

# General Specifications

GS 05P01D81-43EN

UT32A/MDL  
Digital Indicating Controller  
(DIN Rail Mounting and Wireless  
Communication Type)



## Overview

The UT32A/MDL controller is a simple I/O device for wireless monitoring.

This controller is ideal for monitoring a small number of items such as detection of operating conditions and abnormalities.

For more details of control function, please see General Specification GS 05P01D81-01EN for UT32A/MDL.

(This product can only be used in the Republic of Korea.)

## Features

- Wireless communication (920.6 to 923.4 MHz):  
The addition of a 920 MHz wireless function to the UT32A/MDL enables wireless data communication with the GX20/GP20 paperless recorder or GM data acquisition system (/CM3 option) as the base station. It can also be used as a repeater.



UT32A-00C-11-00/MDL

(Terminal cover is optional.)



## Communication Function

	Function	Method	Interface	Targets	Max connection	Communication Data
920 MHz wireless communication	Wireless communication between GX20/GP20 and GM10 devices.	Wireless slave	920 MHz wireless	GX20/GP20, GM10	99 devices (*1)	PV, SP, OUT, ALM etc
		Gateway function	920 MHz wireless + RS-485	RS485: UT75A/UT55A/UT52A/UT35A/UT32A/UP55A/UP35A/UP32A/UM33A	31 units	

\*1: Total including the number of gateway connections

## 920 MHz wireless communication (with 920 MHz wireless function)

The addition of a 920 MHz wireless function to the UT32A/MDL enables wireless data communication with the GX20/GP20 paperless recorder or GM data acquisition system (/CM3 option) as the base station.

This function can also be used as a repeater to extend the communication distance.



Note: Do not write parameters through wireless communication while running. Use only during maintenance.

- KC mark conformity: KN301 489-1/-3, KN11, KN61000-6-2
- Wireless communication standard: IEEE 802.15.4g compliant
- Carrier frequency band: 920.6 to 923.4 MHz
- Wireless channel bandwidth: 200 kHz
- Number of wireless channels: 14
- Maximum transmission output:  
10 mW EIRP (920.6 to 922.0 MHz)\*  
25 mW EIRP (922.0 to 923.4 MHz)\*  
\* Equivalent Isotropic Radiated Power: Radiated power including the antenna
- Modulation method: GFSK
- Antenna: External antenna (sold separately), SMA-P(reverse) connector
- Data rate: 100 kbps max.
- Communication distance<sup>\*1 \*2</sup> (line-of-sight distance): 700 m max. (depends on the operating environment)  
\*1 Communication errors can occur when wireless communication is temporarily interrupted due to environmental factors such as radio interference.  
\*2 At an antenna height of 1.5 m or more off the ground. Communication distance varies depending on the installation location and environment.
- Communication format: Mesh/multi-hop\* (maximum number of hops: 16)  
\* A function that automatically selects the best communication path according to the communication quality between units. It can be used to extend the communication distance and improve the radio quality.
- LED display: Displays the wireless status using ST1 (green/red) and ST2 (green/red)
- Security function: AES 128 bit encryption
- Implemented protocol: Modbus (slave) protocol
- Modbus slave function: Data can be written and read from Modbus master devices.
- With 920 MHz wireless communication, the initial setting for baud rate is fixed 9600 bps. (Serial gateway function)
- Configuration/measurement communication: The following functions are available using the dedicated software<sup>(\*)</sup>.  
Wireless communication configuration  
Wireless communication status monitoring  
\* MH920 Console International, a console software application made by Oki Electric Industry Co., Ltd.
- Wireless communication configuration interface: USB 2.0 mini-B type)  
Usage: Only for maintenance purposes such as changing wireless communication parameters
- Reboot switch: For rebooting the system after changing wireless settings

## Modbus communication (serial communication)

- Protocol: Modbus (RTU)
- Baud rate: 9600 bps
- Parity: None
- Stop bits: 1 bit
- Data length: 8 bits

## Dedicated External Antenna (Sold separately)<sup>\*1 \*2 \*3 \*4</sup>

Item	Type	
	Sleeve antenna	Roof top antenna
Part number	A1061ER	A1062ER
Installation environment	Indoors	Indoors and outdoors
Cable length	-	2.5m
Antenna type	Dipole	Monopole
Maximum gain	3 dBi or less	2 dBi or less
Directivity	No directivity	
Connector	SMA-P(reverse)	
Operating temperature range	-20 to 65°C	
Waterproof property	Not waterproof	Water resistant (IPX6)
Dimensions	196 mm (including the connector)	83 mm (including the base stand)
		

- \*1: Only dedicated antennas can be used.
- \*2: When using an external antenna, we recommend aligning the direction of the antenna of the peer device and the direction of the antenna of this device to maintain communication quality.
- \*3: To bring out the full performance of the roof top antenna, install it on top of a metal rectangle board that is at least 10 x 20 cm long.
- \*4: Install antennas as far as possible from metal objects and other obstacles. The communication quality may deteriorate if they are close.

- Connectable registers depending on the Modbus communication cycle of the GX/GM base station

Connectable units	Modbus communication cycle			
	500 ms	1 s	2 s	5 s
1	27	100	100	100
2	-	27	100	100
4	-	-	27	100
8	-	-	-	58

- \* The number of readout registers when the GX20/GP20 or GM10 is the base station. This varies depending on the processing load in the device and communication quality.

## EMC Standards

- The UT32A/MDL's 920 MHz wireless communication (with serial gateway function) comply with the Korea Certification mark.

## Construction

- External dimensions (mm):  
48.2 (width) x 114 (height) x 104 (depth)

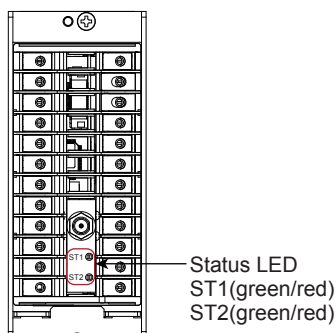
## Isolation

- Isolation specifications

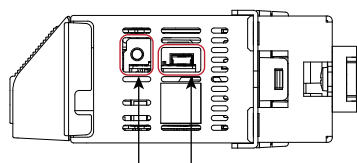
PV (universal ) input terminals / maintenance port USB port for 920 MHz wireless communication configuration		
Control, retransmission (analog) output terminals (not isolated between the analog output terminals)	Internal circuits	Power supply
Control relay (contact point c) output terminals		
Alarm-1 relay (contact point a) output terminals		
Alarm-2 relay (contact point a) output terminals		
Alarm-3 relay (contact point a) output terminals		
Contact input terminals (all) RS-485 communication terminals		

The circuits divided by lines are insulated mutually.

## Display, Switches, and Connectors (with 920 MHz wireless)



Device front side



Reboot switch      USB port for 920 MHz wireless communication configuration

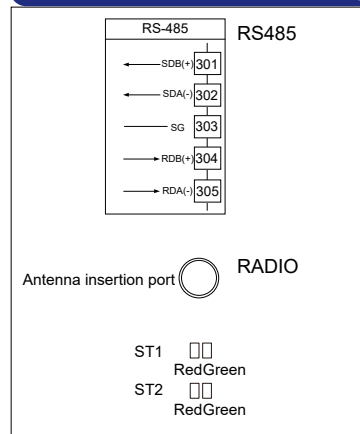
Device bottom side

## Terminal Arrangement

### 301-312 E1-Terminal Area

(Suffix code: Type 3=C)

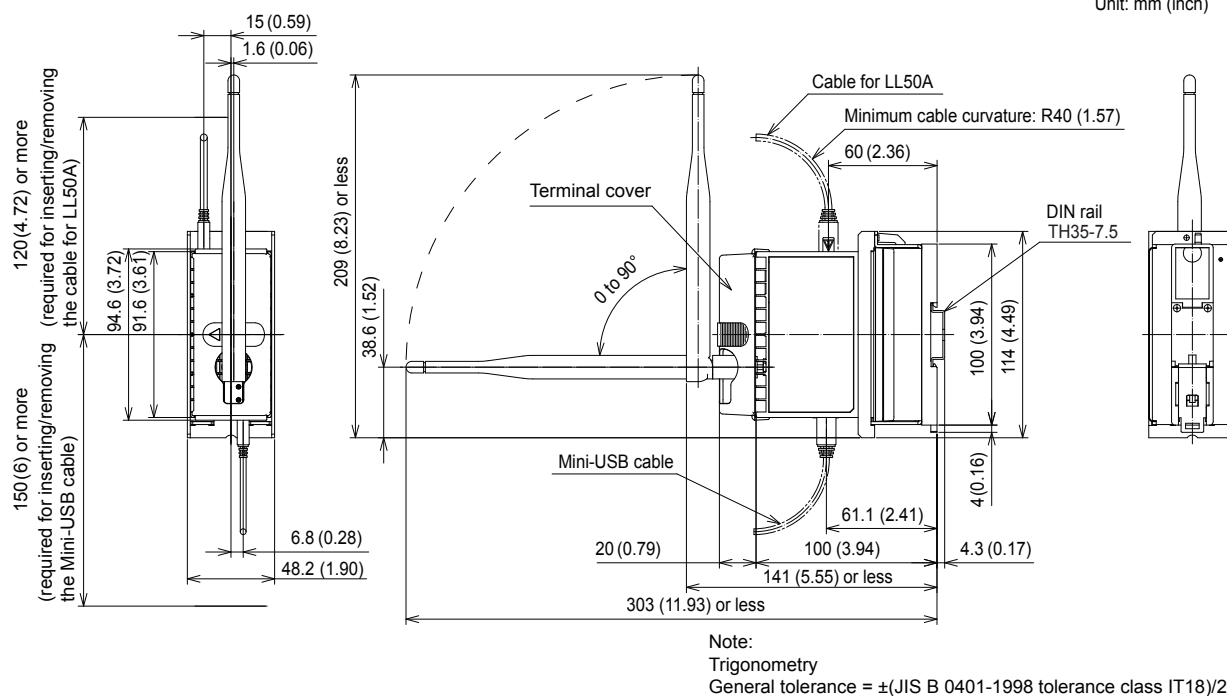
#### 920 MHz wireless communication (with gateway function)



## ■ External Dimensions

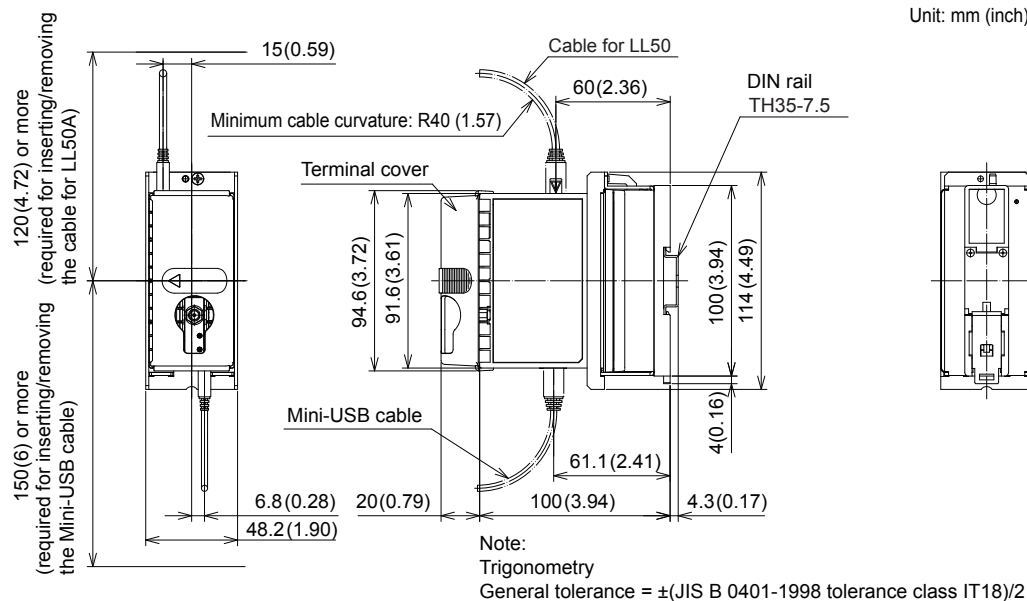
When using the sleeve antenna

Unit: mm (inch)



When using the roof top antenna

Unit: mm (inch)



## ■ Model and Suffix Code

Model	Suffix code	Option code	Description
<b>UT32A</b>		<b>/MDL</b> (Required)	Digital Indicating Controller (Power supply: 100-240 V AC) (provided with retransmission output or 15 V DC loop power supply, 2 DIs, and 3 DOs) (without the display parts and keys)
Type 1: Basic control	-0		Standard type
Type 2: Functions	0		None
	C		Wireless communication (with serial gateway function) <sup>(*)</sup> <For the Republic of Korea>
Fixed code	-1		Temperature unit: deg C & deg F
Case color	1		Black (Light charcoal gray)
Fixed code	-00		Always "-00" (for Standard Code Model)
Option codes		<b>/MDL</b> (Required)	Mount on DIN rail (without the display parts and keys) <sup>(*)</sup>
		<b>/DC</b>	Power supply 24 V AC/DC
		<b>/CT</b>	Coating <sup>(*)</sup>
		<b>/CV</b>	Terminal cover

- \*1: UT32A-00C-11-00/x/MDL can only be used in the Republic of Korea.  
When the wireless communication is specified, the UT32A does not conform to the safety standards (UL and CSA) and CE marking.
- \*2: The /MDL option is specified, the model and suffix codes are follows:  
UT32A-00C-11-00/x/MDL
- \*3: When the /CT option is specified, the UT32A does not conform to the safety standards (UL and CSA) and CE marking  
(Products with /CT option are not intended for EEA-market).

## ■ Standard accessories

Terminal cover and Operation Guide.

## ■ Special Order Items

Name	Model/Parts no.
Sleeve antenna (indoor use)	A1061ER
Roof top antenna (indoor and outdoor use, cable length: 2.5 m)	A1062ER
Terminal cover for Wireless communication	UTAP004
Wall mount bracket (for UT52A/MDL and UT32A/MDL)	UTAP005

## User's Manual

Product user's manuals can be downloaded or viewed at the following URL. To view the user's manual, you need to use Adobe Reader 7 or later by Adobe Systems.

URL: <http://www.yokogawa.com/ns/ut/im/>