

KOMTRAX Terminal Instruction Manual

Model Name **TG105**

Thank you for your purchasing TG105 terminal.

■ 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.

Features/Before using

■ What is TG105

TG105 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

- TG105 uses LTE, UMTS, GSM and GPRS, so it can communicate in a lot of countries that they are used. (A communication contract is required in each place where TG105 will communicate, however.)
- TG105 has Wireless LAN function to be able to communicate other wireless equipment such as tablet PC.
- TG105 can connect ethernet network in the vehicle.

■ Before using

- Since TG105 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 TG105 is being used. It can be used only countries where use of it is permitted. For the countries where use of TG105 is permitted, ask your Komatsu distributor.
- Always contact your Komatsu distributor when exporting or reselling a vehicle equipped with TG105. Note that the radio communication function of TG105 may be turned off forcibly, when the vehicle is out of the countries or areas where use of TG105 is permitted.
- Before using TG105, 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 TG105, 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 TG105 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".



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.

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

Install the communication terminal at least 22cm (8.7 inch) from a operator.



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.

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.



CAUTION

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



This set is not water-resistant.

Prohibit

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



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

Prohibit

Do not pinch, tense, or damage the cables.



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

Prohibit

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.

FCC/IC Statements

NOTICE:

This device complies with Part 15 of the FCC Rules and Industry Canada's applicable license-exempt RSSs.

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.

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/IC 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.

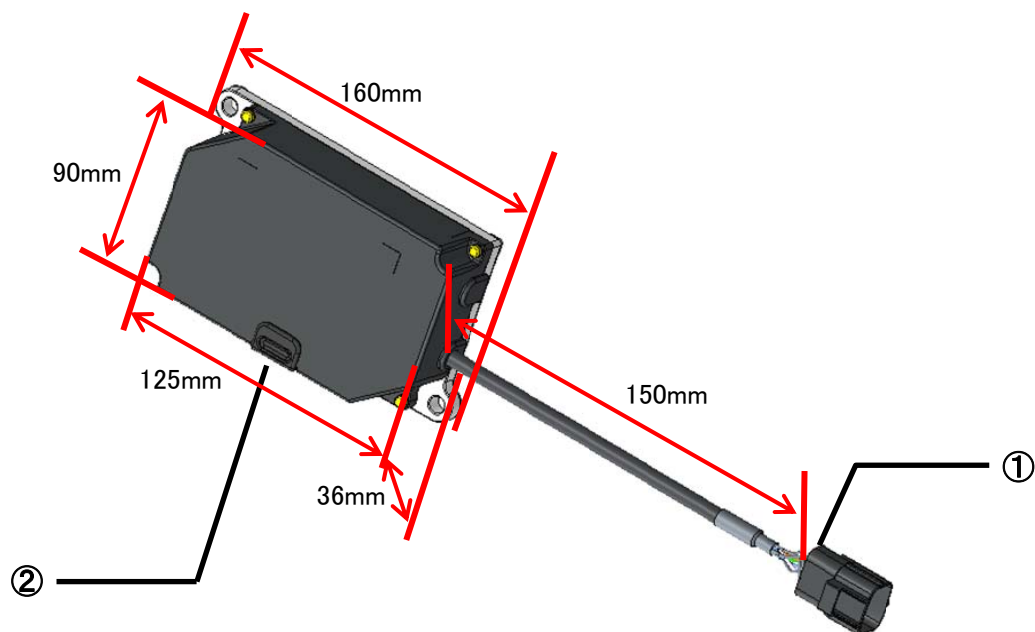
Request for correct use

■ Storage

Do not store TG105 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.)

Size and Outline

TG105



① **Interface connector (AMP)**

Connects the power cable and signal lines on the vehicle side. For details, see the specifications of interface connector.

② **SIM card outlet**

SIM card can insert when rubber cover removed.

Specifications of interface connector

Connector on TG105 side: 174684-2 (Manufactured by TE connectivity)

Pin Number	Name	I/O	Remark
1	PWR_IN_GW	-	Power supply
2	PWR_CTR_GW	In	Start up signal from another controller
3	GND_PWR_GW	-	GND
4	DOS_L_RING	Out	Start up signal for another controller
5	COMM_ETHER_RX+	In	Ethernet 100BASE-TX RX+
6	COMM_ETHER_RX-	In	Ethernet 100BASE-TX RX-
7	COMM_ETHER_TX+	Out	Ethernet 100BASE-TX TX+
8	COMM_ETHER_TX-	Out	Ethernet 100BASE-TX TX-

Specifications

TG105

Power source	DC12V or DC24V (Operating range : DC10V~30V)
Current consumption	Communication Enabled : 400mA Communication Disabled : 185mA Standby State (Waiting for LTE only) : 4mA
Interface	
Ethernet	1ch 100BASE-TX
Digital input	1ch start up signal from another controller
Digital output	1ch start up signal for another controller
Communication band and Output power	Transmitter: <ul style="list-style-type: none"> ▪ EGSM850: +33dBm±2dB ▪ EGSM900: +33dBm±2dB ▪ GSM1800: +30dBm±2dB ▪ GSM1900: +30dBm±2dB ▪ GSM850 8-PSK: +27dBm±3dB ▪ GSM900 8-PSK: +27dBm±3dB ▪ GSM1800 8-PSK: +26dBm+3/-4dB ▪ GSM1900 8-PSK: +26dBm+3/-4dB ▪ UMTS850/1700/1900, WCDMA FDD Bd2/4/5: +24dBm +1/-3dB ▪ LTE (FDD) 700/850/1700/1900, Bd2/4/5/12: +23dBm ±2dB
Wireless LAN	Standard: IEEE802.11b/g/n Output power: <ul style="list-style-type: none"> ▪ IEEE802.11b: +13dBm ▪ IEEE802.11g/11n: +11dBm
Connector	
Interface	174684-2 manufactured by TE connectivity
Operating temperature	-30°C~+60°C
Storing temperature	-40°C~+80°C
humidity	Under 98% (65°C)
Water resistance	R2
Vibration resistance	6.8G (5~200 Hz)
Impact-resistant	50G
Outside dimensions (mm)	165 × 90 × 36mm
Weight	0.8kg

Troubles and causes

Trouble	Possible cause	Remedy
TG105 cannot communicate.	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.
	SIM card is not inserted.	Insert contracted SIM card.
	Power source is not supplied.	Check service power source, GND, and ACC line.
	TG105 has trouble.	Replace TG105.
When start up signal line is turned ON, TG105 does not operate.	Power source is not supplied.	Check service power source, GND, and ACC line.
	Interface connector pins are wrong.	Correct interface connector pins.
	TG105 has trouble.	Replace TG105.