

Fig. 03.6

CONTROL MODULE PIN-OUT INFORMATION

Engine Control Module

Pin	Description and Characteristic
PH-9	BRAKE CANCEL SWITCH - NORMALLY CLOSED/ GROUND WHEN ACTIVATED
PH-10	FUEL PUMP 2 MODULE MONITOR - 10% FREQUENCY/50% DUTY CYCLE + OK, 25% OR 75% DUTY CYCLE = FAULT
PH-11	AIR CLEANER SOLENOID VALVE DRIVE - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-14	AIR CLEANER SOLENOID VALVE DRIVE - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
SG	SENSOR GROUND 1 - GROUND
PH-27	FUEL PUMP DRIVE SIGNAL (TO ECU) - PWM, 100 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% - 51%
PH-34	AIR CONDITIONING COMPRESSOR CLUTCH RELAY DRIVE - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
SS	SPEED CONTROL SWITCH PRESSURE SENSITIVE RESISTANCE
PH-49	COOLING FAN MODULE CONTROL - PWM, 100% POSITIVE DUTY CYCLE RANGE = 4% - 51%
PH-51	FUEL PUMP 2 DRIVE (TO FUEL PUMP 2 MODULE) - PWM, 100 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% - 51%
PH-63	IGNITION COIL ACTIVATE - CYLINDER 2 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-62	IGNITION COIL ACTIVATE - CYLINDER 4 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-60	IGNITION COIL ACTIVATE - CYLINDER 6 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-63	IGNITION COIL ACTIVATE - CYLINDER 8 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-67	IGNITION COIL ACTIVATE - CHANGER 1 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-68	IGNITION COIL ACTIVATE - CHANGER 2 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-69	IGNITION COIL ACTIVATE - CHANGER 3 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-69	IGNITION COIL ACTIVATE - CHANGER 4 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-72	FUEL INJECTOR BRINE - CYLINDER 2 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-114	FUEL INJECTOR BRINE - CYLINDER 3 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-115	FUEL INJECTOR BRINE - CYLINDER 4 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-117	FUEL INJECTOR BRINE - CYLINDER 6 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-118	FUEL INJECTOR BRINE - CYLINDER 8 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-120	FUEL INJECTOR BRINE - CHANGER 1 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-120	FUEL INJECTOR BRINE - CHANGER 2 - TO ACTIVATE ECU SWITCHES CIRCUIT TO GROUND
PH-121	AIR CONDITIONING PRESSURE SENSOR SIGNAL, NORMAL 0 - 5V, TRANSDUCER - VOLTAGE INCREASES AS PRESSURE INCREASES
PH-131	IGNITION MONITOR BANK 1 - PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE
PH-132	IGNITION MONITOR BANK 2 - PULSED SIGNAL, 3 PULSES PER ENGINE CYCLE

Rear Control Module

Pin	Description and Characteristic
CA109-8	IGNITION SWITCHED POWER SUPPLY (B+)
B+	FUEL PUMP POWER SUPPLY - B+ WHEN FUEL PUMP RELAY IS ACTIVATED
SG	LOCK GROUND / FUEL PUMP DRIVE SHIELD - GROUND
B+	BATTERY POWER SUPPLY - B+
O	GROUND
CA109-12	FUEL PUMP ACTIVATE - GROUND / PWM
S	CA109-1 SPS+
S	CA109-2 SPS-
I	CA109-9 FUEL PUMP DRIVE SIGNAL - PWM, 100 Hz, NORMAL POSITIVE DUTY CYCLE RANGE = 4% - 51%

NOTE: Refer to the Appendix at the rear of this book for Network Messages.

COMPONENTS

Component	Connector(s)	Connector Description	Location
AIR CLEANER SOLENOID VALVE	FH10	2-WAY / BLACK	AIR CLEANER HOUSING
AIR CONDITIONING COMPRESSOR CLUTCH	PH49	2-WAY / BLACK	LOWER LH SIDE OF ENGINE
AIR CONDITIONING COMPRESSOR CLUTCH RELAY	PH49	2-WAY / BLACK	FRONT POWER DISTRIBUTION FUSE BOX - R8
AIR CONDITIONING PRESSURE SENSOR	FH110	4-WAY / BLACK	ENGINE COMPARTMENT, LH SIDE, HIGH PRESSURE REFERENCE LINE, BETWEEN COMPRESSOR AND CONDENSER TOP OF BRAKE PEDAL
BRAKE CANCEL SWITCH	CA98	2-WAY / GREY	ENGINE COMPARTMENT, RH FRONT, REARWARD OF RADATOR
COOLING FAN MODULE	FH108 FH109	2-WAY / BLACK 13H-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
ENGINE CONTROL MODULE	P11	—	ENGINE COMPARTMENT, RH SIDE
FRONT POWER DISTRIBUTION FUSE BOX	IS1	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 1 (V8 SC)	IS7	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 2 (V8 SC)	IS2	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 3 (V8 SC)	IS8	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 4 (V8 SC)	IS9	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 5 (V8 SC)	IS4	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 6 (V8 SC)	IS10	2-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 7 (V8 SC)	FR2	8-WAY / BLACK	FUEL RAIL / INTAKE MANIFOLD
FUEL INJECTOR 8 (V8 SC)	FR4	4-WAY / BLACK	FUEL TANK, RH SIDE
FUEL PUMP 1	FR3	4-WAY / BLACK	FUEL TANK, LH SIDE
FUEL PUMP 2	CA93	10-WAY / BLACK	LUGGAGE COMPARTMENT, RH REAR
FUEL PUMP RELAY	—	—	REAR POWER DISTRIBUTION FUSE BOX - R15
IGNITION CAPACITOR	PI4	2-WAY / BLACK	RH CYLINDER HEAD, REAR
IGNITION MODULE AND COIL 1	PI2	4-WAY / BLACK	LH CYLINDER HEAD
IGNITION MODULE AND COIL 2	PI6	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 3	PI3	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 4	PI7	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 5	PI4	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 6	PI8	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 7	PI5	4-WAY / BLACK	RH CYLINDER HEAD
IGNITION MODULE AND COIL 8	PI9	4-WAY / BLACK	RH CYLINDER HEAD
INTERCOOLER PUMP	CP2	2-WAY / BLACK	LH CYLINDER HEAD
REAR ELECTRONIC CONTROL MODULE	CA63	17-WAY / BLACK	ENGINE COMPARTMENT, RH SIDE, ADJACENT TO RADATOR
REAR POWER DISTRIBUTION FUSE BOX	CA100	12-WAY / BLACK	LUGGAGE COMPARTMENT, RH REAR
STEERING WHEEL SPEED CONTROL SWITCHES	CA101	29-WAY / BLACK	LUGGAGE COMPARTMENT, RH REAR
STEERING WHEEL SPEED CONTROL SWITCHES	CA102	26-WAY / NATURAL	LUGGAGE COMPARTMENT, RH REAR
STEERING WHEEL SPEED CONTROL SWITCHES	CA103	—	LUGGAGE COMPARTMENT, RH REAR
STEERING WHEEL SPEED CONTROL SWITCHES	SC2	6-WAY / BLACK	STEERING WHEEL

HARNES IN-LINE CONNECTORS

Connector	Connector Description / Location	Location
CP1	10-WAY / BLACK / INTERCOOLER PUMP LINK LEAD	ENGINE COMPARTMENT, RH FRONT, ADJACENT TO RADATOR
FC10	14-WAY / GREEN / FASCIA HARNESS TO FRONT HARNESS	BEHIND INSTRUMENT PANEL, RH SIDE
FC17	10-WAY / BLACK / STEERING WHEEL CASSETTE	STEERING COLUMN
PH1	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	RH 'A' POST, LOWER
PH2	16-WAY / GREY / CABIN HARNESS TO FRONT HARNESS	RH 'A' POST
PH3	16-WAY / BLUE / CABIN HARNESS TO FRONT HARNESS	LH 'A' POST
IS8	6-WAY / BLACK / ENGINE HARNESS TO FUEL INJECTOR LINK	ENGINE, LH REAR
PH1	42-WAY / BLACK / ENGINE HARNESS TO VEHICLE HARNESS	ENGINE, RH REAR
PH2	8-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ENGINE COMPARTMENT, BULKHEAD, PASSENGER SIDE

GROUPS

Ground	Location
CA196	LUGGAGE COMPARTMENT, RH SIDE
PH22	ENGINE COMPARTMENT, BEHIND LH HEADLAMP
PH42	ENGINE COMPARTMENT, BEHIND RH HEADLAMP
PH65	ENGINE COMPARTMENT, BEHIND LH HEADLAMP (RADATOR FAN GROUND)
PS1	ENGINE COMPARTMENT, ENGINE BLOCK

FOR CONTROL MODULE PIN-OUT INFORMATION, UNFOLD PAGE TO LEFT.

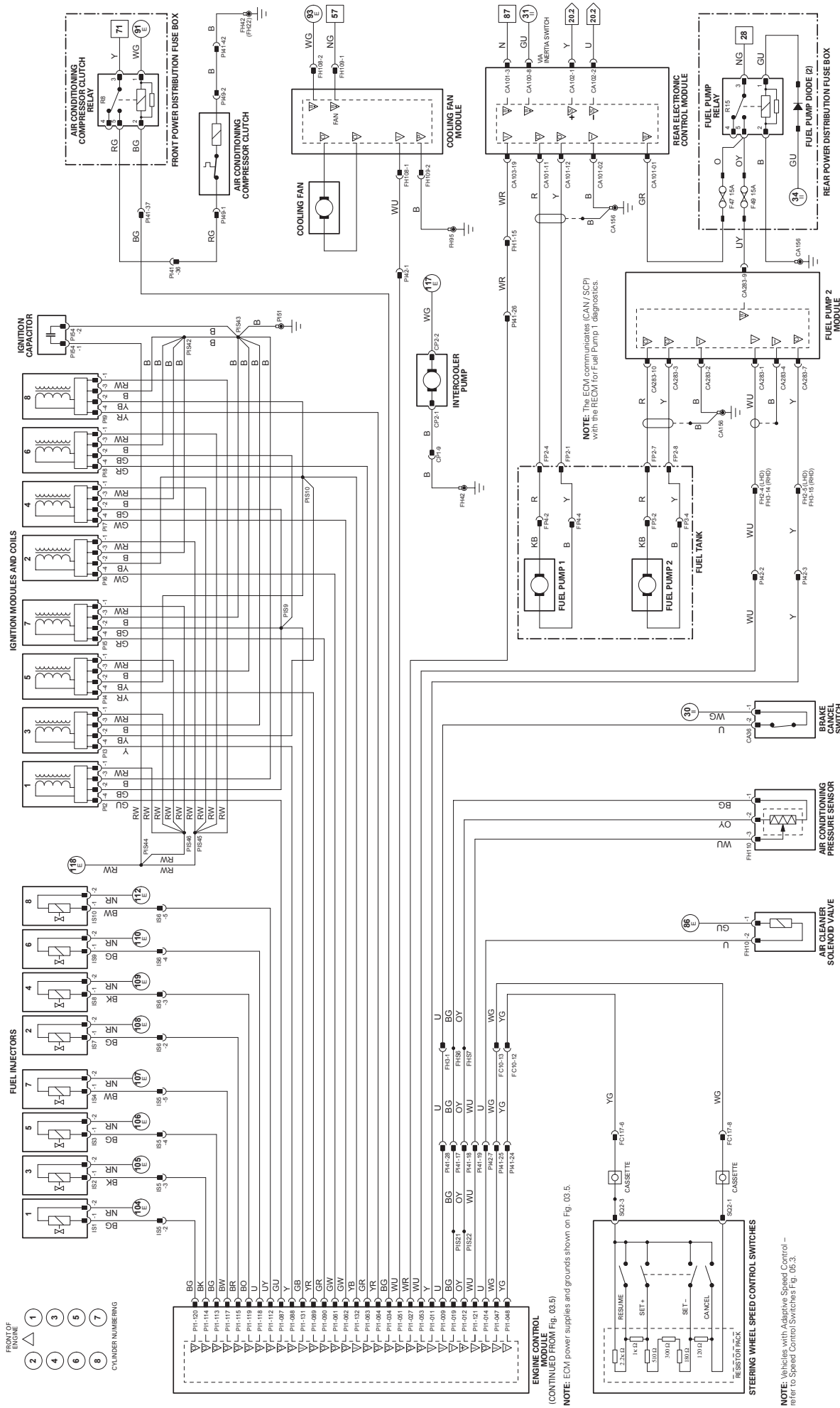
The following abbreviations are used to represent values for Control Module Pin-Out data

I	Input	PG	Power Ground	C	CAN Network	D	Serial and Encoded Data
O	Output	SS	Sensor / Signal Supply	S	SCP Network	V	Voltage (DC)
B+	Battery Voltage	SS	Sensor / Signal Ground	D2	D2B Network	PWM	Pulse Width Modulated

CAUTION: The information on this data page is furnished to aid the user in understanding circuit operation. THIS INFORMATION SHOULD BE USED FOR REFERENCE ONLY.

NOTE: The values listed are approximately those that can be expected at the control module connector pins with all circuit connections made and all components connected and fitted.

Refer to the front of this book for detailed information and illustrations regarding the location and identification of harnesses, relays, fuses, grounds, control modules and control module pins.



Legend for symbols and icons used in the diagram:

- Input
- Output
- Battery Voltage
- Power Ground
- Sensor/Signal Supply V
- Sensor/Signal Ground
- CAN
- D2B Network
- SCP

Fig. 03.1, Fig. 03.2, Fig. 03.3, Fig. 03.4, Fig. 03.5, Fig. 03.6, Fig. 03.7

**Fig. 04.1**

**CONTROL MODULE PIN-OUT INFORMATION**

**Parking Brake Control Module**

Pin	Description and Characteristic
I	CA24-3 GEAR SWITCH (NORMALLY OPEN: OPEN CIRCUIT / GROUND)
SS	CA24-8 SIGNAL SUPPLY (VOLTAGE: NOMINAL 5 V)
O	CA24-10 CLUTCH POSITION SENSOR
I	CA24-11 CLUTCH PEDAL POSITION SENSOR FEEDBACK SIGNAL: VARIABLE VOLTAGE

**Engine Control Module**

Pin	Description and Characteristic
I	PH-131 AUTOMATIC-PARK/NEUTRAL SIGNAL: B+ WHEN ACTIVATED
I	PH-132 MANUAL-PARK/NEUTRAL SIGNAL: B+ WHEN ACTIVATED
I	PH-133 MANUAL-PARK/NEUTRAL SIGNAL: B+ WHEN ACTIVATED
I	PH-134 MANUAL-PARK/NEUTRAL SIGNAL: B+ WHEN ACTIVATED
I	PH-135 CLUTCH PEDAL POSITION SENSOR FEEDBACK SIGNAL: B+ WHEN ACTIVATED

**Transmission Control Module**

Pin	Description and Characteristic
C	GB2 CAN-
C	GB2 CAN+
B+	GB2-6 IGNITION SWITCHED POWER SUPPLY: B+
D	GB2-10 PARK/NEUTRAL SIGNAL: GROUND WHEN ACTIVATED
B+	GB2-13 POWER GROUND: GROUND
B+	GB2-14 POWER GROUND: GROUND
B+	GB2-16 POWER GROUND: GROUND

NOTE: Refer to the Appendix at the rear of this book for Network Messages.

**COMPONENTS**

Component	Connector(s)	Connector Description	Location
CLUTCH CANCEL SWITCH	CA286 (LHD) CA291 (RHD)	2-WAY / BLACK 5-WAY / BLACK	TOP OF CLUTCH PEDAL (TOP SWITCH)
CLUTCH PEDAL POSITION SENSOR	CA287	6-WAY / BLACK	TOP OF CLUTCH PEDAL
CLUTCH PEDAL SAFETY SWITCH	CA286	2-WAY / BLACK	TOP OF CLUTCH PEDAL (BOTTOM SWITCH)
ENGINE CONTROL MODULE	PH1	134-WAY / BLACK	FRONT BULKHEAD, PASSENGER SIDE
IGNITION SWITCH	FC18	7-WAY / BLACK	STEERING COLUMN COWLING
J GATE MODULE	CA248	16-WAY / BLACK	J GATE ASSEMBLY
NEUTRAL SWITCH	GB4	2-WAY / BLACK	TRANSMISSION, LH REAR
PARKING BRAKE CONTROL MODULE	CA241 CA242	4-WAY / BLACK 12-WAY / BLACK	LUGGAGE COMPARTMENT, RH REAR
REVERSE SWITCH	GB5	2-WAY / BLACK	TRANSMISSION, LH REAR
TRANSMISSION CAPACITOR (V8)	GB7	2-WAY / BLACK	ENGINE COMPARTMENT, BULKHEAD
TRANSMISSION CONTROL MODULE	PH9 PH8	2-WAY / BLACK 16-WAY / BLACK	ENGINE COMPARTMENT, BULKHEAD TRANSMISSION CONTROL VALVE ASSEMBLY

**HARNESSES IN-LINE CONNECTORS**

Connector	Connector Description / Location	Location
FC26	16-WAY / BLUE / CABIN HARNESS TO PASSENGER HARNESS	BEHIND INSTRUMENT PANEL, DRIVER SIDE
PH1	20-WAY / BLACK / CABIN HARNESS TO FRONT HARNESS	RH 'A' POST, LOWER
PH3	16-WAY / BLUE / CABIN HARNESS TO FRONT HARNESS	LH 'A' POST
GB1	16-WAY / GREY / ENGINE HARNESS TO TRANSMISSION HARNESS	ADJACENT TO TRANSMISSION BELL HOUSING
PH1	42-WAY / BLACK / ENGINE HARNESS TO VEHICLE HARNESS	ENGINE COMPARTMENT, BULKHEAD, PASSENGER SIDE
PH2	8-WAY / BLACK / ENGINE HARNESS TO FRONT HARNESS	ENGINE COMPARTMENT, BULKHEAD, PASSENGER SIDE

**GROUND**

Ground	Location
CA241	UNDER LH FRONT SEAT
PH2 (LHD)	ENGINE COMPARTMENT BEHIND RH WHEEL ARCH LINER
PH2 (RHD)	ENGINE COMPARTMENT BEHIND LH WHEEL ARCH LINER

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