RED DC VOLTAGE
BLUE INPUT SIGNALS
BLACK GROUNDS, SHIELDS AND RETURNS
PURPLE OUTPUT SIGNALS
GREEN DATALINKS
REPRESENTS FEMALE PIN
REPRESENTS MALE PIN
REPRESENTS TWISTED PAIR
REPRESENTS SHIELD

NOTE: 1 SOME OF THE CIRCUITS SHOWN HERE WILL NOT BE ACTIVE IN ALL APPLICATIONS. CONSULT THE EQUIPMENT MANUFACTURER'S LITERATURE TO DETERMINE WHICH CIRCUITS ARE USED.

NOTE 2: MAY BE EITHER INCREMENT OR DECREMENT DEPENDING ON THE VALUE OF THE ECM ADJUSTABLE PARAMETER "CRUISE CONTROL SETUP".

OEM RESPONSIBILITY

ELECTRONIC CONTROL MODULE OEM CONNECTOR

MAGNETIC VEHICLE SPEED/ DIGITAL VEHICLE SPEED SENSOR
MAGNETIC VEHICLE SPEED SIGNAL (+)/DIGITAL VEHICLE SPEED SIGNAL <27
MAGNETIC VEHICLE SPEED RETURN (–) <36

TELEFLEX MORSE ACCELERATOR PEDAL ASSEMBLY
ACCELERATOR POSITION NUMBER 1 +5 VOLT SUPPLY (SENSOR SUPPLY 4) <22
ACCELERATOR POSITION NUMBER 1 SIGNAL <09
ACCELERATOR POSITION NUMBER 1 RETURN <23
ACCELERATOR POSITION NUMBER 2 +5 VOLT SUPPLY (SENSOR SUPPLY 5) <21
ACCELERATOR POSITION NUMBER 2 SIGNAL <35
ACCELERATOR POSITION NUMBER 2 RETURN (SENSOR RETURN) <32

REMOTE ACCELERATOR PEDAL/ LEVER ASSEMBLY
REMOTE ACCELERATOR PEDAL/LEVER +5 VOLT SUPPLY
REMOTE ACCELERATOR PEDAL/LEVER SIGNAL <26
REMOTE ACCELERATOR PEDAL/LEVER RETURN

HALL EFFECT SPEED SENSOR
HALL EFFECT SENSOR +5 VOLT SUPPLY
HALL EFFECT SPEED SENSOR SIGNAL <30
HALL EFFECT SPEED SENSOR RETURN

ENGINE BRAKE SELECTOR SIGNAL NUMBER 1 <08
THREE POSITION ENGINE BRAKE LEVEL SWITCH
ENGINE BRAKE SELECTOR SIGNAL NUMBER 2 <18
ENGINE BRAKE ON/OFF SWITCH
CLUTCH/ENGINE PROTECTION OVERRIDE SWITCH SIGNAL <15
CLUTCH/ENGINE PROTECTION OVERRIDE SWITCH
SERVICE BRAKE POSITION SWITCH SIGNAL <05
SERVICE BRAKE POSITION SWITCH
CRUISE CONTROL/PTO RESUME/ACCELERATE/INCREMENT SWITCH SIGNAL <24
CRUISE CONTROL/PTO SET/COAST/DECREMENT SWITCH SIGNAL <25
CRUISE CONTROL/PTO SET RESUME SELECT SWITCH
CRUISE CONTROL/PTO ON/OFF SWITCH SIGNAL <16
CRUISE CONTROL/PTO ON/OFF SWITCH
AIR CONDITIONER PRESSURE SWITCH SIGNAL <06
AIR CONDITIONER PRESSURE SWITCH
FAN CONTROL SWITCH SIGNAL <17
FAN CONTROL SWITCH
ACCELERATOR INTERLOCK/ENGINE TORQUE LIMIT SWITCH SIGNAL <13
ACCELERATOR INTERLOCK/ENGINE TORQUE LIMIT SWITCH
DIESEL PARTICULATE FILTER REGENERATION SWITCH/DIAGNOSTIC TEST SWITCH SIGNAL <02
DIESEL PARTICULATE FILTER REGENERATION SWITCH/ DIAGNOSTIC TEST MODE SWITCH
MAXIMUM OPERATING SPEED/GOVERNOR TYPE SWITCH SIGNAL <14
MAXIMUM OPERATING SPEED/GOVERNOR TYPE SWITCH
REMOTE ACCELERATOR ON/OFF SWITCH SIGNAL <03
REMOTE ACCELERATOR ON/OFF SWITCH
REMOTE PTO ON/OFF SWITCH SIGNAL <04
REMOTE PTO ON/OFF SWITCH
ACCELERATOR ERROR LIMP HOME SWITCH SIGNAL <11
ACCELERATOR ERROR LIMP HOME SWITCH
SWITCH RETURN <34
TACHOMETER TACHOMETER OUTPUT SIGNAL <41
TACHOMETER

FAN CLUTCH SIGNAL <38
FAN CLUTCH RETURN (SENSOR RETURN) <29
FAN CLUTCH
ENGINE BRAKE LIGHT RELAY/IDLE SHUTDOWN RELAY SIGNAL <48
ENGINE BRAKE LIGHT RELAY/IDLE SHUTDOWN RELAY RETURN
ENGINE BRAKE LIGHT RELAY/IDLE SHUTDOWN RELAY
STARTER LOCKOUT RELAY SIGNAL <49
STARTER LOCKOUT RELAY RETURN (SENSOR RETURN) <42
STARTER LOCKOUT RELAY
ETHER INJECTION SOLENOID SIGNAL <40
ETHER INJECTION SOLENOID RETURN
ETHER INJECTION SOLENOID

ENGINE COOLANT LEVEL +5 VOLT SUPPLY (ONLY FOR 3 WIRE SENSORS)
ENGINE COOLANT LEVEL SIGNAL <28
ENGINE COOLANT LEVEL RETURN (SENSOR RETURN) <33
ENGINE COOLANT LEVEL SENSOR

AMBIENT AIR TEMPERATURE SIGNAL <19
AMBIENT AIR TEMPERATURE RETURN
AMBIENT AIR TEMPERATURE SENSOR

FAN SPEED SIGNAL <30
FAN SPEED +5 VOLT SUPPLY
FAN SPEED RETURN
FAN SPEED SENSOR

AFTERTREATMENT INTERFACE CONNECTOR (OPTIONAL)
CUMMINS RESPONSIBILITY

AFTERTREATMENT DIESEL OXIDATION CATALYST INLET TEMPERATURE SENSOR
AFTERTREATMENT DIESEL OXIDATION CATALYST INLET TEMPERATURE SIGNAL <37
AFTERTREATMENT DIESEL OXIDATION CATALYST INLET TEMPERATURE RETURN

AFTERTREATMENT DIESEL PARTICULATE FILTER INLET TEMPERATURE SENSOR
AFTERTREATMENT DIESEL PARTICULATE FILTER INLET TEMPERATURE SIGNAL <31
AFTERTREATMENT DIESEL PARTICULATE FILTER INLET TEMPERATURE RETURN

AFTERTREATMENT DIESEL PARTICULATE FILTER OUTLET TEMPERATURE SENSOR
AFTERTREATMENT DIESEL PARTICULATE FILTER OUTLET TEMPERATURE SIGNAL <50
AFTERTREATMENT DIESEL PARTICULATE FILTER OUTLET TEMPERATURE RETURN

AFTERTREATMENT DIESEL PARTICULATE FILTER DIFFERENTIAL PRESSURE SENSOR
AFTERTREATMENT DIESEL PARTICULATE FILTER DIFFERENTIAL PRESSURE +5 VOLT SUPPLY
AFTERTREATMENT DIESEL PARTICULATE FILTER DIFFERENTIAL PRESSURE SIGNAL <07
AFTERTREATMENT DIESEL PARTICULATE FILTER DIFFERENTIAL PRESSURE RETURN

9–PIN DEUTSCH CONNECTOR
NOT CONNECTED
NOT CONNECTED
BATTERY (+)
BATTERY (–)
SERVICE TOOL CONNECTOR
J1587 DATALINK (+) SAE J1587 DATALINK (+) <10
J1587 DATALINK (–) SAE J1587 DATALINK (–) <20
J1939 (+) SAE J1939 DATALINK (+) <46
J1939 (–) SAE J1939 DATALINK (–) <47
NOT CONNECTED

AFTERTREATMENT REGENERATION LAMP
AFTERTREATMENT REGENERATION LAMP RETURN <45
RED STOP LAMP
RED STOP LAMP RETURN <43
AMBER WARNING LAMP
AMBER WARNING LAMP RETURN <44
ACCESSORY
IGNITION
5A FUSE
IGNITION/KEYSWITCH INPUT SIGNAL <39
KEYSWITCH
START
BATTERY
BATTERY
GROUND TERMINAL
30A FUSE

OEM POWER CONNECTOR
ECM BATTERY RETURN (–) <01
ECM BATTERY RETURN (–) (OPTIONAL) <02
ECM BATTERY SUPPLY (+) <04
ECM BATTERY SUPPLY (+) (OPTIONAL) <03

CUMMINS RESPONSIBILITY

ELECTRONIC CONTROL MODULE ENGINE HARNESS CONNECTOR

TURBOCHARGER SPEED SENSOR
TURBOCHARGER SPEED SIGNAL (+) <58
TURBOCHARGER SPEED SIGNAL (–) <48

ENGINE SPEED/POSITION SENSOR NUMBER 1
ENGINE SPEED/POSITION SIGNAL NUMBER 1 <29
ENGINE SPEED/POSITION RETURN NUMBER 1 <18
ENGINE SPEED/POSITION +5 VOLT SUPPLY (SENSOR SUPPLY 3) <26

ENGINE SPEED/POSITION SENSOR NUMBER 2
ENGINE SPEED/POSITION SIGNAL NUMBER 2 <23
ENGINE SPEED/POSITION RETURN NUMBER 2
ENGINE SPEED/POSITION +5 VOLT SUPPLY

EXHAUST GAS PRESSURE SENSOR
EXHAUST GAS PRESSURE SIGNAL <30
EXHAUST GAS PRESSURE RETURN
EXHAUST GAS PRESSURE +5 VOLT SUPPLY

INTAKE MANIFOLD TEMPERATURE/PRESSURE SENSOR
INTAKE MANIFOLD PRESSURE SIGNAL <44
INTAKE MANIFOLD TEMPERATURE/PRESSURE +5 VOLT SUPPLY
INTAKE MANIFOLD TEMPERATURE SIGNAL <43
INTAKE MANIFOLD TEMPERATURE/PRESSURE RETURN

CRANKCASE PRESSURE SENSOR
CRANKCASE PRESSURE +5 VOLT SUPPLY
CRANKCASE PRESSURE RETURN
CRANKCASE PRESSURE SIGNAL <39
(SENSOR RETURN) <12
(SENSOR SUPPLY 2) <16

WATER IN FUEL SENSOR
WATER IN FUEL SIGNAL <14
WATER IN FUEL RETURN

TURBOCHARGER COMPRESSOR INLET AIR TEMPERATURE SENSOR
TURBOCHARGER COMPRESSOR INLET AIR TEMPERATURE SIGNAL <45
TURBOCHARGER COMPRESSOR INLET AIR TEMPERATURE RETURN

EGR TEMPERATURE SENSOR
EGR TEMPERATURE SIGNAL <47
EGR TEMPERATURE RETURN

COOLANT TEMPERATURE SENSOR
ENGINE COOLANT TEMPERATURE SIGNAL <15
ENGINE COOLANT TEMPERATURE RETURN

ENGINE OIL TEMPERATURE SENSOR
ENGINE OIL TEMPERATURE SIGNAL <13
ENGINE OIL TEMPERATURE RETURN
(SENSOR RETURN) <35

BAROMETRIC AIR PRESSURE SENSOR
BAROMETRIC PRESSURE SIGNAL <54
BAROMETRIC PRESSURE RETURN
BAROMETRIC PRESSURE +5 VOLT SUPPLY

ENGINE OIL PRESSURE SENSOR
ENGINE OIL PRESSURE SIGNAL <46
ENGINE OIL PRESSURE RETURN
ENGINE OIL PRESSURE +5 VOLT SUPPLY

EGR DIFFERENTIAL PRESSURE SENSOR
EGR DIFFERENTIAL PRESSURE RETURN
EGR DIFFERENTIAL PRESSURE SIGNAL <53
EGR DIFFERENTIAL PRESSURE +5 VOLT SUPPLY

AFTERTREATMENT FUEL PRESSURE SENSOR
AFTERTREATMENT FUEL PRESSURE +5 VOLT SUPPLY
AFTERTREATMENT FUEL PRESSURE RETURN
AFTERTREATMENT FUEL PRESSURE SIGNAL <22
(SENSOR RETURN) <19
(SENSOR SUPPLY 1) <17

AFTERTREATMENT FUEL INJECTOR
AFTERTREATMENT FUEL INJECTOR SIGNAL (+) <57
AFTERTREATMENT FUEL INJECTOR RETURN (–) <33

SAE J1939 DATALINK TERMINATOR
SAE J1939 (+) <50
SAE J1939 (–) <40

EGR VALVE MOTOR
EGR VALVE J1939 (–)
EGR VALVE J1939 (+)
EGR VALVE RETURN
EGR VALVE +12 VOLT SUPPLY <56

SAE J1939 DATALINK SERVICE TOOL CONNECTOR
SAE J1939 (+)
SAE J1939 (–)

VGT ACTUATOR
VGT ACTUATOR +12 VOLT SUPPLY <52
VGT ACTUATOR RETURN
VGT ACTUATOR J1939 (+)
SAE J1939 (–)

ENGINE BLOCK GROUND TERMINAL
ENGINE BLOCK GROUND TERMINAL

AFTERTREATMENT FUEL SHUTOFF VALVE 1
AFTERTREATMENT FUEL SHUTOFF VALVE 1 SIGNAL (+) <31
AFTERTREATMENT FUEL SHUTOFF VALVE 1 RETURN (–)

AFTERTREATMENT FUEL DRAIN VALVE
AFTERTREATMENT FUEL DRAIN VALVE SIGNAL (+) <21
AFTERTREATMENT FUEL DRAIN VALVE RETURN (–)

EXHAUST BRAKE SOLENOID
DISCRETE ENGINE BRAKE LIGHT RELAY RETURN
DISCRETE ENGINE BRAKE LIGHT RELAY SIGNAL

CYLINDER NUMBERS 1, 2, 3 SOLENOID 4, 5, 6 SOLENOID
ENGINE BRAKE SOLENOID NUMBER 1 SIGNAL <32
ENGINE BRAKE SOLENOID NUMBER 2 SIGNAL <51
INJECTOR #1
INJECTOR SOLENOID DRIVER CYLINDER 1 SIGNAL <11
INJECTOR SOLENOID DRIVER CYLINDER 1 RETURN <01
INJECTOR #2
INJECTOR SOLENOID DRIVER CYLINDER 2 SIGNAL <02
INJECTOR SOLENOID DRIVER CYLINDER 2 RETURN <03
INJECTOR #3
INJECTOR SOLENOID DRIVER CYLINDER 3 SIGNAL <05
INJECTOR SOLENOID DRIVER CYLINDER 3 RETURN <04
INJECTOR #4
INJECTOR SOLENOID DRIVER CYLINDER 4 SIGNAL <07
INJECTOR SOLENOID DRIVER CYLINDER 4 RETURN <06
INJECTOR #5
INJECTOR SOLENOID DRIVER CYLINDER 5 SIGNAL <08
INJECTOR SOLENOID DRIVER CYLINDER 5 RETURN <09
INJECTOR #6
INJECTOR SOLENOID DRIVER CYLINDER 6 SIGNAL <10
INJECTOR SOLENOID DRIVER CYLINDER 6 RETURN <20

FUEL SHUTOFF ACTUATOR TERMINAL
FUEL SHUTOFF ACTUATOR <42

OEM RESPONSIBILITY
HIGH EXHAUST GAS TEMPERATURE LAMP
HIGH EXHAUST GAS TEMPERATURE LAMP SUPPLY <55
HIGH EXHAUST GAS TEMPERATURE LAMP RETURN (RETURN)

ELECTRONIC CONTROL MODULE (ECM)
ENGINE PORT OEM PORT

AFTERTREATMENT TEMPERATURE SENSORS
AFTERTREATMENT FUEL INJECTOR
AFTERTREATMENT FUEL SHUTOFF VALVE
EGR TEMPERATURE SENSOR
CONNECTOR MATING FACE

ENGINE OIL PRESSURE SENSOR CONNECTOR MATING FACE
TYPE A

CRANKCASE PRESSURE AFTERTREATMENT PRESSURE BAROMETRIC PRESSURE SENSOR CONNECTOR MATING FACE
TYPE B

EXHAUST GAS PRESSURE SENSOR CONNECTOR MATING FACE
TYPE C

ENGINE POSITION 1 & 2, SENSOR CONNECTOR MATING FACE
TYPE D

ENGINE COOLANT TEMPERATURE & ENGINE OIL TEMPERATURE SENSOR CONNECTOR MATING FACE

ELECTRONIC CONTROL MODULE (ECM) ENGINE HARNESS CONNECTOR MATING FACE

SAE J1939 ENGINE DATALINK SERVICE CONNECTOR ENGINE CONTROL MODULE SIDE

EGR DIFFERENTIAL PRESSURE SENSOR AFTERTREATMENT DIESEL PARTICULATE FILTER DIFFERENTIAL PRESSURE SENSOR CONNECTOR MATING FACE
TYPE A

VARIABLE GEOMETRY TURBOCHARGER ACTUATOR CONNECTOR MATING FACE

EXHAUST GAS RECIRCULATION (EGR) VALVE MOTOR CONNECTOR MATING FACE

INTAKE MANIFOLD TEMPERATURE & PRESSURE SENSOR CONNECTOR MATING FACE

ELECTRONIC CONTROL MODULE (ECM) OEM HARNESS CONNECTOR MATING FACE

POWER HARNESS CONNECTOR MATING FACE

ENGINE BRAKE CONNECTOR MATING FACE

WATER–IN–FUEL SENSOR, TURBOCHARGER COMPRESSOR INLET AIR TEMPERATURE SENSOR CONNECTOR MATING FACE

TURBOCHARGER COMPRESSOR INLET AIR TEMPERATURE CONNECTOR MATING FACE

TURBOCHARGER SPEED SENSOR CONNECTOR MATING FACE

ISM CM876 Control Module Wiring Diagram

Bulletin 4021574–03

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OEM RESPONSIBILITY

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