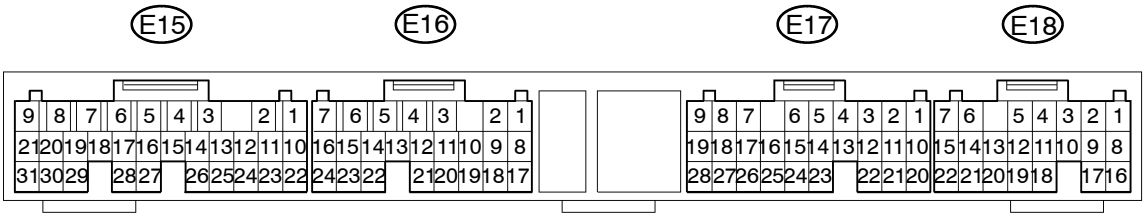
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TERMINALS OF ECU

Engine ECU Terminals for KLH



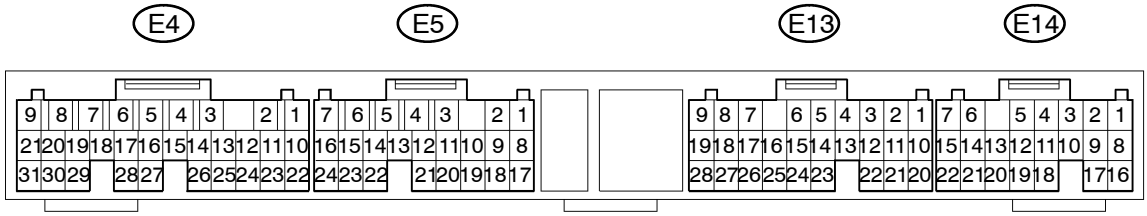
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Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E18–2) – E1 (E15–22)	Y–G – BR	Always	9 – 14
+B (E18–1) – E1 (E15–22)	B–Y – BR	IG switch ON	9 – 14
VC (E16–21) – E2 (E16–20)	L–B – G–R	IG switch ON	4.5 – 5.5
VCP1 (E17–8) – EP1 (E17–27)	L–O – B–R	IG switch ON	4.5 – 5.5
VCP2 (E17–13) – EP2 (E17–24)	B–W – B–R	IG switch ON	4.5 – 5.5
VPA1 (E17–19) – EP1 (E17–27)	BR–W – BR–W	Accelerator pedal fully closed	0.4 – 1.4
		Accelerator pedal fully opened	3.0 – 4.6
VPA2 (E17–28) – EP2 (E17–24)	GR–L – LG	Accelerator pedal fully closed	1.2 – 2.2
		Accelerator pedal fully opened	3.8 – 4.8
PCR (E16–23) – E2 (E16–20)	P – G–R	IG switch ON	1.0 – 4.0
THA (E16–13) – E2 (E16–20)	G – G–R	Atmospheric temp.	0.5 – 3.8
PIM (E16–16) – E2 (E16–20)	P – G–R	Apply vacuum 40 kPa (300 mmHg, 11.8 in.Hg)	1.1 – 1.7
		Apply pressure 69 kPa (0.7 kg/cm^2, 9.96 lb/in^2.)	1.5 – 2.1
THIA (E16–22) – E2 (E16–20)	R–L – G–R	Idling, air intake temp. 0°C (32°F) to 80°C (176°F)	0.5 – 3.4
THW (E16–14) – E2 (E16–20)	R–W – G–R	Idling, engine coolant temp. 60°C (140°F) to 120°C (248°F)	0.2 – 1.0
THF (E16–24) – E2 (E16–20)	R–G – G–R	IG switch ON (at cold engine)	0.5 – 3.8
VG (E16–19) – EVG (E16–11)	W – LG	Idling, A/C switch OFF	0.5 – 3.0
IGSW (E18–9) – E1 (E15–22)	B–O – BR	IG switch ON	9 – 14
STA (E18–15) – E1 (E15–22)	B–O – BR (LHD) B–R – BR (RHD)	Cranking	6.0 or more
NE+ (E15–17) – NE– (E15–28)	B – W	Idling	Pulse generation (See page DI–27)
G+ (E15–16) – G– (E15–27)	G – R	Idling	Pulse generation (See page DI–25)
SP1 (E17–22) – E1 (E15–22)	V–W – BR	IG switch ON, driving wheel slowly rotating	Pulse generation (See page DI–86)
EGR (E15 – 2) – E01 (E15–21)	B–L – BR	IG switch ON	9 – 14
		EGR ON (Maintain engine speed at 1,500 rpm after warming up)	Pulse generation (See page DI–119)
PA (E16–17) – E01 (E15–21)	B – W–B	Starter ON	9 – 14
#1 (E15–15) – E01 (E15–21)	R–G – W–B	Idling	Pulse generation (See page DI–108)
#2 (E15–14) – E01 (E15–21)	G–Y – W–B		
#3 (E15–13) – E01 (E15–21)	Y–B – W–B		
#4 (E15–12) – E01 (E15–21)	B–Y – W–B		

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
INJF (E15–18) – E01 (E15–21)	Y – W–B	Idling	Pulse generation (See page DI–108)
MREL (E18–7) – E01 (E15–21)	R – BR (LHD) B–O – BR (RHD)	IG switch ON	9 – 14
TACH (E17–10) – E1 (E15–22)	L – BR	Idling	Pulse generation*1
SREL (E18–16) – E01 (E15–21)	G–R – W–B	IG switch ON	9 – 14
W (E18–12) – E1 (E15–22)	W–L – BR	Check engine warming light lights up	0 – 3
		Except check engine warming light lights up	9 – 14
GIND (E18–3) – E1 (E15–22)	V – BR	Glow indicator light lights up	0 – 3.0
		Except glow indicator light lights up	9 – 14
LU+A (E15–20) – E1 (E15–22)	B – BR	IG switch ON	Pulse generation*2
LU–A (E15–30) – E1 (E15–22)	W – BR		
LU+B (E15–19) – E1 (E15–22)	R – BR		
LU–B (E15–29) – E1 (E15–22)	G – BR		
TC (E18–18) – E1 (E15–22)	P–B – BR	IG switch ON	9 – 14
SIL (E18–19) – E1 (E15–22)	W–G – BR	Connect hand–held tester to DLC3	Pulse generation*3
IMI (E18–14) – E1 (E15–22)*5	B–R – BR	Idling	Pulse generation*4
IMO (E18–21) – E1 (E15–22)*5	R–L – BR	A few sec. after engine staring	Pulse generation*4
STP (E17–14) – E1 (E15–22)	G–W – BR	Brake pedal depressed	7.5 –14
		Brake pedal released	0 –1.5
ST1– (E17–23) – E1 (E15–22)	W–R – BR	Brake pedal depressed	0 –1.5
		Brake pedal released	7.5 – 14
RINJ1 (E15–26) – E1 (E15–22)	GR – BR	Idling	0.5 – 4.5
RINJ2 (E15–25) – E1 (E15–22)	B–R – BR		
RINJ3 (E15–24) – E1 (E15–22)	B–L – BR		
RINJ4 (E15–23) – E1 (E15–22)	B–W – BR		
PCV+ (E15–9) – E1(E15–22)	P – BR	Idling	Pulse generation (See page DI–100)
PCV– (E15–8) – E1(E15–22)	Y–R – BR (LHD) Y – BR (RHD)		
HSW (E17–25) – E1 (E15–22)	LG – BR	Heater idle up switch ON	0 – 3.0
		Heater idle up switch OFF	9 – 14

Engine ECU Terminals for KDN



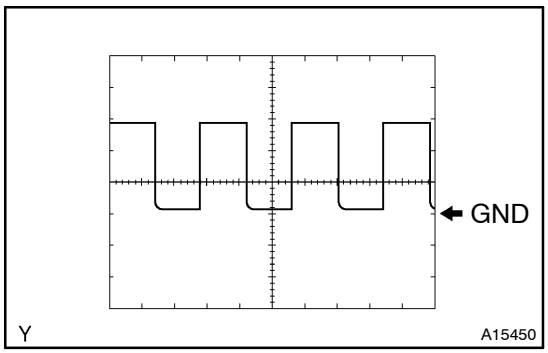
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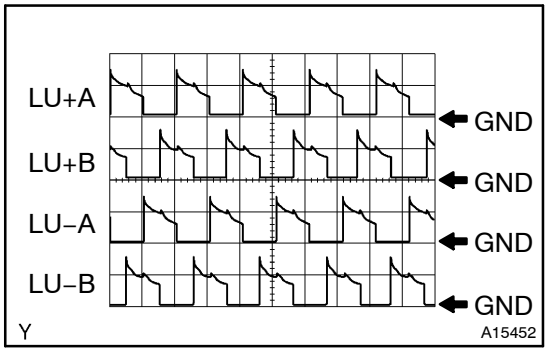
Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E14–2) – E1 (E4–22)	R–B – BR	Always	9 – 14
+B (E14–1) – E1 (E4–22)	R–L – BR	IG switch ON	9 – 14
VC (E5–21) – E2 (E5–20)	B – G–R	IG switch ON	4.5 – 5.5
VCP1 (E13–8) – EP1 (E13–27)	V – B–R	IG switch ON	4.5 – 5.5
VCP2 (E13–13) – EP2 (E13–24)	R – B–R	IG switch ON	4.5 – 5.5
VPA1 (E13–19) – EP1 (E13–27)	Y–R – BR–W	Accelerator pedal fully closed	0.4 – 1.4
		Accelerator pedal fully opened	3.0 – 4.6
VPA2 (E13–28) – EP2 (E13–24)	P – LG	Accelerator pedal fully closed	1.2 – 2.2
		Accelerator pedal fully opened	3.8 – 4.8
PCR (E5–23) – E2 (E5–20)	P–L – G–R	IG switch ON	1.0 – 4.0
THA (E5–13) – E2 (E5–20)	Y–G – G–R	Atmospheric temp.	0.5 – 3.8
PIM (E5–16) – E2 (E5–20)	B–Y – G–R	Apply vacuum 40 kPa (300 mmHg, 11.8 in.Hg)	1.1 – 1.7
		Apply pressure 69 kPa (0.7 kg/cm^2, 9.96 lb/in^2.)	1.5 – 2.1
THIA (E5–22) – E2 (E5–20)	R–B – G–R	Idling, air intake temp. 0°C (32°F) to 80°C (176°F)	0.5 – 3.4
THW (E5–14) – E2 (E5–20)	G – G–R	Idling, engine coolant temp. 60°C (140°F) to 120°C (248°F)	0.2 – 1.0
THF (E5–24) – E2 (E5–20)	W – G–R	IG switch ON (at cold engine)	0.5 – 3.8
VG (E5–19) – EVG (E5–11)	Y–R – LG	Idling, A/C switch OFF	0.5 – 3.0
IGSW (E14–9) – E1 (E4–22)	B–W – BR	IG switch ON	9 – 14
STA (E14–15) – E1 (E4–22)	P–B – BR	Cranking	6.0 or more
NE+ (E4–17) – NE– (E4–28)	R – G	Idling	Pulse generation (See page DI–27)
G+ (E4–16) – G– (E4–27)	B – W	Idling	Pulse generation (See page DI–25)
SP1 (E13–22) – E1 (E4–22)	G–O – BR	IG switch ON, driving wheel rotating slowly	Pulse generation (See page DI–86)
EGR (E4 – 2) – E01 (E4–21)	G–B – W–B	IG switch ON	9 – 14
		EGR ON (Maintain engine speed at 1,500 rpm after warming up)	Pulse generation (See page DI–119)
PA (E5–17) – E01 (E4–21)	B–R – W–B	Starter ON	9 – 14
#1 (E4–15) – E01 (E4–21)	L – W–B	Idling	Pulse generation (See page DI–108)
#2 (E4–14) – E01 (E4–21)	W–B – W–B		
#3 (E4–13) – E01 (E4–21)	B–R – W–B		
#4 (E4–12) – E01 (E4–21)	B–Y – W–B		
INJF (E4–18) – E01 (E4–21)	B–L – W–B	Idling	Pulse generation (See page DI–108)
MREL (E14–7) – E01 (E4–21)	L–O – W–B	IG switch ON	9 – 14

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
AC1 (E13–6) – E1 (E4–22)	Y – BR	A/C switch ON (at idling)	0 – 1.5
		A/C switch OFF	9 – 14
TACH (E13–10) – E1 (E4–22)	B – BR	Idling	Pulse generation*1
SREL (E14–16) – E01 (E4–21)	B–R – W–B	IG switch ON	9 – 14
W (E14–12) – E1 (E4–22)	P – BR	Check engine warning light lights up	0 – 3
		Except check engine warning light lights up	9 – 14
GIND (E14–3) – E1 (E4–22)	GR–L – BR	Glow indicator light lights up	0 – 3.0
		Except glow indicator light lights up	9 – 14
ACT (E13–5) – E1 (E4–22)	LG–R – BR	IG switch ON	9 – 14
		At A/C cut controlled (Driving below 30 km/h, accelerator pedal fully opened for 5 sec.)	0 – 3.0
LU+A (E4–20) – E1 (E4–22)	G–R – BR	IG switch ON	Pulse generation*2
LU–A (E4–30) – E1 (E4–22)	GR – BR		
LU+B (E4–19) – E1 (E4–22)	G–Y – BR		
LU–B (E4–29) – E1 (E4–22)	V – BR		
TC (E14–18) – E1 (E4–22)	V – BR	IG switch ON	9 – 14
SIL (E14–19) – E1 (E4–22)	R – BR	Connect hand–held tester to DLC3	Pulse generation*3
IMI (E14–14) – E1 (E4–22)*5	G – BR	Idling	Pulse generation*4
IMO (E14–21) – E1 (E4–22)*5	G–R – BR	A few sec. after engine staring	Pulse generation*4
STP (E13–14) – E1 (E4–22)	G–W – BR	Brake pedal depressed	7.5 –14
		Brake pedal released	0 –1.5
ST1– (E13–23) – E1 (E4–22)	L–Y – BR	Brake pedal depressed	0 –1.5
		Brake pedal released	7.5 – 14
RINJ1 (E4–26) – E1 (E4–22)	R–W – BR	Idling	0.5 – 4.5
RINJ2 (E4–25) – E1 (E4–22)	G–W – BR		
RINJ3 (E4–24) – E1 (E4–22)	P–L – BR		
RINJ4 (E4–23) – E1 (E4–22)	L–Y – BR		
PCV+ (E4–9) – E1(E4–22)	R–L – BR	Idling	Pulse generation (See page DI–100)
PCV– (E4–8) – E1(E4–22)	L–W – BR		
HSW (E13–25) – E1 (E4–22)	B–L – BR	Heater idle up switch ON	0 – 3.0
		Heater idle up switch OFF	9 – 14

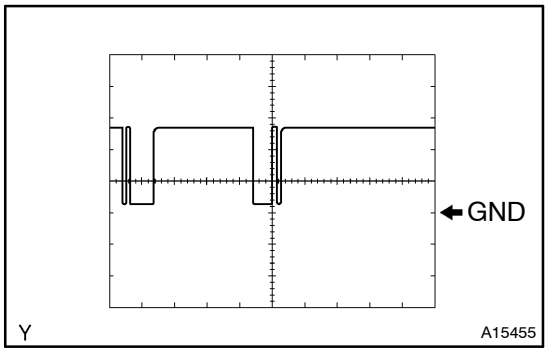
*5: w/ immobilizer



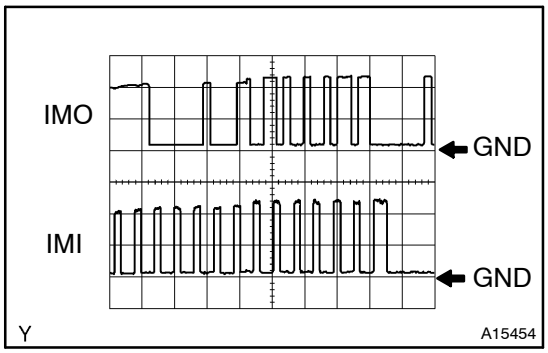
REFERENCE:
INSPECTION USING OSCILLOSCOPE
*1: TACH ↔ E1
Measure set: 5 V/DIV, 10 ms/DIV



*2: LU+A, LU–A, LU+B, LU–B ↔ E1
Measure set: 20 V/DIV, 10 ms/DIV



*3: SIL ↔ E1
Measure set: 5 V/DIV, 1 ms/DIV



*4: IMI, IMO ↔ E1
Measure set: 5 V/DIV, 100 ms/DIV