear-based RPM target table, allowing each gear to have its own independent activation point.

The Change Light will only activate when ALL of the following conditions are satisfied:

• Engine RPM exceeds the configured Change Light On Engine Speed threshold.

• Vehicle speed exceeds the configured Change Light On Minimum Vehicle Speed threshold.

• Throttle position exceeds the configured Minimum Throttle Position for Change Light On threshold.

Once activated, the Change Light and virtual paddle request remain active until any of the following conditions occur:

• Engine speed falls below the configured hysteresis threshold.

• Vehicle speed drops below the minimum speed threshold.

• Throttle position drops below the minimum throttle threshold.

• The configured Change Light Time-Out period expires.

When the Change Light turns off, any virtual paddle upshift request generated by the strategy is also removed.

A re-arm condition is required before the Change Light can activate again, preventing repeated triggering while engine speed remains near the shift point.

This strategy provides consistent and repeatable upshift behaviour while maintaining full flexibility for different gears, driving styles, and gearbox modes.

Change Light On Minimum Vehicle Speed - f(targetGear)

Defines the minimum vehicle speed required before the Change Light strategy is allowed to activate for each gear.This prevents shift indication or automatic upshift requests from occurring while the vehicle is stationary, wheel-spinning, or operating at very low speeds.

Typical Uses:

• Prevent false activation during launch control.

• Prevent shift requests during burnouts.

• Ensure the strategy only becomes active once the vehicle is moving.

Higher values delay activation until greater vehicle speed is reached.

Minimum Throttle Position for Change Light On - f(targetGear)

Defines the minimum throttle position required before the Change Light strategy becomes active.

This allows the strategy to be restricted to high-load or performance driving situations.

Typical Uses:

• Disable shift indication during normal cruising.

• Only activate during aggressive acceleration.

• Prevent unnecessary shift light activity during light throttle operation.

Higher values require more throttle before activation.

Change Light On Engine Speed - f(targetGear, rpmDTR)

Defines the engine speed threshold where the Change Light activates.

This is the primary shift point table used by the strategy.

The table is indexed by:

• Target Gear

• Engine RPM Rate of Change (rpmDTR)

Using RPM rate-of-change allows the shift point to be dynamically adjusted based on how quickly the engine is accelerating.

Typical Uses:

• Lower shift RPM during rapid acceleration.

• Optimise shift timing for drag racing.

• Improve consistency between gears.

For virtual paddle shifting, this table effectively determines the automatic upshift RPM.

Change Light Off Engine Speed Hysteresis

Defines the RPM drop required before the Change Light turns off after activation.

This prevents rapid on/off oscillation when engine speed hovers around the activation threshold.

Typical Uses:

• Stabilise shift light operation.

• Prevent repeated virtual paddle requests.

• Improve driver feedback.

Larger values increase stability but require a greater RPM reduction before reset.

Change Light Time-Out

Defines the maximum time the Change Light and virtual paddle request are allowed to remain active.

Once this timer expires, the Change Light is automatically cancelled regardless of engine speed.

Typical Uses:

• Prevent prolonged shift requests.

• Prevent repeated upshift commands.

• Provide predictable operation during missed shifts.

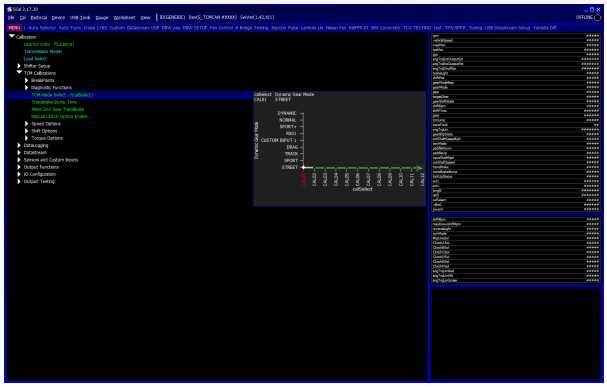
A value of zero typically disables the timeout function.

Custom DQ Functions

Gearbox Dynamic Selection Mode

Some DQ MQB variants support Dynamic gearbox selection. TCM Mode Select is indexed by calSelect, allowing the driver's calibration selection to request the mode.

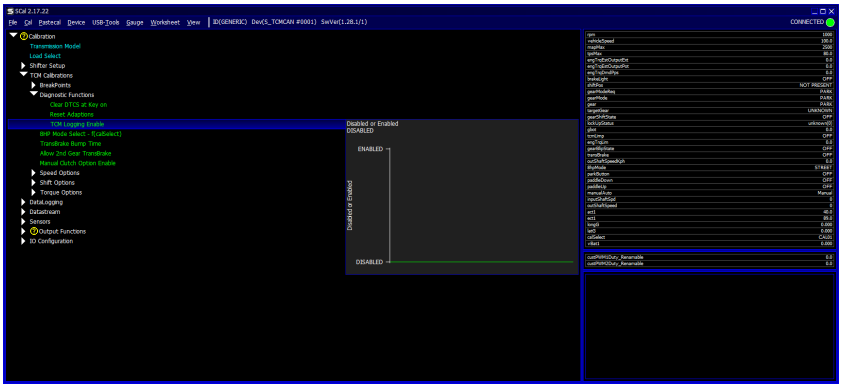
NORMAL	Normal mode is selected directly and is also the fallback when any unsupported mode is requested.
DYNAMIC	Requests Dynamic shift operation on DQ MQB variants that support it. Select through TCM Mode Select using the required calSelect position.



DQ diagnostics and model settings

Clutch Pressure Logging

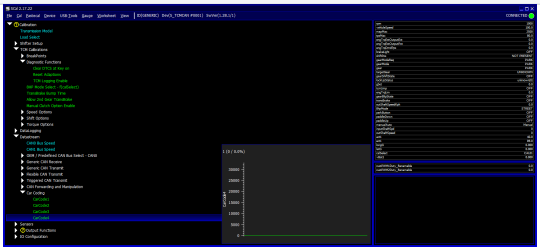
TCM Calibrations - Diagnostic Functions - TCM Logging Enable



When enabled CAN Diagnostic messages are sent to the TCM to Request Clutch pressures which can be viewed and logged in SCAL. Need to be turn off if trying to communication with the TCM for DTC, Relearn etc.

DQ Model Settings

CarCode4 model	Value
Golf R7	0
Golf GTI	1
Seat Leon Cupra R	2
Audi S3	6



Torque Multiplier

CarCode3 sets the torque multiplier for reflashed units, doubling or tripling the value sent to the TCM as configured below.

CarCode3	Torque value
0	500 Nm
1	1000 Nm
2	1500 Nm

Basic Setting / Clutch Relearn

This procedure is normally done after:

- clutch replacement
- mechatronic replacement
- gearbox repair
- flashing new TCU software

Preconditions (Important)

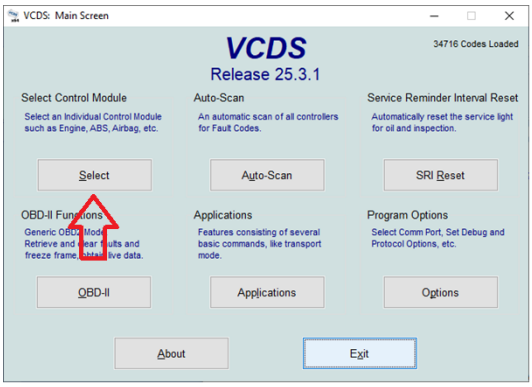
Before starting the adaptation:

Parameter	Requirement
Battery voltage	Above 12.0V (preferably 13-14V with charger)
Gear selector	P or N
Parking brake	Applied
Engine	Running at idle
Transmission oil temp	30°C - 100°C (best around 40-60°C)
Brake pedal	Pressed when requested
Torque	Below 40nm

If any condition is not met the DSG will refuse to run the adaptation.

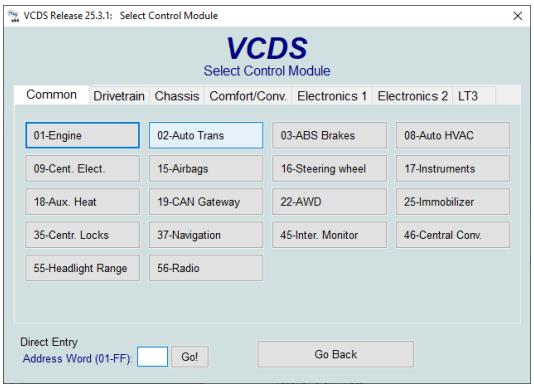
IMPORTANT: Shifter Lock must be in Park also, if using Keypad will have to manually move the park lock on the gearbox fully torwards outside of case and click in place.

Using VCDS connect to the OBD2 port on the DQ TCM CAN Line, power up the transmission and click Select Control Module

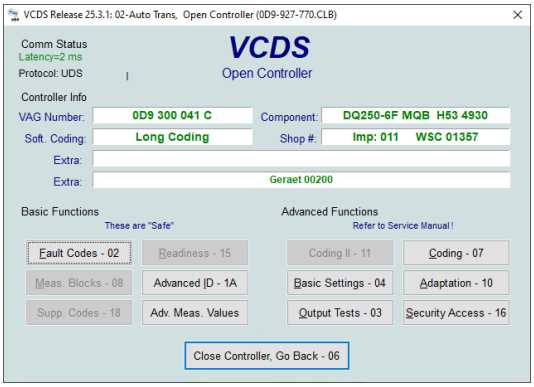


Clutch relearn - diagnostic procedure

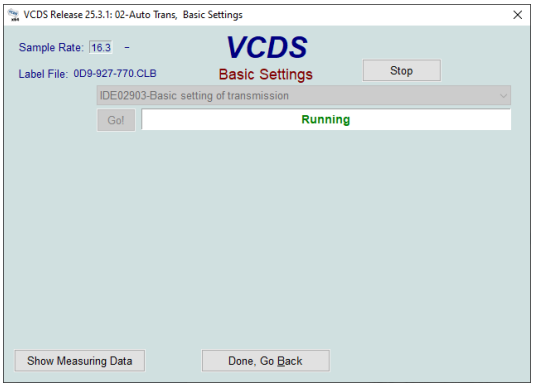
Next select 02-Auto Trans



Select Basic Settings - 04



Finally Scroll down the List and Select Basic Settings of Transmission and Click GO



Transmission Fault / Limp

The SyvTcm picks up any TCM Limps or Faults from the gearbox control unit, these are then updated in tcmLimp and tcmFault items in Scal which is recommended to be transmitted to the Engine Control module via CAN to limit Engine Torque in the event there is a fault in the Transmission.

The tcmLimp item will become temporarily active if the users is trying to enter Launch mode and the Transmission control is not up to temperate or in the correct mode.

Monitoring Parameters Available

Parameter	Description
Bpf	Base shift profile state used for internal mode logic (debug variable).
InputShaftSpd	Input shaft speed (RPM).
OutputShaftSpd	Output shaft speed (RPM).
OutputShaftSpdKph	Output shaft interpreted as vehicle road speed (KPH).
TargetGear	Gear currently commanded by shift strategy or driver request.
GearBlipState	Indicates throttle blip activity during downshifts (active/inactive).
ShiftState	Current shift phase (idle, initiating, synchronizing, clutch handover, complete).
EngTrqLim	Gearbox-commanded engine torque limit request.
EngTrqLimRed	Active torque reduction value applied based on gearbox request.
EngTrqLimMlt	Torque reduction multiplier determining reduction aggressiveness.
tcmMode	Current operating mode (Normal or Dynamic).
GearboxPos	Actual gearbox state detected (P/R/N/D/M).
GearboxPosReq	Requested gearbox position from shifter input.
ShifterPos	Real-time physical shifter hardware position feedback.
ParkButton	Park command switch status (pressed/released).
ReverseButton	Reverse command switch status.
DriveButton	Drive command switch status.
NeutralButton	Neutral command switch status.
ManualAutoButton	Manual/Auto mode togglee switch status.
PaddleUp	Upshift paddle status.
PaddleDown	Downshift paddle status.
Gbot	Internal gearbox fluid temperature
MaxDownshiftRpm	RPM limit above which downshifts are prevented.
ReverseLight	Output state flag for reverse light activation.
EngTrqEstOutputExt	Estimated actual torque delivered into the gearbox after limiters.
EngTrqEstOutputPot	Estimated potential torque before torque interventions.
EngTrqDmdPps	Engine torque request used during shifts, launch, or mode changes.
ClutchAPressure	Clutch A or 1 Pressure
ClutchBPressure	Clutch B or 2 Pressure
TargetRpm	Target engine RPM used during rev-matching and launch control.
TcmLimp	Indicates if the control system is in limp or fallback mode.
TransFault	Fault Number set from TCM