KUS

NKC 42

User's Manual

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.
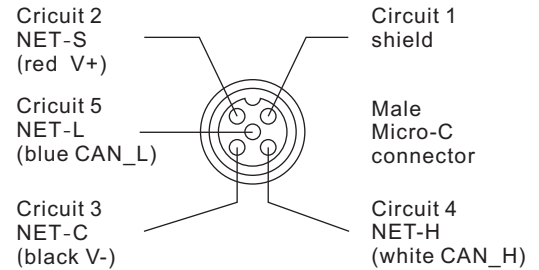
1.2 Features

The NKC42 has the following features:

- Programmable sensor types include fuel, fresh water, waste water, live well, oil, black water, engine oil pressure, engine coolant temp., and 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

Cricuit 2
NET-S
(red V+)

Cricuit 5
NET-L
(blue CAN_L)

Cricuit 3
NET-C
(black V-)

Circuit 1
shield

Male
Micro-C
connector

Circuit 4
NET-H
(white CAN_H)

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

NKC42 Adapter

NMEA2000 Cable

Analog Sensor

Tee
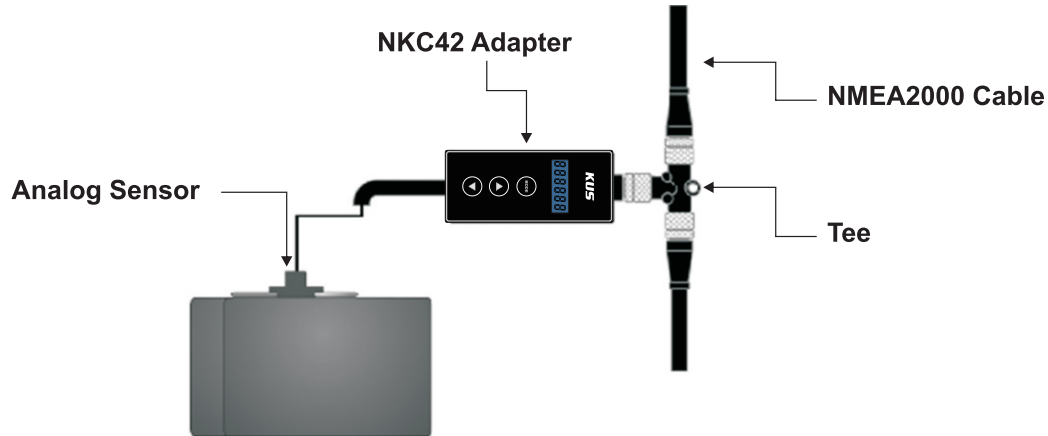
Mounting Location

3. Parameter

3.1 Parameter Query

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

| Power On | Product Type | Instance | Signal Type |
| (Network) | | Interface | |

3.2 Parameter Setting

3.2.1 For Network

In network query interface, press and hold the
MODE key until LCD flashes and release.
Use UP/DOWN TO select the
network(NMEA2000/SAE-J1939); press and hold
the MODE key again until LCD stops flashing.
Network type completed.

NMEA 2000   SAE-J1939

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3.2.2 For Product Type

In product type query interface, press and hold the MODE key until LCD flashes and release. Use UP/DOWN to switch the product type; press and hold the MODE key again until LCD stops flashing. Product setting completed.

First Channel · Second Channel · Third Channel · Fourth Channel

Notes:

1. For the four channel adapter, quickly press MODE to switch the channel
2. In SAE-J1939, all the four channels cannot be set to the sensor with the 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℃/104~248℉,300~23Ω)
05/15/25/35	Black Water Level	05/15/25/35	Oil Temp.(50~150℃/122~302℉,300~23Ω)
06/16/26/36	Oil Press.(0~5Bar/0~72.5PSI,10~185Ω)	06/16/26/36	Oil Press.(0~5Bar/0~72.5PSI,10~185Ω)
07/17/27/37	Oil Press.(0~10Bar/0~145PSI, 10~185Ω)	07/17/27/37	Oil Press.(0~10Bar/0~145PSI, 10~185Ω)
08/18/28/38	Coolant Temp.(40~120℃/104~248℉,300~23Ω)		
09/19/29/39	Oil Temp.(50~150℃/122~302℉,300~23Ω)		
0A/1A/2A/3A	Rudder		

3.2.3 Instance (Number) Setting

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

Signal Type

Values Specific to Signal

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

3.2.4.2 Self-defined Resistance Signal Setting

In the resistance signal setting interface, to adjust the self-defined interface press and hold the MODE key until empty level resistance interface setting is viewable and release, use UP/DOWN to set the resistance at empty level. Press and hold the MODE key to switch the resistance if needed to 0/4, 1/4, 2/4, 3/4 or 4/4. After setting the resistance, press and hold the MODE key until LCD stops flashing.
Setting completed.

Self Defined Interface

0/4(Empty Level) Setting Interface

1/4 Level Setting Interface

2/4 Level Setting Interface

3/4 Level Setting Interface

4/4 Level Setting Interface

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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°C(-22~167°F)
Storage Temperature	-40~80°C(-40~176°F)
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 NMEA2000 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 Temp.

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