

sSAM

Single Signal Actuation Module

Category	Pin Name	Pin No.	Function
MQ BUS	MQ-Bus, Switch Bank #1, COM	X5/13	X1/1 Trailer Turn Lamp Right
	MQ-Bus, Switch Bank #1, GND	X5/14	X1/2 Trailer Marker Lamps
	MQ-Bus, Switch Bank #2, COM	X5/15	X1/3 Trailer Tail Lamps
	MQ-Bus, Switch Bank #2, GND	X5/16	X1/3/1 Trailer Stop Lamps
	MQ-Bus, Switch Bank #3, COM	X5/17	X1/3/2 Trailer Turn Lamp Left
	MQ-Bus, Switch Bank #3, GND	X5/18	X2/1 DRL, Left
	MQ-Bus, Switch Bank #4, COM	X5/19	X2/2 Marker Lamp, Corner Front Left
	MQ-Bus, Switch Bank #4, GND	X5/20	X2/3 Marker Lamp, Corner Front Right
	MQ-Bus, Switch Bank #5, COM	X5/21	X2/4 DRL, Right
	MQ-Bus, Switch Bank #5, GND	X5/22	X2/5 Fuel Level Sensor, Supply
LIN BUS	LIN #3, COM	X5/14	X2/7 Fog Lamp, Front Left
	LIN #2, COM	X5/15	X2/8 DRL, Right
	LIN #1, Stalk/Steering, COM	X5/16	X2/9 Fuel Level Sensor, Feedback
	LIN #1, Stalk/Steering, GND	X5/17	X2/10 Turn Right Front Corner
	LIN #2, GND	X5/18	X2/13 High Beam, Left
	LIN #3, GND	X5/19	X2/16 Fog Lamp, Front Right
	LIN #4, GND	X5/20	X2/18 PT Early Wake Up
	LIN #5, GND	X5/21	X3/1 Alternator Charging (D+), Relay Control
	LIN #6, GND	X5/22	X3/3 Mirror Heating, Relay Control
	LIN #7, GND	X5/23	X3/4 Ignition (IGN, 1), Relay Control
CABIN CAN	SAM_Cab_CAN_H_Cabin	X5/27	X3/7 Trailer Option Power #1, Relay Control
	SAM_Cab_CAN_L_Cabin	X5/28	X3/10 Accessory (ACC, 3), Relay Control
	SAM_Cab_CAN_H_Cabin	X5/29	X3/13 Bi-Stable Relay, House Control, Open
	SAM_Cab_CAN_L_Cabin	X5/30	X3/16 Bi-Stable Relay, House Control, Close
	SAM_Cab_CAN_H_Cabin	X5/31	X3/17 Bi-Stable Relay, Basic Control, Open
	SAM_Cab_CAN_L_Cabin	X5/32	X3/18 Bi-Stable Relay, Basic Control, Close
	SAM_Cab_CAN_H_Cabin	X5/33	X4/1 Electric Horn, Control
	SAM_Cab_CAN_L_Cabin	X5/34	X4/2 Light Rotary Switch, BAT
	SAM_Cab_CAN_H_Cabin	X5/35	X4/7 Utility Light #2
	SAM_Cab_CAN_L_Cabin	X5/36	X4/10 Footwell Lamp, Zone 2, PWM (Ambience Light Zone 1)
PRIVATE CAN	Private CAN High	X7/17	X4/13 Light Rotary Switch Backlighting
	Private CAN Low	X7/28	X4/16 Backup Switch
	Private CAN High	X7/18	X4/17 Turn Left Front Corner
	Private CAN Low	X7/19	X4/18 Turn Right Front Corner
	Private CAN High	X7/20	X4/19 Ignition Switch, BAT
	Private CAN Low	X7/21	X4/20 Ignition Switch, Accessory
	Private CAN High	X7/22	X4/21 MG-Bus, Switch Bank #1, PWR
	Private CAN Low	X7/23	X4/22 LIN #3, PWR
	Private CAN High	X7/24	X4/23 LIN #2, PWR
	Private CAN Low	X7/25	X4/24 LIN #1, Stalk/Steering, PWR
POWER SUPPLY	SAM CAB, GND_P	STG/1	X4/17 Turn Left Front Corner
	SAM CAB, BATT 1	ST1/1	X4/18 Turn Right Front Corner
	SAM CAB, BATT 2	ST2/1	X4/19 Ignition Switch, BAT
	SAM CAB, BATT 3	ST3/1	X4/20 Ignition Switch, Accessory
	SAM CAB, BATT 4	ST4/1	X4/21 MG-Bus, Switch Bank #1, PWR
	SAM CAB, BATT 5	ST5/1	X4/22 LIN #3, PWR
	SAM CAB, BATT 6	ST6/1	X4/23 LIN #2, PWR
	SAM CAB, BATT 7	ST7/1	X4/24 LIN #1, Stalk/Steering, PWR
	SAM CAB, BATT 8	ST8/1	X4/25 Turn Signal Left, Indicator
	SAM CAB, BATT 9	ST9/1	X4/26 Turn Signal Right, Indicator
GROUND	SAM CAB, GND_P	STG/1	X4/17 Turn Left Front Corner
	SAM CAB, BATT 1	ST1/1	X4/18 Turn Right Front Corner
	SAM CAB, BATT 2	ST2/1	X4/19 Ignition Switch, BAT
	SAM CAB, BATT 3	ST3/1	X4/20 Ignition Switch, Accessory
	SAM CAB, BATT 4	ST4/1	X4/21 MG-Bus, Switch Bank #1, PWR
	SAM CAB, BATT 5	ST5/1	X4/22 LIN #3, PWR
	SAM CAB, BATT 6	ST6/1	X4/23 LIN #2, PWR
	SAM CAB, BATT 7	ST7/1	X4/24 LIN #1, Stalk/Steering, PWR
	SAM CAB, BATT 8	ST8/1	X4/25 Turn Signal Left, Indicator
	SAM CAB, BATT 9	ST9/1	X4/26 Turn Signal Right, Indicator

INTERNAL SAM PC BOARD

LOGIC CONTROLLED OUTPUTS

Pin Name	Non Load in Amp @ 25°C, 14.7V	Input / Output	Active High / Low (H/L)	LOAD TYPE	Battery Supply	Conn. No.	Conn. No.
SAM_CAB_BAT_1	90.00	I	AH	input power	BAT_1/BAT_1	S11	1
SAM_CAB_BAT_2	40	I	AH	input power	BAT_1/BAT_2	S12	2
SAM_CAB_GND_P	90	I	ND	ECU ground	BAT_1/BAT_1	S10	1
Trailer Turn Lamp Right	20	O	AH	bulb/led	BAT_1	X1	1
Trailer Marker Lamps	20	O	AH	bulb/led	BAT_2	X1	2
Trailer Tail Lamps	20	O	AH	bulb/led	BAT_3	X1	3
Marker Lamp, Corner Front Left	0.7	O	AH	bulb/led	BAT_1/BAT_2	X2	2
Marker Lamp, Corner Front Right	0.7	O	AH	bulb/led	BAT_1/BAT_2	X2	3
DRL, Right	2.5	O	AH	bulb/led	BAT_3	X2	4
Fuel Level Sensor, Supply	0.1	O	AH	sensor supply	BAT_1/BAT_2	X2	5
Exterior Lighting, GND_P #1	30	O	ND	sensor feedback	BAT_3	X2	7
Fog Lamps, Front Left	4.5	O	AH	bulb/led	BAT_3	X2	7
Fuel Level Sensor, Feedback	0.05	I	Analog	sensor feedback	BAT_1/BAT_2	X2	8
Turn Right Front Corner	2.5	O	AH	bulb/led	BAT_3	X2	20
Fuel Level Sensor, GND_CR	0.05	I	ND	sensor ground	BAT_3	X2	22
Mirror Heating, Relay Control	5.5	O	AH	bulb/led	BAT_3	X2	23
Fog Lamp, Front Right	4.5	O	AH	bulb/led	BAT_3	X2	24
PT Early Wake Up	0.25	O	AL	relay	BAT_2	X2	28
Alternator Charging (D+), Relay Control	0.25	O	AL	relay	-	X3	1
Bi-Stable Relay 1 (House), Feedback	0.01	I	Analog	voltage feedback	BAT_1/BAT_2	X3	2
Mirror Heating, Relay Control	1	O	AL	relay	-	X3	4
Ignition (IGN, 3), Relay Control	1	O	AL	relay	-	X3	5
Bi-Stable Relay 2 (House), Feedback	0.01	I	Analog	voltage feedback	BAT_1/BAT_2	X3	8
Bi-Stable Relay 3 (Basic), Feedback	0.01	I	Analog	voltage feedback	BAT_1/BAT_2	X3	9
Trailer Option Power #1, Relay Control	0.25	O	AL	relay	-	X3	17
Bi-Stable Relay 4 (Basic), Feedback	0.01	I	Analog	voltage feedback	BAT_1/BAT_2	X3	18
VPDM BAT_1, Feedback	0.01	I	Analog	voltage feedback	BAT_1/BAT_2	X3	20
Accessory (ACC, 3), Relay Control	1	O	AL	relay	-	X3	20
VPDM BAT_2, Feedback	0.01	I	Analog	voltage feedback	BAT_1/BAT_2	X3	22
Bi-Stable Relay, House Control, Open	1	O	AL	relay	-	X3	23
VPDM CAB (GND) BAT_1, Feedback	0.01	I	Analog	voltage feedback	BAT_1/BAT_2	X3	23
Bi-Stable Relay, House Control, Close	1	O	AL	relay	-	X3	26
Bi-Stable Relay, Basic Control, Open	1	O	AL	relay	-	X3	27
Bi-Stable Relay, Basic Control, Close	1	O	AL	relay	-	X3	28
Horn Buzzer, Control	12.2	O	AH	inductive buzzer	BAT_1	X4	1
Light Rotary Switch, BAT	0.2	O	AH	metal contact switch	BAT_1/BAT_2	X4	2
Interior Lighting, GND_P #1 (FWD Overhead)	10	O	ND	bulb/led	BAT_1	X4	3
Light Rotary Switch BC1	0.01	I	Analog	metal contact switch	BAT_1/BAT_2	X4	5
Panel Lamps, GND	10	O	ND	bulb/led	BAT_1	X4	6
Light Rotary Switch BC Redundant	0.01	O	ND	bulb/led	BAT_1	X4	7
Light Rotary Switch BC Redundant	0.01	I	Analog	metal contact switch	BAT_1/BAT_2	X4	8
Light Rotary Switch, GND	0.2	O	ND	switch ground	-	X4	9
Footwell Lamp, Zone 2, PWM (Ambience Light Zone 1)	1	O	AH	bulb/led	BAT_1	X4	10
Light Rotary Switch Version	0.01	I	Analog	resistor	BAT_1/BAT_2	X4	11
Light Rotary Switch Backlighting	0.01	O	ND	bulb/led	BAT_1/BAT_2	X4	12
Light Rotary Switch LED	0.01	I	Analog	resistor	BAT_1/BAT_2	X4	14
Light Rotary Switch BC2	0.01	I	Analog	metal contact switch	BAT_1/BAT_2	X4	15
High Beam, Right	5.5	O	AH	bulb/led	BAT_1	X4	16
Turn Left Front Corner	2.5	O	AH	bulb/led	BAT_3	X4	17
Light Rotary Switch Backlighting	0.01	O	ND	bulb/led	BAT_1/BAT_2	X4	18
Light Rotary Switch LED	0.01	I	Analog	resistor	BAT_1/BAT_2	X4	18
Light Rotary Switch BC2	0.01	I	Analog	metal contact switch	BAT_1/BAT_2	X4	18
Footwell Lamp, Zone 2, PWM (Ambience Light Zone 1)	1	O	AH	bulb/led	BAT_1	X4	20
Light Rotary Switch Version	0.01	I	Analog	resistor	BAT_1/BAT_2	X4	21
Light Rotary Switch Backlighting	0.01	O	ND	bulb/led	BAT_1/BAT_2	X4	22
Light Rotary Switch LED	0.01	I	Analog	resistor	BAT_1/BAT_2	X4	24
Ignition Switch - Accessory	0.01	I	Analog	metal contact switch	BAT_1/BAT_2	X4	25
Ignition Switch - Off	0.02	I	AH	metal contact switch	BAT_1/BAT_2	X5	2
Ignition Switch, BAT	0.1	O	AH	switch supply	BAT_1/BAT_2	X5	3
MG-Bus, Switch Bank #1, PWR	0.2	O	AH	ECU	BAT_1/BAT_2	X5	4
LIN #3, PWR	0.2	O	AH	ECU	BAT_1/BAT_2	X5	5
LIN #2, PWR	0.2	O	AH	ECU	BAT_1/BAT_2	X5	6
LIN #1, Stalk/Steering, PWR	0.2	O	AH	ECU	BAT_1	X5	7
Turn Lamp, Left	0.5	O	AH	bulb/led	BAT_3	X5	8
Turn Signal Left, Indicator	0.5	O	AH	inductive solenoid	BAT_3	X5	9
Ignition Switch - Accessory	0.02	I	AH	metal contact switch	BAT_1/BAT_2	X5	11
Ignition Switch - Off	0.02	I	AH	metal contact switch	BAT_1/BAT_2	X5	12
MG-Bus, Switch Bank #1, GND_DE	0.2	O	ND	ECU ground	-	X5	13
LIN #3, GND_DE	0.2	O	ND	ECU ground	-	X5	14
LIN #2, GND_DE	0.2	O	ND	ECU ground	-	X5	15
LIN #1, Stalk/Steering, GND_DE	0.2	O	ND	ECU ground	-	X5	16
LVD Sense, BAT	5	I	ND	sensor ground	-	X5	17
Turn Signal Right, Indicator	0.5	O	AH	inductive solenoid	BAT_3	X5	18
Transmission Temperature, Feedback	0.2	I	Analog	sensor feedback	BAT_1/BAT_2	X5	20
Transmission Temperature, GND_CR	0.2	O	ND	sensor ground	-	X5	21
MG-Bus, Switch Bank #1, GND_DE	0.2	O	ND	ECU ground	-	X5	22
LIN #3, GND_DE	0.2	O	ND	ECU ground	-	X5	23
LIN #2, GND_DE	0.2	O	ND	ECU ground	-	X5	24
LIN #1, Stalk/Steering, GND_DE	0.2	O	ND	ECU ground	-	X5	25
LVD Sense, GND_DE	1	O	ND	sensor ground	-	X5	26
Transmission Temperature, Feedback	0.2	I	Analog	sensor feedback	BAT_1/BAT_2	X5	27
Transmission Temperature, GND_CR	0.2	O	ND	sensor ground	-	X5	28
MG-Bus, Switch Bank #1, GND_DE	0.2	O	ND	ECU ground	-	X5	29
LIN #3, GND_DE	0.2	O	ND	ECU ground	-	X5	30
LIN #2, GND_DE	0.2	O	ND	ECU ground	-	X5	31
LIN #1, Stalk/Steering, GND_DE	0.2	O	ND	ECU ground	-	X5	32
LVD Sense, BAT	5	I	ND	sensor ground	-	X5	33
Turn Signal Right, Indicator	0.5	O	AH	inductive solenoid	BAT_3	X5	34
Transmission Temperature, Feedback	0.2	I	Analog	sensor feedback	BAT_1/BAT_2	X5	35
Transmission Temperature, GND_CR	0.2	O	ND	sensor ground	-	X5	36
MG-Bus, Switch Bank #1, GND_DE	0.2	O	ND	ECU ground	-	X5	37
LIN #3, GND_DE	0.2	O	ND	ECU ground	-	X5	38
LIN #2, GND_DE	0.2	O	ND	ECU ground	-	X5	39
LIN #1, Stalk/Steering, GND_DE	0.2	O	ND	ECU ground	-	X5	40
LVD Sense, GND_DE	1	O	ND	sensor ground	-	X5	41
Transmission Temperature, Feedback	0.2	I	Analog	sensor feedback	BAT_1/BAT_2	X5	42
Transmission Temperature, GND_CR	0.2	O	ND	sensor ground	-	X5	43
MG-Bus, Switch Bank #1, GND_DE	0.2	O	ND	ECU ground	-	X5	44
LIN #3, GND_DE	0.2	O	ND	ECU ground	-	X5	45
LIN #2, GND_DE	0.2	O	ND	ECU ground	-	X5	46
LIN #1, Stalk/Steering, GND_DE	0.2	O	ND	ECU ground	-	X5	47
LVD Sense, BAT	5	I	ND	sensor ground	-	X5	48
Turn Signal Right, Indicator	0.5	O	AH	inductive solenoid	BAT_3	X5	49
Transmission Temperature, Feedback	0.2	I	Analog	sensor feedback	BAT_1/BAT_2	X5	50
Transmission Temperature, GND_CR	0.2	O	ND	sensor ground	-	X5	51
MG-Bus, Switch Bank #1, GND_DE	0.2	O	ND	ECU ground	-	X5	52
LIN #3, GND_DE	0.2	O	ND	ECU ground	-	X5	53
LIN #2, GND_DE	0.2	O	ND	ECU ground	-	X5	54
LIN #1, Stalk/Steering, GND_DE	0.2	O	ND	ECU ground	-	X5	55
LVD Sense, GND_DE	1	O	ND	sensor ground	-	X5	56
Transmission Temperature, Feedback	0.2	I	Analog	sensor feedback	BAT_1/BAT_2	X5	57
Transmission Temperature, GND_CR	0.2	O	ND	sensor ground	-	X5	58
MG-Bus, Switch Bank #1, GND_DE	0.2	O	ND	ECU ground	-	X5	59
LIN #3, GND_DE	0.2	O	ND	ECU ground	-	X5	60
LIN #2, GND_DE	0.2	O	ND	ECU ground	-	X5	61
LIN #1, Stalk/Steering, GND_DE	0.2	O	ND	ECU ground	-	X5	62
LVD Sense, BAT	5	I	ND	sensor ground	-	X5	63
Turn Signal Right, Indicator	0.5	O	AH	inductive solenoid	BAT_3	X5	64
Transmission Temperature, Feedback	0.2	I	Analog	sensor feedback	BAT_1/BAT_2	X5	65
Transmission Temperature, GND_CR	0.2	O	ND	sensor ground	-	X5	66
MG-Bus, Switch Bank #1, GND_DE	0.2	O	ND	ECU ground	-	X5	67
LIN #3, GND_DE	0.2						