KUROFUNE 黒船

Quick Start Guide

This is only a quick start guide.
A full wiring and installation manual is included in **PCLink**.

LINK ENGINE MANAGEMENT

linkecu.com

Installer I/O Table

Wire Description	Installer Connection	Pin	Typical Application
+14V	Main Relay	49	
+14V	Main Relay	62	
+14V Battery	Full time fused (10A) Battery	53	
Trigger 1+	Crank Angle Sensor	19	Reluctor, Proximity, Optical or Hall
Trigger 1–		8	
Trigger 2–		6	
Trigger 2+		17	
Analogue Temp 1		52	NTC Thermistor sensors only
Analogue Temp 2		39	Temp 1 & 2 have selectable Pullup
Analogue Temp 3		J5	
Analogue Volt 1		24	0–5V Input from sensor or external controller
Analogue Volt 2		23	
Analogue Volt 3		21	
Analogue Volt 4		20	
Analogue Volt 5		9	
Analogue Volt 6		14	
Analogue Volt 7		15	
Analogue Volt 8		16	
Analogue Volt 9		J6	
+5V Out	TPS and MAP sensor power	40	+5V Power OUT
Ignition 1		31	Ignition Amplifier Drivers Use spare Ignition channels for switching type Axillary Outputs
Ignition 2		32	
Ignition 3		33	
Ignition 4		34	
Ignition 5		35	
Ignition 6		36	
Ignition 7		46	
Ignition 8		45	

Injection 1		1	Wire Injector 1 to cylinder 1, 2 to 2, 3 to 3, etc... Use spare Injection channels for switching type Auxiliary Outputs
Injection 2		2	
Injection 3		50	
Injection 4		51	
Injection 5		12	
Injection 6		13	
Injection 7		63	
Injection 8		64	
Auxiliary Output 1		41	High Frequency PWM or VVT Control Three Wire ISC Solenoid must be wired to Aux1 and Aux2 Flywheeled, Low side only
Auxiliary Output 2		42	
Auxiliary Output 3		54	
Auxiliary Output 4		55	
Auxiliary Output 5		30	PWM up to 300Hz or switched functions Flywheeled, High / Low side drives ISC Stepper (4 or 6 terminal)
Auxiliary Output 6		38	
Auxiliary Output 7		29	
Auxiliary Output 8		37	
Auxiliary Output 9		47	Switched output only
Auxiliary Output 10		48	
Digital Input 1		18	Frequency Input, Switch Input or VVT Position
Digital Input 2		7	
Digital Input 3		25	
Digital Input 4		26	
Digital Input 5		27	Frequency Input or Switch Input
Digital Input 6		28	
Digital Input 7		61	
Digital Input 8		60	
Digital Input 9		58	Switched Inputs Only
Digital Input 10		J4	

Digital Input Karman		59	Frequency Input Sensors
Analog Out 1		56	For emulation of signals such as airflow, pressure, O2 or temperature.
Analog Out 2		57	
Analog Out 3		43	
Analog Out 4		44	
Ground		3	Sensor Ground
Ground		4	
Ground		5	
Ground		10	
Ground		11	ECU Ground
Ground		22	Ignition Ground
Ground		J1	Ground
CAN1L		J2	
CAN1H		J3	
Knock 1		J7	Knock Sensors Only
Knock 2		J8	

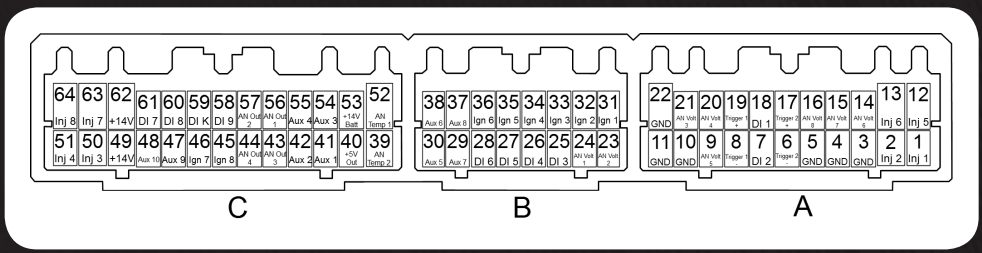
Wiring Information

It is recommended that your Link G4+ Kurofune ECU is installed by a trained professional. Incorrect installation can result in damage to the ECU or the vehicle — extreme care must be taken.

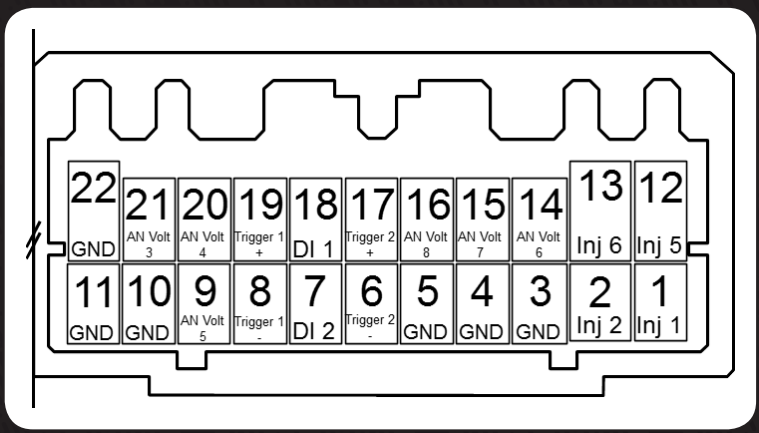
The following pin diagram shows the inputs and outputs available with the G4+ Kurofune ECU. Application wiring examples are provided in the full Wiring and Installation Manual available in PCLink G4+.

It is recommended that the installer fills out the 'Installer I/O Table' as a reference to keep with the ECU. This table is provided on the previous pages.

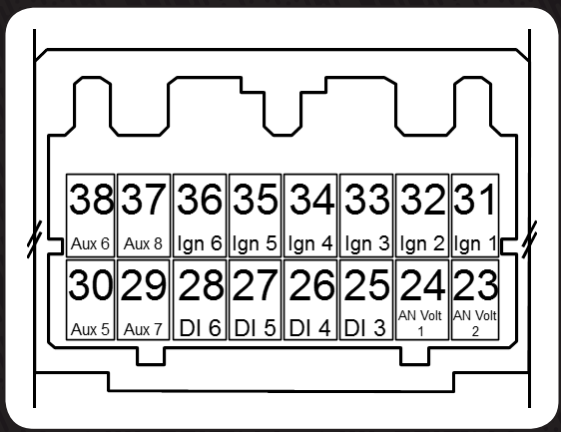
A, B & C CONNECTOR KEYS



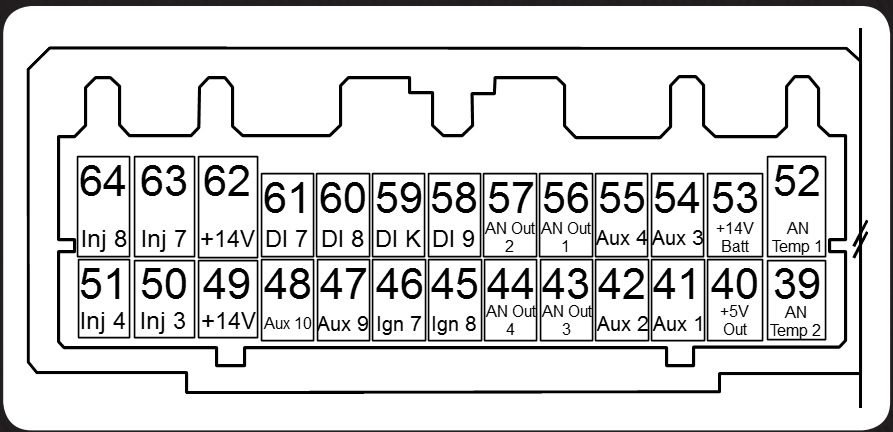
A LOOM



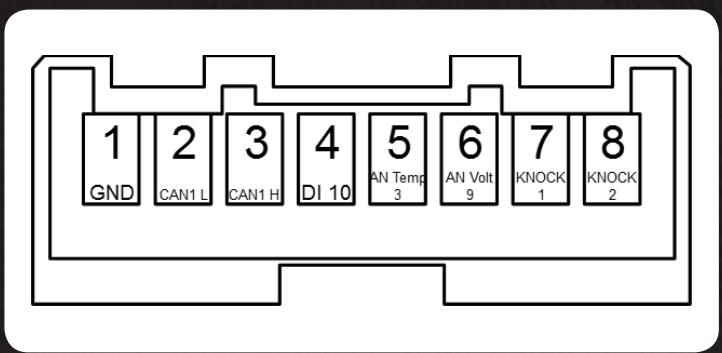
B LOOM



C LOOM



XS CONNECTOR



IMPORTANT INFORMATION

+14V BATTERY

If using Hold Power, wire +14V Battery pin directly to the positive battery terminal via a 5A fuse. If not using Hold Power, +14V Battery pin must be wired to ECU +14V pin or the positive battery terminal via a 5A fuse.

DIFFERENTIAL TRIGGER INPUT

If using Kurofune in piggyback configuration, ensure that the trigger + and – pins are wired in parallel with the factory trigger sensor, note that polarity must be observed. Otherwise the – side of the sensor must be wired to a sensor ground pin.

ANALOG OUTPUTS

In a piggyback configuration these may be used to emulate factory analog signals such as airflow, pressure O2 or temperature.

G4+ ECUS ARE SHIPPED LOCKED

G4+ ECUs are shipped as locked and must be enabled before they are used. The ECU can be installed and configured using PCLink, but will not read engine RPM or run the engine until unlocked. Contact your ECU supplier to obtain an unlock code.

SUPPORT OPTIONS

- PCLink G4+ help — press F1 while running PCLink G4+. Includes help on wiring, PCLink G4+ and ECU functions
- Contact your nearest Link dealer. A Link dealer list is available on linkecu.com
- Link website: linkecu.com
- Technical Support email: tech@linkecu.com
- Online Discussion Forum: linkecu.com/forums

Most questions received by the technical support team are answered in the PCLink G4+ Help section. Please consult the manuals to make sure that your question has not already been answered.

PCLINK G4+

All Link G4+ ECUs are tuned and configured by our PCLink G4+ software package. Connection to the ECU is established through on–board USB.

The latest version of PCLink G4+ can be downloaded from linkecu.com. Included with PCLink G4+ are the USB drivers for connecting to the ECU.

IMPORTANT

Before connecting the ECU to your PC, the correct USB drivers must be installed.
Failure to install the drivers on your PC first may result in Windows assigning incorrect drivers. These drivers will not work with the ECU and are difficult to uninstall.

After installation, consult PCLink G4+ Help (press F1) for instructions on connecting to the ECU.

Once you have the ECU connected to PCLink, check the ECU firmware and upgrade to the latest version if it is not already.

GENERAL ECU MOUNTING GUIDELINES

The following requirements should be taken into account during the installation of the ECU:

continued on next page

- The ECU should be fitted inside the vehicle cabin in a location that avoids exposure to excessive temperatures and the risk of water ingress. The location of the ECU should also be physically separated from the ignition components or any other components that may cause interference.
- Allow enough room at both ends of the ECU for the main wiring harness and tuning cables to be connected.
- The ECU should be installed on a flat surface. Alternative brackets should not be used and under no circumstances should holes be drilled in the ECU case. Any modifications to the case will render the warranty invalid and may cause internal damage.
- It is recommended that the ECU is rubber mounted in order to isolate the ECU from vibration.
- For motorsport applications, the ECU should be located in a position that minimises the risk of physical damage in the event of the vehicle being involved in a crash. ECUs used for speedway applications should be mounted securely within the cockpit area, protected from the elements, isolated from vibration and utilise an additional retention strap for protection from high impacts.

Please refer to the Wiring Information section in PCLink G4+ help for additional information.

LIFETIME WARRANTY

LINK ENGINE MANAGEMENT LTD – LIMITED LIFETIME WARRANTY

All Engine Control Units (ECUs) manufactured or distributed by LINK Engine Management Ltd are subject to the following LIMITED LIFETIME WARRANTIES, and no others.

LINK Engine Management Ltd warrants only to the original purchaser of the ECU, for the lifetime of the ECU, (subject to the limitations set out below), that the ECU shall be free from defects of materials and workmanship in the manufacturing process. This warranty ceases to apply and does not apply to ECUs that have not been manufactured or distributed by LINK Engine Management Ltd for a period of greater than one year.

An ECU claimed to be defective must be returned to the place of purchase. LINK Engine Management Ltd, at its sole option, may replace the defective ECU with a comparable new ECU or repair the defective ECU.

This limited lifetime warranty is not transferrable and does not apply to any ECU not properly installed or properly used by the purchaser or end user, or to any ECU damaged or impaired by external forces. The above warranties are the full extent of the warranties available on the ECU. LINK Engine Management Ltd has no liability to the original purchaser or any other person for any loss, injury or damage to persons or property resulting from the use of the ECU or any failure of or defect in the ECU whether by general, special, direct, indirect, incidental, consequential, exemplary, punitive, or any other damages of any kind or nature whatsoever. LINK Engine Management Ltd specifically disclaims and disavows all other warranties, express or implied, including, without limitation, all warranties of fitness for a particular purpose, warranties of description, warranties of merchantability, trade usage or warranties of trade usage.

For off–road use only. Not intended for highway vehicles. This ECU contains a user–configurable software programme, which is updated by LINK Engine Management Ltd from time to time. The user must ensure the current correct version of this programme is downloaded from the website of LINK Engine Management Ltd and installed in the ECU prior to use.

This limited lifetime warranty does not apply where the ECU has been installed with the incorrect version of the software programme. The user is solely responsible for the setup and testing of all user–configurable features.

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