KOMTRAX Terminal

Instruction Manual

Model Name **TC630**

Model No. **KDTC630**

Thank you for your purchasing KOMTRAX terminal (KDTC630).

■ Read this instruction manual and use your KOMTRAX terminal correctly ■

・Operators and service personnel for machines using KOMTRAX should make sure that they read and fully understand this document.
・Keep this document together with the Operation and Maintenance manual for the machine equipped with KOMTRAX, and read it repeatedly.

※KOMTRAX is a machine management system that uses wireless communications.

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Features/Before using

■ What is KDTC630

KDTC630 is a communication terminal which is mounted on a vehicle to form a system together with server application software on the base station side and used to control movement of the vehicle and monitor it from a remote place.

■ Features

● KDTC630 uses GSM, GPRS and UMTS, so it can communicate in a lot of countries that they are used. (A communication contract is required in each place where KDTC630 will communicate, however.)
● KDTC630 has GPS function to be able to show the present position of the vehicle on which it is mounted.
● When KDTC630 is connected to the local network in the vehicle, it can collect the information of errors in the vehicle, sensors, and etc.

■ Before using

● Since KDTC630 is a wireless device using radio waves, so it is necessary to obtain authorization and conform to the laws of the country or territory where the machine equipped with KDTC630 is being used. It can be used only countries where use of it is permitted. For the countries where use of KDTC630 is permitted, ask your Komatsu distributor.
● Always contact your Komatsu distributor when exporting or reselling a vehicle equipped with KDTC630. Note that the radio communication function of KDTC630 may be turned off forcibly, when the vehicle is out of the countries or areas where use of KDTC630 is permitted.
● Before using KDTC630, you are required to take some procedures such as application for start of use. For details, ask your Komatsu distributor.
● KOMTRAX system uses wireless communications, so it cannot be used inside tunnels, underground inside buildings, or in mountain areas where radio waves cannot be received. Even when the machine is outside, it cannot be used in areas where the radio signal is weak or in areas outside the wireless communication.
● There is absolutely no need to inspect or operate KDTC630, but if any abnormality is found, please consult your Komatsu distributor.

Safety precautions

The items to be observed without fail are explained as shown below to prevent an injury to the user and other persons and damage to property.
If you do not obey these precautions, neither Komatsu nor your Komatsu distributor can take any responsibility for any problem that is caused or for any loss that results.

■Injuries and damage which can be caused by wrong use of KDTC630 are explained as shown below.

⚠	WARNING	In the column with this mark, an item which "can cause a death or a serious injury to a person" is explained.
⚠	CAUTION	In the column with this mark, an item which "can cause an injury to a person or only damage to property" is explained.

■ The types of the items to be observed are indicated and explained by the following icons.

⚠	This icon indicates an item "to be noted".
🚫	This icon indicates an item "to be prohibited".
❗	This icon indicates an item "to be executed without fail".

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⚠ WARNING

Do not install this set to a place where it will be an obstacle to view or operation.

🚫 Installation of this set to a place where it will be an obstacle to view or operation may cause an accident.

Prohibit

Never disassemble, repair, modify, or move the communication terminal, antenna, or cables.

🚫 Neglecting this may cause a trouble, a fire, or an accident. Your Komatsu distributor will carry out removal and installation.

Prohibit

Use a battery having rated voltage of DC12V or DC24V to supply DC power to this set.

❗ This set is designed to be driven with DC power. Use a power supply in the rated range. Neglecting this may cause a trouble.

Install the body of this set securely.

❗ If the body is not installed securely, it may fall to cause an injury to a person or an accident.

Do not install this set to a place where temperature rises or lowers extremely or a place where it will receive strong vibration or impacts.

🚫 Neglecting this may cause a skin burn, a trouble, or a fire.

Prohibit

Installe the communication terminal at leaset 22cm (8.7 inch) from a operater.

🚫 For anyone wearing a pacemaker, the radio waves may have an adverse effect on the operation of the pacemaker.

Prohibit

Connect this set to external devices correctly and securely according to this manual.

❗ Neglecting this may cause a trouble or a fire.

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⚠ CAUTION

Do not install this set to an outdoor place where it may be exposed to rainwater or seawater.

🚫
Prohibit

This set is not water-resistant.

This set can be used only in countries where use of it is permitted.

🚫
Prohibit

Since this set has a radio device, it can be used only in countries where use of it is permitted.

Do not pinch, tense, or damage the cables.

🚫
Prohibit

Neglecting this can cause a short circuit or a disconnection, which may cause a trouble or a fire.

Use a specified communication antenna.

❗

Use a specified antenna.

Take the action given in "LONG-TERM STORAGE" in the Operation and Maintenance Manual for the machine, when putting the machine into long-term storage.

❗

Even when the key is at the OFF position, a small amount of electric power is consumed by the KOMTRAX terminal.

Contact your Komatsu distributor before installing a top guard or other attachment that covers the antenna.

❗

Attachments may cause a trouble of wireless communication.

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FCC Statements

NOTICE:
This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:

      (1) this device may not cause harmful interference, and
      (2) this device must accept any interference received, including interference that may cause undesired operation.

CAN ICES-3 (B)/NMB-3(B)

NOTICE:
Changes or modifications made to this equipment not expressly approved by Komatsu Ltd may void the FCC authorization to operate this equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Radiofrequency radiation exposure Information:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
This equipment should be installed and operated with minimum distance of 20 cm between the radiator and your body.
This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet équipement est conforme aux limites d'Insdustrie Canada concernant l'exposition aux rayonnements électromagnétiques dans un environnement non contrôlé.
L'équipement doit être installé et utilisé à une distance minimum de 20 cm entre le transmetteur et votre corps.
Ce transmetteur ne doit pas être placé au même endroit ou utilisé simultanément avec un autre transmetteur ou antenne.

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Request for correct use

■ Lithium battery in body of KDTC630

The set operation, time, and other information are backed up by the lithium battery in the body of KDTC630. Accordingly, if the battery goes dead, the saved data are lost. The life of the lithium battery is about 5 years (when used at the normal temperature), although it depends on the using condition. To lengthen the life of the battery, keep the power cable connected to the battery. The lithium battery power is not consumed while the power cable is connected. If the battery needs to be replaced, return it to the manufacture, who will replace it.
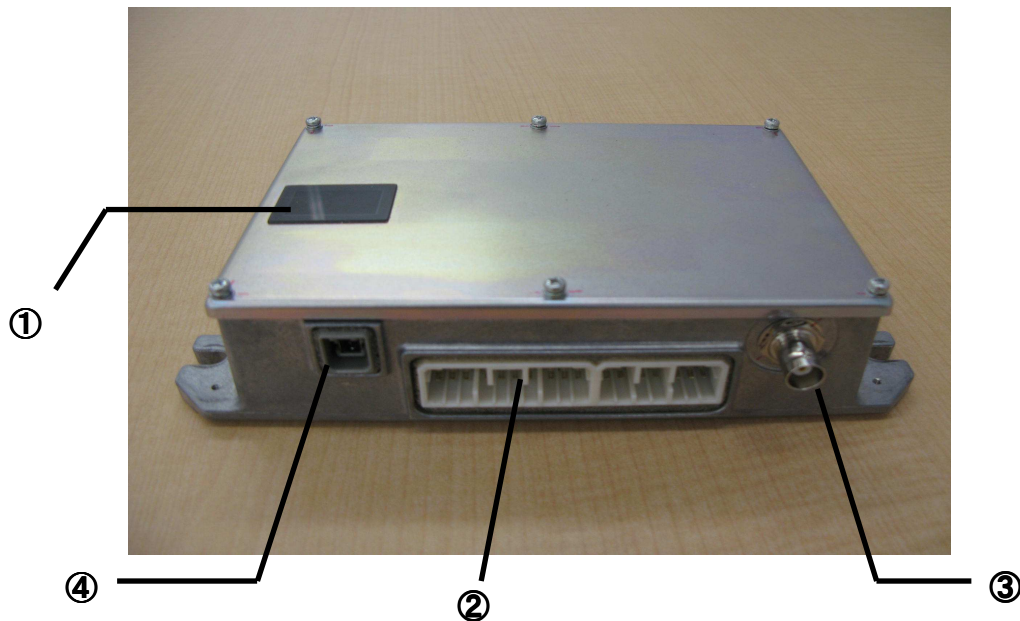
■ Storage

Do not store KDTC630 in a place where it will be exposed to direct sunlight, a place where the temperature is extremely low or the humidity is high, a place where there is much corrosive gas. (If it is stored in such a place, its performance and appearance may be lowered.)

Name and function of each part

KDTC630

① **LED window**
　　Indicates the operating condition with the internal LED.

② **Interface connector (AMP)**
　　Connects the power cable and signal lines on the vehicle side. For details, see the specifications of interface connector.

③ **Communication cable connector (BNC type)**
　　Connects the communication antenna cable.

④ **GPS cable connector (GT5)**
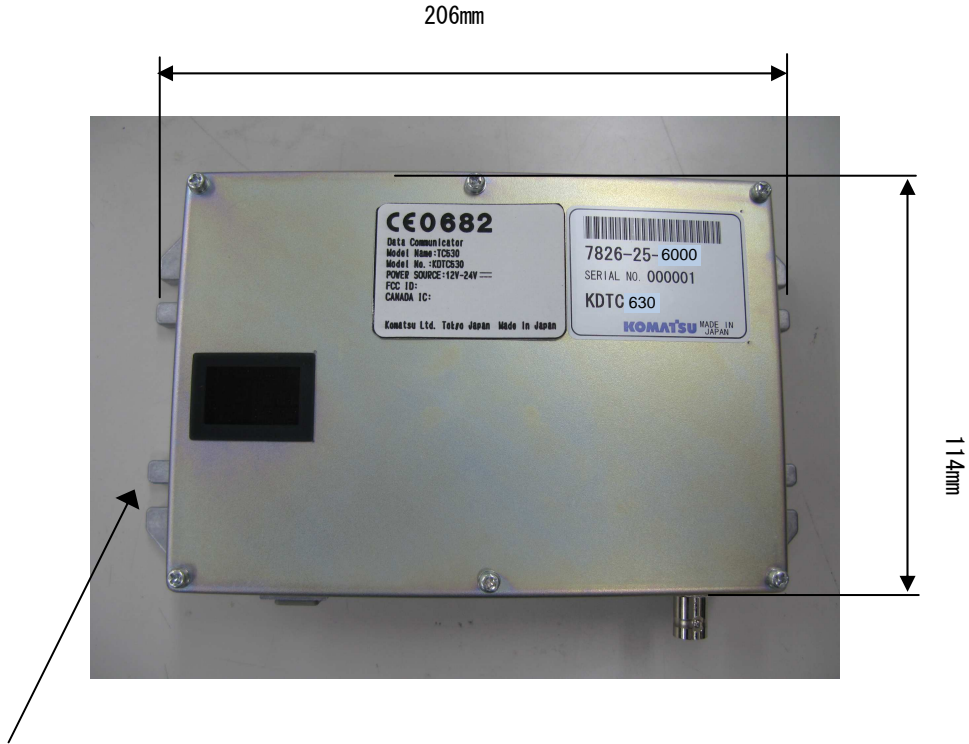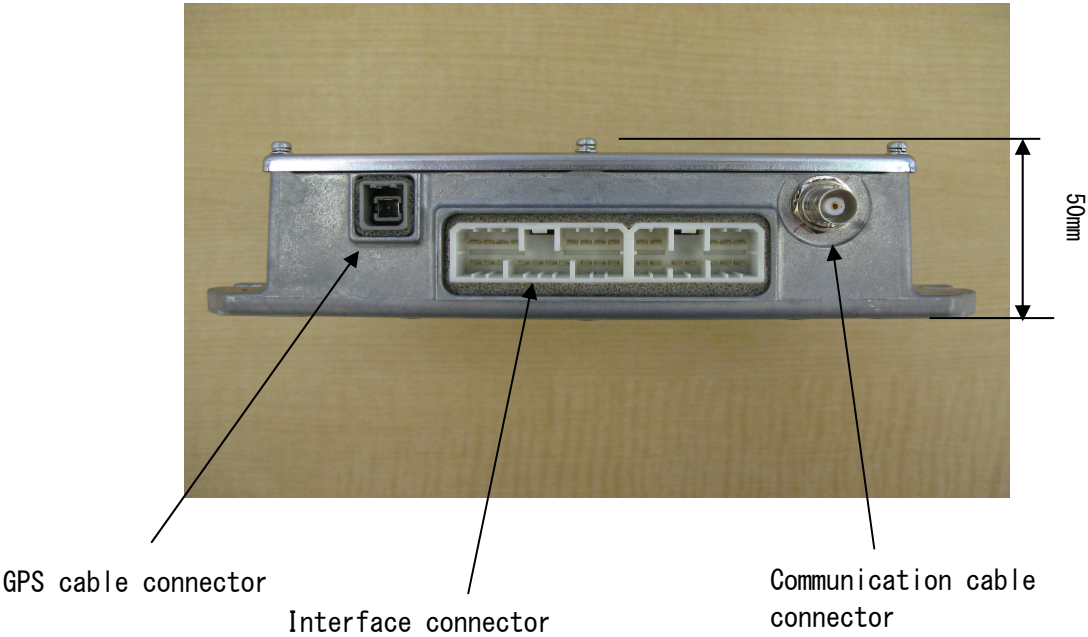　　Connects the GPS antenna cable.

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How to install

■ Fixing KDTC630

206mm

114mm

Fix 4 mounting parts with M6 bolts.

50mm

GPS cable connector

Interface connector

Communication cable
connector

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Specifications of interface connector

Connector on KDTC530 side: 173866-1 (Manufactured by AMP)

Pin Number	Name	I/O	Remark
A-1	PWR_OUT_5V	Out	DC5V output
A-2	GND	—	GND
A-3	TxD	Out	RS232C TXD
A-4	RxD	Input	RS232C RXD
A-5	DIS_L_3	Input	ON/OFF INPUT3
A-6	DIS_L_6	Input	ON/OFF INPUT6
A-7	DIS_L_2	Input	ON/OFF INPUT2
A-8	DIS_L_1	Input	ON/OFF INPUT1
A-9	DOS_L_2	Out	ON/OFF Out2
A-10	COMM_CAN_H	In/Out	CAN(+)
A-11	COMM_CAN_L	In/Out	CAN(−)
A-12	DIS_H_5	Input	ON/OFF INPUT5
A-13	DIS_H_4	Input	ON/OFF INPUT4
A-14	PWR_CTR_EXT	In/Out	Wake UP
A-15	*SYS_BUSY	Out	ON/OFF Out1
A-16	AIS_V_3	Input	Analog input3(0-5V)
A-17	AIS_V_4	Input	Analog input4(0-5V)
A-18	AIS_V_5	Input	Analog input5(0-30V)
B-1	GND	—	GND
B-2	GND	—	GND
B-3	PWR_CTR_KEY	Input	ACC(Power On Switch)
B-4	AIS_ALTR	Input	Analog input0(0〜30V)
B-5	AIS_FUEL_0	Input	Analog input1(0〜5V)
B-6	PWR_IN_BATT	Input	Power(10〜30V)
B-7	PWR_IN_BATT	Input	Power(10〜30V)
B-8	DOS_L_STCUT	Out	ON/OFF Out0
B-9	DIS_L_CHK0	Input	ON/OFF INPUT
B-10	DIS_L_CHK1	Input	ON/OFF INPUT
B-11	DIS_H_0	Input	ON/OFF INPUT0
B-12	AIS_FUEL_1	Input	Analog input2(0〜30V)

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Specifications

KDTC630

Power source	DC12V or DC24V (Operating range : DC10V〜30V)	
Current consumption	24V	12V
Receiving condition	80mA(typical)	140mA(typical)
Transmission condition	2A (MAX)	
Interface		
Serial communication	RS-232C : 1ch(3 lines) 38400bps, Data:8bit, Stop:1bit, Parity: none	
CAN communication	1ch	
Digital input	7ch for general use、2ch for inspection	
Digital output	3ch for general use	
Analog input	Voltage input 6ch(0〜30V、0〜5V)	
Others	Output for external power source control: 1ch	
Communication frequency (MHz)	Transmitter: 824-849 (GSM850) 880-915 (EGSM900) 1710-1785 (GSM1800) 1850-1910 (GSM1900) 1920-1980 (UMTS2100, W-CDMA FDD BandⅠ) 880-915 (UMTS900, W-CDMA FDD BandⅧ) 824-849 (UMTS850, W-CDMA FDD BandⅤ) 930-840 (UMTS900, W-CDMA FDD BandⅥ) Receiver: 869-894 (GSM850) 925-960 (EGSM900) 1805-1880 (GSM1800) 1930-1990 (GSM1900) 2110-2170 (UMTS2100, W-CDMA FDD BandⅠ) 925-960 (UMTS900, W-CDMA FDD BandⅧ) 869-894 (UMTS850, W-CDMA FDD BandⅤ) 875-885 (UMTS900, W-CDMA FDD BandⅥ)	
Connector		
Interface	173866-1 manufactured by AMP	
Connection of Communication cable	BNC	
Connection of GPS cable	GT5 or compatible	
Positioning method	GPS	
Operating temperature	-30℃〜+70℃	
Storing temperature	-40℃〜+80℃	
humidity	Under 98% (65℃)	
Water resistance	Drip-proof (When connectors are directed down. Connector is not included.)	
Vibration resistance	8.9G (5〜200 Hz)	
Impact-resistant	50G	
Outside dimensions (mm)	206×114×50	
Weight	0.8kg	
Accessories sold separately (Ask your Komatsu distributor.)	GPS antenna(3.5m) Communication antenna Cable for communication antenna(1.5m)	

Troubles and causes

Trouble	Possible cause	Remedy
KDTC630 cannot communicate.	Communication antenna is not connected.	Connect antenna.
	Antenna cable is broken.	Replace antenna cable.
	Foreign matter is in communication antenna connector.	Remove foreign matter.
	Radio wave does not reach antenna because of obstacle around it.	Install antenna to place where there are no obstacles.
	Out of communicable range.	Move in communicable range.
	Power source is not supplied.	Check service power source, GND, and ACC line.
	KDTC630 has trouble.	Replace KDTC630.
GPS signals are not received.	GPS antenna is not connected.	Connect GPS antenna.
	GPS antenna cable is broken.	Replace GPS antenna cable.
	GPS antenna is defective.	Replace GPS antenna.
	Radio wave does not reach GPS antenna because of obstacle around it.	Install GPS antenna to place where there are no obstacles.
	KDTC630 has trouble.	Replace KDTC630.
When ACC line is turned ON, KDTC630 does not operate (LED does not light up or flash at all).	Power source is not supplied.	Check service power source, GND, and ACC line.
	Interface connector pins are wrong.	Correct interface connector pins.
	KDTC630 has trouble.	Replace KDTC630.

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