NKC 42

User's Manual

www.kusauto.com

Table of Contents

Revision History

Revision	Description
1.0	Original document

1. General

1.1 Introduction

The NKC42 is a universal adapter that allows one/four to connect the existing analog fuel/fresh water/waste water/live well/oil/black water senders or engine performance sensors to the NMEA2000 network.

Please read carefully and follow these instruction for installation, configure, and usage of the adapter in order to ensure optimal performance.

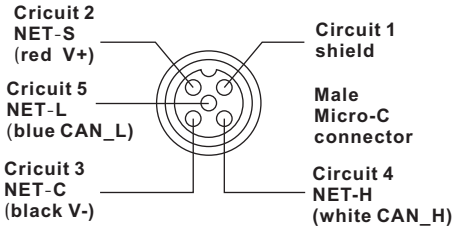
1.2 Features

The NKC42 has the following features.

- Programmable sensor types including fuel, fresh water, waste water, live well, oil, black water, engine oil pressure, engine coolant temp,engine oil temp.
- Programmable sensor number up to 16 per sensor type.
- Adapts American standard(240~33 ohm) or European standard(0~190/10~180ohm)resistive senders to nmea2000 network(only useful for fluid level sensor). Calibrated for any resistance range from 0 to 999 or 999 to 0 ohms.
- NMEA2000 Interface.

1.3 Component function diagram

Wire color	
Red	CHANNEL 1
Yellow	CHANNEL 2
Blue	CHANNEL 3
Green	CHANNEL 4
Black	GND

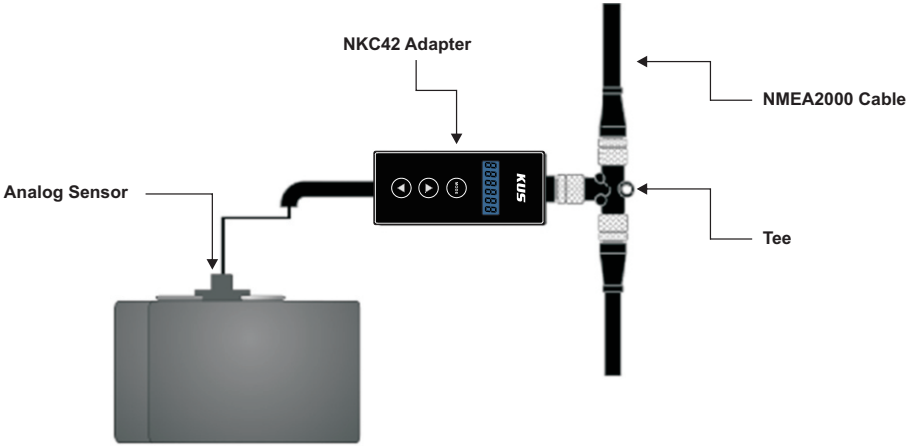


Male Connector

UP: In the query interface, used for switching up query page; In the setting interface, used for increasing Numbers.
DOWN: In the query interface, used for switching down query page; In the setting interface, used for reducing Numbers.
MODE: Switch Settings and query interface.

2. Installation

Connecting the NKC42



Mounting Location

3. Parameter

3.1 Parameter query

Use UP/DOWN to switch to query interface.
For four-channel adapter, short press MODE in product type interface to switch to the channel what you need to query.

Power on
(Network)

Product type

Instance interface

Signal type

3.2 Parameter setting

3.2.1 For network

In network query interface, long press MODE key until LCD flashes and release.

Use UP/DOWN TO select the network(NMEA2000/SAE-J1939); Long press MODE key again until LCD stops flashing.

Network type setting done.

NMEA 2000

SAE-J1939

3.2.2 For product type

In product type query interface, long press MODE key until LCD flashes and release.

Use UP/DOWN to switch the product type; Long press MODE key again until LCD stops flashing.Product Setting completed.

First or 1channel

Second channel

Third channel

Fourth channel

Notes: 1. For four channel adapter, short press MODE to switch the channel what need to set.

2. When network is SAE-J1939, All the four channels cannot be set to the sensor with same model.

The values specific to product

NMEA2000		J1939	
Value	**Sensor Type**	**Value**	**Sensor Type**
00/10/20/30	Fuel level	00/10/20/30	Fuel level
01/11/21/31	Fresh water level	01/11/21/31	Washer Fluid level
02/12/22/32	Waste water level	02/12/22/32	engine coolant level
03/13/23/33	Live Well level	03/13/23/33	engine oil level
04/14/24/34	Oil level	04/14/24/34	Coolant temp(40~120℃,300~23Ω)
05/15/25/35	Black Water level	05/15/25/35	Oil temp(50~150℃,300~23Ω)
06/16/26/36	Oil press(0~5Bar,10~185Ω)	06/16/26/36	Oil press(0~5Bar,10~185Ω)
07/17/27/37	Oil press(0~10bar, 10~185Ω)	07/17/27/37	Oil press(0~10bar, 10~185Ω)
08/18/28/38	Coolant temp(40~120℃,300~23Ω)		
09/19/29/39	Oil temp(50~150℃,300~23Ω)		
0A/1A/2A/3A	Rudder		

3.2.3 Instance (Number) setting

In Instance query interface, long press MODE key until LCD flashes and release; Use UP/DOWN to set Instance(number); Long press MODE key again until LCD stops flashing.

Setting completed

Instance

3.2.4 Signal type setting

3.2.4.1 Commonly used resistance signal setting

In signal type query interface, long press MODE key until LCD flashes and release. Use UP/DOWN to set signal type, Long press MODE key again until LCD stops flashing.

Setting completed

Signal type

Value	Resistance signal
00	240~33Ω
01	0~190Ω
02	10~180Ω
SEF	Self-defined

Values specific to signal

3.2.4.2 Self-defined resistance signal setting

In resistance signal setting interface, adjust to resistance self -define interface, long press MODE until showing empty level resistance setting interface and release, use UP/DOWN to set the resistance at empty level. And long press MODE to switch to ¼ level resistance setting interface, and set the resistance at ¼.

Use the same method to set the resistance at ½ , ¾ and full level.

After setting the resistance at full level, long press Mode until LCD stop flashing. And setting completed.

Self defined interface

0/4(Empty level) setting interface

¼ level setting interface

2/4 level setting interface

3/4 level setting interface

4/4 level setting interface

4. Technical Specifications

4.1 Electrical

Operating Voltage	9~16V
Power Consumption	<50mA
Load Equivalence Number(LEN)	1

4.2 Environmental

Operating temperature	-30~75℃
Storage temperature	-40~80℃
Degree of protection	IP67

4.3 Mechanical

Size	93*42*25/ 90*40*25 mm (Excluding NMEA2000Connector&Cable)
Weight	115 g

4.4 Certifications

NMEA2000	Level B+

4.5 MEA2000 Parameter Group Number(PGN)

Description	PGN	PGN name
Periodic data PGNs	127505	Fluid level
	127489	Engine parameter
	127245	Rudder
Response to requested PGNs	126996	Product information
Protocol PGNs	059392	ISO acknowledge
	059904	ISO request
	060928	ISO address claim

4.6 SAE-J1939 Parameter Group Number(PGN)

Description	PGN	PGN name
Periodic data PGNs	65276	Fuel/Washer fluid level
	65263	Engine coolant/Oil level/ Oil pressure
	65262	Engine coolant /Oil temperature