

Signal Definitions

Shown in the table below is a comprehensive list of the signals logged by the MoTeC C187 data logger.

The first column lists the signal names used in the 2024 production release and the second column lists these same signals, but with some being revised for the 2025 season.

Each row has a signal description and where the signal originates from.

SIGNAL - DHR_MGMD1_NG_005_Production	SIGNAL - DHR_MGMD4_009_NG_Production SIGNAL - DHR_MGMD4_010_NG_Production	Description	Signal Source
	"..." means the signal name will match previous version		
5V Aux Supply	"..."	internal 5 volt sensor supply	MoTeC C187
8V Aux Supply	"..."	internal 8 volt sensor supply	MoTeC C187
a_steer_wheel	a_steer_wheel_PSCM	relative steering wheel angle reported by the PSCM	PSCM
abs_fault_info_ABS	D_fault_info_ABS	bit matrix to show if a fault is stored in the ABS module	ABS
acc_x_c187	acc_x_C187	roll rate measured by the Motec accelerometer; located internal to the dash	MoTeC C187
acc_x_imu	acc_x_IMU	roll rate measured by the Bosch IMU	ABS
acc_y_c187	acc_y_C187	pitch rate measured by the Motec accelerometer; located internal to the dash	MoTeC C187
acc_y_imu	acc_y_IMU	pitch rate measured by the Bosch IMU	ABS
acc_z_c187	acc_z_C187	yaw rate measured by the Motec accelerometer; located internal to the dash	MoTeC C187
acc_z_imu	acc_z_IMU	yaw rate measured by the Bosch IMU	ABS
Alarm Bat Volts Hi	ALARM BATT VOLT HIGH	high battery voltage alarm	MoTeC C187
Alarm Bat Volts Lo	ALARM BATT VOLT LOW	low battery voltage alarm	MoTeC C187
Alarm Diff Oil Temp Hi	ALARM DIFF HOT	high diff. temperature alarm	MoTeC C187
Alarm Eng Oil Pres Lo	ALARM OIL PRES LOW	low oil pressure alarm	MoTeC C187
Alarm Eng Oil Temp Hi	ALARM OIL HOT	high oil temperature alarm	MoTeC C187
Alarm Eng Temp Hi	ALARM CYL HEAD HOT	high cylinder head temperature alarm	MoTeC C187
Alarm Fuel Pres Lo	ALARM FUEL PRES LOW	low fuel pressure alarm	MoTeC C187
Alarm Gbox Oil Temp Hi	ALARM GBOX HOT	high gearbox temperature alarm	MoTeC C187
* Does not exist in this version *	ALARM NO GPS COMMS	communication with the GPS module has been lost	MoTeC C187
* Does not exist in this version *	ALARM PCM ASLEEP	PCM has powered off	MoTeC C187

Alternator Current	i_alternator_curr_PCM	measured alternator current	PCM
ATMR1	T_eng_run_time_PCM	engine run time for the current key cycle	PCM
axle_ratio	r_axle_ratio	axle ratio set in MoTeC	MoTeC C187
B_abs_active_ABS	B_active_ABS	ABS active indicator	ABS
B_abs_dash_light	B_dash_light_ABS	indication that ABS control is deactivated due to a fault, is switched OFF, or working with RaceABS	ABS
B_abs_malfunction_ABS	B_malfunction_ABS	indication that ABS control is deactivated due to a fault	ABS
B_alarm_acknw	B_alarm_acknw_C187	alarm acknowledge indicator	MoTeC C187
B_bls_ABS	"..."	brake light switch	ABS
B_clear_codes	"..."	clear codes indicator	MoTeC C187
B_diff_pump_req	"..."	diff. pump request	MoTeC C187
B_fuel_reset	"..."	fuel usage reset indicator	MoTeC C187
B_ign_switch_status	B_ign_switch_stat_C187	ignition switch status	MoTeC C187
B_lift_pump_prime_req	"..."	lift pump prime request	MoTeC C187
B_lift_pump_req	"..."	lift pump on request	MoTeC C187
B_pit_switch_status	B_pit_switch_stat_C187	pit speed switch status	MoTeC C187
B_pump_out_act	B_pump_out_act_PCM	fuel pump out status reported by the PCM	PCM
B_pump_out_req	B_pump_out_req_C187	fuel pump out request indicator	MoTeC C187
B_rev_match_req	B_rev_match_req_C187	rev match request indicator	MoTeC C187
Beacon	"..."	Motec gps beacon	MoTeC C187
D_abs_pos_ABS	D_switch_pos_ABS	ABS switch position	ABS
* Does not exist in this version *	D_status_PSCM	electronic power steering system status	PSCM
* Does not exist in this version *	D_steering_rack_state_PSCM	electronic power steering operation status	PSCM
d_gear_ecu	D_gear_PCM	gear position reported by the PCM	PCM
DashMode	D_dash_mode_C187	dash display page	MoTeC C187
DES DI RAIL PRES	p_fuel_di_trgt_PCM	target DI rail pressure reported by the PCM	PCM
DES LAMBDA BANK 0	r_lambda_bnk0_trgt_PCM	lambda target for passenger side, bank 0 reported by the PCM	PCM
DES LAMBDA BANK 1	r_lambda_bnk1_trgt_PCM	lambda target for driver side, bank 1 reported by the PCM	PCM
DES LOAD TQE	n_load_trq_trgt_PCM	target idle load; ranges from [0 - 1] reported by the PCM	PCM
DES MAF	dm_maf_trgt_PCM	target mass air flow reported by the PCM	PCM
DES PCT DI FUEL 2	r_fuel_di_pct_trgt_PCM	targeted percent DI fuel system contribution reported by the PCM	PCM

DES PFI RAIL PRES	p_fuel_pfi_trgt_PCM	target PFI rail pressure reported by the PCM	PCM
DES THROTTLE ANGLE	a_throttle_pos_trgt_PCM	target throttle angle reported by the PCM	PCM
DES VCT EXH ANGLE	a_cam_exh_trgt_PCM	target exhaust cam position reported by the PCM	PCM
DES VCT INT ANGLE	a_cam_int_trgt_PCM	target intake cam position reported by the PCM	PCM
DI RAIL PRES	p_fuel_di_PCM	DI rail pressure reported by the PCM	PCM
Diag_ABSUnit_ABS	B_diag_hydrlic_unit_ABS	bit to show if an ABS error related to the hydraulic unit is present	ABS
Diag_FL_ABS	D_diag_fl_ABS	value to show faults related to the wheel speed sensor 0 - signal OK 1 - wiring related fault 2 - signal related fault	ABS
Diag_FT_ABS	D_diag_fr_ABS	value to show faults related to the wheel speed sensor 0 - signal OK 1 - wiring related fault 2 - signal related fault	ABS
Diag_RL_ABS	D_diag_rl_ABS	value to show faults related to the wheel speed sensor 0 - signal OK 1 - wiring related fault 2 - signal related fault	ABS
Diag_RR_ABS	D_diag_rr_ABS	value to show faults related to the wheel speed sensor 0 - signal OK 1 - wiring related fault 2 - signal related fault	ABS
Diag_FusePump_ABS	B_diag_fuse_pump_ABS	diagnostic to show if an ABS error related to the fuse or power supply of the ABS pump is present	ABS
Diag_FuseValve_ABS	B_diag_fuse_valve_ABS	diagnostic to show if an ABS error related to the fuse or power supply of the ABS valve is present	ABS
Diag_p_brake_front_ABS	B_diag_p_brake_front_ABS	diagnostic to show if the front pressure sensor is working properly; if the value is 1 an error is present	ABS

Diag_p_brake_rear_ABS	B_diag_p_brake_rear_ABS	diagnostic to show if the rear pressure sensor is working properly; if the value is 1 an error is present	ABS
Diag_yrs_ABS	B_diag_yrs_ABS	diagnostic to show if the yaw rate sensor is working properly; if the value is 1 an error is present	ABS
DiffPump_Auto	B_diff_pump_auto	automatic rear diff. pump control	MoTeC C187
DiffPump_Override	B_diff_pump_ovrd_C187	manual rear diff. pump control	MoTeC C187
EDF SPD ACTUAL	r_fan_speed_PCM	measured fan speed reported by the PCM [8.0% - 92.0%]	PCM
ETC DIAG CODE	D_etc_diag_code_PCM	electronic throttle diagnostic code	PCM
FAN SPEED	r_fan_speed_cmd_PCM	fan duty cycle command reported by the PCM; normal operating range is [0.08 - 0.92]	PCM
FRP RAW	p_fuel_di_raw_PCM	raw DI fuel rail pressure	PCM
FUEL SRC BANK 0	D_fuel_src_bnk0_PCM	indicates the source of target AFR	PCM
Fuel Used per Lap	"..."	fuel used per lap (need to input a 'Venue Length' for proper calculation)	MoTeC C187
GPS Altitude	"..."	Motec gps measured altitude	MoTeC C187
GPS Date	"..."	Motec gps date	MoTeC C187
GPS HDOP	"..."	Motec gps horizontal dilution of precision	MoTeC C187
GPS Heading	"..."	Motec gps heading	MoTeC C187
GPS Latitude	"..."	Motec gps measured latitude	MoTeC C187
GPS Longitude	"..."	Motec gps measured longitude	MoTeC C187
GPS Quality	"..."	Motec gps quality (signal validity)	MoTeC C187
GPS Sats Used	"..."	Motec gps number of satellites used	MoTeC C187
GPS Speed	"..."	Motec gps measured vehicle speed	MoTeC C187
GPS Time	"..."	Motec gps time	MoTeC C187
GPS Valid	"..."	Motec gps signal valid indicator	MoTeC C187
IAT11 ENG	t_intake_11_PCM	air charge temperature, post air filter reported by the PCM	PCM
IAT12 ENG	t_intake_12_PCM	manifold temperature reported by the PCM	PCM
* Does not exist in this version *	i_steering_rack_PSCM	current draw by the power steering motor reported by the PSCM	PSCM
l_tire_circ	"..."	tire circumference	MoTeC C187
LAMBDA BANK 0	r_lambda_bnk0_PCM	passenger side lambda value reported by the PCM	PCM
LAMBDA BANK 1	r_lambda_bnk1_PCM	driver side lambda value reported by the PCM	PCM

LAMBDA CMD BANK 0	r_lambda_bnk0_cmd_PCM	commanded lambda value for the passenger side cylinder bank reported by the PCM	PCM
LAMBDA CMD BANK 1	r_lambda_bnk1_cmd_PCM	commanded lambda value for the driver side cylinder bank reported by the PCM	PCM
Lap Counter	"..."	number of laps completed (need to input a start/stop GPS location for proper calculation)	MoTeC C187
Lap Distance	"..."	current lap distance (need to input a 'Venue Length' for proper calculation)	MoTeC C187
Lap Gain/Loss Running	"..."	lap delta based on 'Fastest Lap' time (need to input a 'Venue Length' for proper calculation)	MoTeC C187
Lap Number	"..."	current lap number (need to input a start/stop GPS location for proper calculation)	MoTeC C187
Lap Speed	"..."	average lap speed (need to input a 'Venue Length' for proper calculation)	MoTeC C187
Lap Time	"..."	lap time from the most recently completed lap (need to input a start/stop GPS location for proper calculation)	MoTeC C187
Lap Time Predicted	"..."	predicted lap time (need to input a 'Venue Length' for proper calculation)	MoTeC C187
LiftPump_Run_Req	B_lift_pump_run_req	lift pump request while engine running	MoTeC C187
* Does not exist in this version *	M_steering_column_PSCM	steering column torque reported by the PSCM	PSCM
MAF BANK 1	dm_maf_bnk0_PCM	measured air flow for passenger side cylinder bank reported by the PCM	PCM
MAF BANK 2	dm_maf_bnk1_PCM	measured air flow for driver side cylinder bank reported by the PCM	PCM
MAP RAW	p_map_raw_PCM	raw manifold absolute pressure reported by the PCM	PCM
MISFIRE COUNT	D_misfire_count_PCM	total accumulated cylinder misfires reported by the PCM	PCM
n_engine_rpm_ecu	n_engine_rpm_PCM	engine rpm reported by the pcm	PCM
n_pitch_rate_imu	n_pitch_rate_IMU	pitch rate (°/s) measured by the Bosch IMU	ABS
n_roll_rate_imu	n_roll_rate_IMU	roll rate (°/s) measured by the Bosch IMU	ABS
n_wheel_rpm_fl_ecu	n_wheel_rpm_fl_PCM	front left wheel rpm reported by the PCM	PCM (recalculating ABS value)
n_wheel_rpm_fr_ecu	n_wheel_rpm_fr_PCM	front right wheel rpm reported by the PCM	PCM (recalculating ABS value)

n_wheel_rpm_rl_ecu	n_wheel_rpm_rl_PCM	rear left wheel rpm reported by the PCM	PCM (recalculating ABS value)
n_wheel_rpm_rr_ecu	n_wheel_rpm_rr_PCM	right rear wheel rpm reported by the PCM	PCM (recalculating ABS value)
n_yaw_rate_imu	n_yaw_rate_IMU	yaw rate (°/s) measured by the Bosch IMU	ABS
NO ABS COMMS	ALARM NO ABS COMMS	indicator that the Motec dash is not communicating properly with the ABS module via CAN	MoTeC C187
NUM DTC	D_num_dtc_PCM	number of DTC's reported by the PCM	PCM
NUM OF INJ ON	D_inj_on_PCM	number of injectors currently on	PCM
p_22_manifold_ecu	p_22_manifold_PCM	manifold pressure reported by the PCM	PCM
p_amb_ecu	p_amb_PCM	ambient pressure reported by the PCM	PCM
p_brake_front_ABS	"..."	brake pressure on the front axle	ABS
p_brake_rear_ABS	"..."	brake pressure on the rear axle	ABS
p_oil_ecu	p_oil_PCM	oil pressure reported by the PCM	PCM
PCODE ##	"..."	key to indicate a set vehicle code	PCM
PCODE## STATE	"..."	indicates the status of a code if there is one stored in memory	PCM
PFDI PCT DI FUEL	r_fuel_di_pct_PCM	measured percentage of injected fuel coming from the DI fuel system reported by the PCM	PCM
PFI RAIL PRES	p_fuel_pfi_PCM	PFI rail pressure	PCM
PitSpeedLim	v_pit_speed_lim	pit speed limit	MoTeC C187
PTLP ECT LMT ACTIVE	B_ptlp_ect_PCM	powertrain limit protection active if the value is 1 - engine coolant temp reported by the PCM	PCM
PTLP EOP LMT ACTIVE	B_ptlp_eop_PCM	powertrain limit protection active if the value is 1 - engine oil pressure reported by the PCM	PCM
PTLP EOT LMT ACTIVE	B_ptlp_eot_PCM	powertrain limit protection active if the value is 1 - engine oil temperature reported by the PCM	PCM
PTLP TOT LMT ACTIVE	B_ptlp_tot_PCM	powertrain limit protection active if the value is 1 - transmission oil temperature reported by the PCM	PCM
r_aps1_ecu	r_aps1_PCM	accelerator pedal position reported by the PCM	PCM
r_clutch_pedal_ecu	r_clutch_pedal_PCM	clutch pedal position reported by the PCM	PCM
r_fan_spd_corrected	r_fan_speed_corrected	scaled fan duty cycle; normal operating range is [0 - 100]	PCM

Running Lap Time	"..."	elapsed time of current lap (need to input a start/stop GPS location for proper calculation)	MoTeC C187
SPARK TIMING	a_spark_adv_PCM	spark advance reported by the PCM	PCM
t_amb_ecu	t_amb_PCM	ambient temperature reported by the PCM	PCM
t_cylh_ecu	t_cylh_PCM	cylinder head temp reported by the PCM	PCM
t_dash_c187	t_dash_C187	temperature of the Motec dash	MoTeC C187
t_diff_ecu	t_diff_PCM	diff. temperature reported by the PCM	PCM
t_gearbox	t_gearbox_C187	gearbox oil temperature	MoTeC C187
t_int_ecu	t_int_PCM	intake air temperature reported by the PCM	PCM
t_oil	t_oil_C187	engine oil temperature	MoTeC C187
t_water_ecu	t_water_PCM	coolant temperature calculated by the PCM	PCM
THROTTLE A ANGLE	a_throttle_pos_A_PCM	passenger side throttle position	PCM
THROTTLE B ANGLE	a_throttle_pos_B_PCM	driver side throttle position	PCM
Total Fuel Used	"..."	total fuel used since last 'fuel reset'	PCM
TurnLghtLeftOn B Stat	D_turn_left_stat_SCCM	left turn signal status	SCCM
TurnLghtRightOn B Stat	D_turn_right_stat_SCCM	right turn signal status	SCCM
u_bat_ecu	u_bat_volts_PCM	battery voltage reported by the PCM	PCM
u_bat_volts_dash	u_bat_volts_C187	battery voltage measured by the Motec dash	MoTeC C187
* Does not exist in this version *	u_steering_rack_PSCM	voltage measured at the steering rack reported by the PSCM	PSCM
v_ground	v_ground_speed	ground speed reported by the Motec dash	MoTeC C187
v_wheel_fl_ABS	"..."	front left wheel speed reported by the ABS module	ABS
v_wheel_fr_ABS	"..."	front right wheel speed reported by the ABS module	ABS
v_wheel_rl_ABS	"..."	rear left wheel speed reported by the ABS module	ABS
v_wheel_rr_ABS	"..."	rear right wheel speed reported by the ABS module	ABS
VCT ANGLE EXH BANK 0	a_cam_exh_bnk0_PCM	measured passenger side exhaust cam position	PCM
VCT ANGLE EXH BANK 1	a_cam_exh_bnk1_PCM	measured driver side exhaust cam position	PCM
VCT ANGLE INT BANK 0	a_cam_int_bnk0_PCM	measured passenger side intake cam position	PCM
VCT ANGLE INT BANK 1	a_cam_int_bnk1_PCM	measured driver side intake cam position	PCM
VEH SPEED	v_veh_speed_PCM	vehicle speed reported by the PCM	PCM
Vehicle Odometer	"..."	total accumulated vehicle mileage	MoTeC C187

vol_acc_FA_reservoir_ABS	"..."	fill level of the brake fluid reservoir of the front axle	ABS
vol_acc_RA_reservoir_ABS	"..."	fill level of the brake fluid reservoir of the rear axle	ABS
vol_fuel_used	Fuel Used	total fuel used since last 'fuel reset'	MoTeC C187
WheelQuality_FL_ABS	D_wheel_quality_fl_ABS	Identification signal for wheel speed signal disturbances, check the sensor and the surrounding if the bit is greater than 1	ABS
WheelQuality_FR_ABS	D_wheel_quality_fr_ABS	Identification signal for wheel speed signal disturbances, check the sensor and the surrounding if the bit is greater than 1	ABS
WheelQuality_RL_ABS	D_wheel_quality_rl_ABS	Identification signal for wheel speed signal disturbances, check the sensor and the surrounding if the bit is greater than 1	ABS
WheelQuality_RR_ABS	D_wheel_quality_rr_ABS	Identification signal for wheel speed signal disturbances, check the sensor and the surrounding if the bit is greater than 1	ABS