

Notice to Customer

Thank for your purchasing our PATLITE products.
 • This Wireless Data Acquisition System WD PRO Series Contact Input - Serial Communication Base Unit (hereafter referred to as "this product") is a WD PRO Series product. • Request the installation and wiring be performed by a professional contractor if construction work is involved. • Prior to installation, read this manual thoroughly before using this product to ensure correct use. • Re-read this manual before conducting maintenance, inspections, repairs, and so on. If you have any questions about this product, please contact our service and repair desk listed on the back of this manual.
 • For details on use, from our website download and refer to the Instruction Manual.

Home Page Address www.patlite.com

To the Contractor

• Prior to installation, read this manual and the instruction manual thoroughly for correct installation results.
 • Return this manual to the customer.

1 Before you begin

About Safety Symbols

To prevent injuries to the user and other personnel, as well as to prevent damage to assets, note the following. • The following symbols classify warnings and cautions, and describe the level of harm and damage that will occur when the corresponding instructions are ignored.

WARNING This symbol indicates, "Failure to follow the instructions may lead to death or serious injury."

CAUTION This symbol indicates, "Failure to follow the instructions may lead to injury or property damage."

The following symbols classify and describe the content of associated messages.

- This symbol identifies "Prohibited" operations that should never be carried out.
- This symbol identifies "Mandatory" instructions that should always be carried out.
- This symbol identifies general "Caution" related information.

Safety Precautions

WARNING Take the following precautions to prevent electric shock, short-circuit, or damage. • Disconnect the power before wiring, repairs, or replacing a fuse. • Use this product under suitable conditions. (If the body or unit becomes damaged, replace it.) • Request the installation and wiring be performed by a professional contractor if construction work is involved. Failure to follow these instructions could result in electric shock, fire, falls, or other.

CAUTION Do not use this product with the O-ring or waterproof gasket removed. Waterproofing will be affected. Failure to follow this instruction will result in injury or equipment damage. • Attach the cap (included) to the cable gland. When the RS-232C cable is not passed through the cable gland, attach the sealing plug (included). Waterproofing will be affected. Failure to follow this instruction will result in injury or equipment damage. • Do not use this product near fire, in hot or humid environments, or where corrosive or flammable gas is present. Failure to follow this instruction could result in injury or equipment damage. • Do not touch the connector terminals inside the unit when attaching or removing each unit or head cover. Failure to follow this instruction could result in equipment damage. • Do not apply voltage to the flashing common line or external input common line. Failure to follow this instruction will result in equipment damage. • Always use this product with the transmitter, LED unit, and head cover and buzzer unit securely attached to maintain dust and waterproofing performance. • When removing covers or packing, which are attached to this product, be careful not to snag the product. Failure to follow this instruction will result in equipment damage.

NOTICE Adhere to the following to maintain safe use of this product: • Perform daily inspections. • As a precaution against problems occurring, use this product together with other equipment. • To prevent static electricity when working with this product, discharge the static electrical charge in your body before starting work. (You can discharge static electricity by touching your hand on grounded metal objects.) • Wipe off dirt or dust adhering to this product with a soft cloth dampened with water. (Do not wipe with cleaners containing thinners, benzene, gasoline, or oil.) • Adhere to the following when handling the parts of this product: • Do not disassemble any part other than that which can be detached from the product. • Do not modify the product. • Use only the specified replacement parts listed in this manual.

2 Model

WDB-D80S-PRO: ϕ 60, Contact Input - Serial Communication Base Unit, WD PRO Series

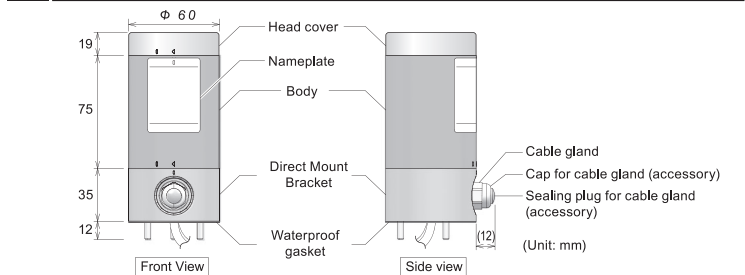
3 Compatible Unit Model

WD PRO Transmitter WDT-6LR-Z2-PRO [Caution] Do not connect units other than compatible units. Failure to follow this instruction could result in decreased performance and equipment failure.

4 Contents

Main Unit 1 unit	Instruction Manual (this document): 1	Accessory	
Hexagon Bolt (M3)	Cap for cable gland	Hexagon Nut with Flange (M4)	Hexagon Nut with Flange (M3)
3	1	3	6
	Sealing plug for cable gland		Terminal Block Connector
	1		1

5 Part Names and Dimensions



6 Mounting Methods

NOTICE The following requirements are necessary for the mounting location. • Location with strong and even surface with minimal vibration.
 • Install this product in the upright position. • If you need to install on an uneven surface and waterproofing is required, use a sealant in the gap between the product and mounting surface. • For IP65 rating requirement, when clamping brackets to the mounting surface, apply sealant to the screw or nut portion and the wire distribution hole.

6.1. Mounting and Installation

There are two wiring methods for the RS-232C cable: 1) Bottom of Main Unit, and 2) Cable gland.
 • The RS-232C cable is offered as an accessory (part number: WDX-SC01) but you can use a commercially available product. In this case, use a cable with lead wires that have a wire diameter of AWG24 to 28. When using the cable gland wiring method, use a cable with a ϕ 4.5 to 6.5 mm diameter.
 • When providing your own, strip one end of the cable as shown below.



6.1.1. Wiring RS-232C cable from the bottom of the unit

- In the mounting location, drill holes for mounting and wiring the product. (→ See 6.1.6, "Mounting Hole Dimension Diagram")
- Rotate the body counterclockwise and detach from the direct mount bracket. (→ 8 Detaching the Unit)
- Apply the sealing plug and cap to the cable gland, and rotate the cap clockwise to attach. *When the sealing plug pops out of the cap, use your hand to push the sealing plug back in. Recommended Torque 0.6 N·m (approximate)
- Use nuts to secure the direct mount bracket in the mounting position. Recommended Torque 0.6 N·m (approximate) (→ See 6.1.4 "Replacing Bolts (M4 → M3) on the Main Unit")
- Cut the RS-232C cable's lead wires so 40 mm remains, then strip them. 2 Strip 6 to 7 mm, 1 Cut (about 30 mm)
- Pass the wires (gray or black tube) and RS-232C cable through the wire distribution hole.
- Wired the RS-232C cable to the terminal block connector and attach to the body. (→ See 6.1.5, "How to Detach the Terminal Block Connector") (→ 7 Wiring Method)
- Reverse the steps for detaching, to attach the body to the direct mount bracket. (→ 8 Detaching the Unit)
- If required, apply sealant around the mounting and wire distribution holes.

6.1.2. Wiring RS-232C cable from Cable Gland

- In the mounting location, drill holes for mounting and wiring the product. (→ See 6.1.6, "Mounting Hole Dimension Diagram")
- Rotate the body counterclockwise and detach from the direct mount bracket. (→ 8 Detaching the Unit)
- Use nuts to secure the direct mount bracket in the mounting position. Recommended Torque 0.6 N·m (approximate) (→ See 6.1.4 "Replacing Bolts (M4 → M3) on the Main Unit")
- Pass the wires (gray or black tube) through the wire distribution hole.
- Cut and strip the RS-232C cable's lead wires. Strip 6 to 7 mm, 70 mm
- Pass the cap through to the RS-232C cable, and push in from the cable gland.
- Wired the RS-232C cable to the terminal block connector and attach to the body. (→ See 6.1.5, "How to Detach the Terminal Block Connector") (→ 7 Wiring Method)
- Tighten the cap clockwise on the insulation portion of the RS-232C cable, with 5 mm of the insulation portion protruding from the direct mount bracket. [Caution] Attaching using any other method than that shown above may reduce protection performance.
- Reverse the steps for detaching, to attach the body to the direct mount bracket. (→ 8 Detaching the Unit)
- If required, apply sealant around the mounting and wire distribution holes.

6.1.3. When not using RS-232C cable

- In the mounting location, drill holes for mounting and wiring the product. (→ See 6.1.6, "Mounting Hole Dimension Diagram")
- Rotate the body counterclockwise and detach from the direct mount bracket. (→ 8 Detaching the Unit)
- Apply the sealing plug and cap to the cable gland, and rotate the cap clockwise to attach. *When the sealing plug pops out of the cap, use your hand to push the sealing plug back in. Recommended Torque 0.6 N·m (approximate)
- Use nuts to secure the direct mount bracket in the mounting position. Recommended Torque 0.6 N·m (approximate) (→ See 6.1.4 "Replacing Bolts (M4 → M3) on the Main Unit")
- Pass the wires (gray or black tube) through the wire distribution hole.
- Reverse the steps for detaching, to attach the body to the direct mount bracket. (→ 8 Detaching the Unit)
- If required, apply sealant around the mounting and wire distribution holes.

6.1.4 Replacing Bolts (M4 → M3) on the Main Unit

M4 bolts are attached to the direct mount bracket by factory default. When using M3 bolts to attach this product, follow the instructions below to replace with M3 bolts.

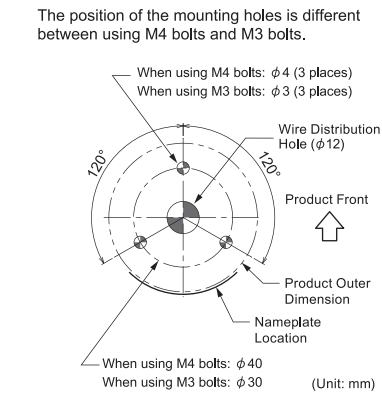
- Remove the waterproof packing at the bottom of the direct mount bracket.
- Detach the M4 nuts (3 locations) and M4 bolts (3 locations) with a nut driver. *Criteria: 7 mm across, outer dimension of socket 11 mm or less
- Detach the M3 nuts (3 locations) and M3 bolts (3 locations) with a nut driver. *Criteria: 5.5 mm across, outer dimension of socket 9 mm or less
- Attach the waterproof packing. [Caution] When attaching the waterproof packing, pay close attention so there is no damage and set the correct orientation. Waterproofing will be affected. Failure to follow this instruction will result in injury or equipment damage.

6.1.5. How to Detach the Terminal Block Connector

Attach With its levers pushed up, insert the terminal block connector into the body. (When pushing the terminal block connector in place, the lever temporarily moves down, before it moves back up and locks in place.)

Detach View of the body from the bottom As illustrated, lower the levers on the left and right sides of the terminal block connector to release the lock, then pull out the terminal block connector.

6.1.6. Mounting Hole Dimension Diagram



6.1.7. Wiring Caution

CAUTION When securing the cable, secure with extra cable length. If there is not enough extra cable length, then it could prevent you from removing this product from the direct mount bracket.

7 Wiring Method

There are two types of wiring for this product, lead wiring and terminal connector wiring.

7.1. Lead wire wiring

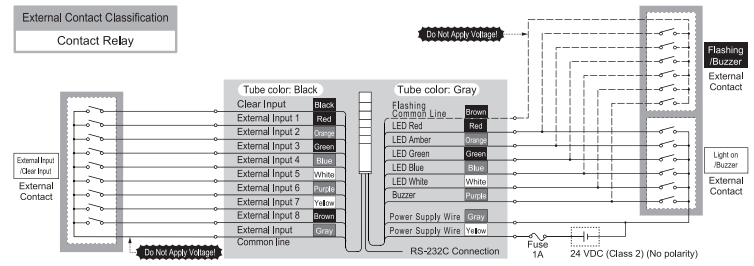
CAUTION Unused lead wires do not have to be connected to external contacts. But in so doing, insulate the leads of unconnected lead wires, one by one. Failure to follow this instruction could result in a short-circuit. • Do not pull lead wires, or stuff them into the main body. Failure to follow this instruction will result in equipment damage. • To protect external equipment, install a fuse on the power supply side.

NOTICE When extending the wires, consider the voltage drop along with appropriate length and diameter of wires.

Wiring Example

The following is a basic wiring example. If you have any questions about a special application for this product, please contact our service and repair desk listed on the back of this manual especially before you do any wiring.

* Wiring example for attaching WD PRO transmitter, LED units, and a buzzer unit.
 * To both turn on the lamp and flash the lamp, you need to prepare separate external contacts for turning the lamp on and for flashing the lamp.



7.2. Terminal Block Connector (RS-232C Interface) Wiring

Terminal Block Connector Pin Arrangement ■ **Terminal Block Connector Wiring Method**

For wiring examples, refer to the Instruction Manual.

TXD: Transmit data
 RTS: Request to send
 GND (SG): Signal ground

Point Use a flat-blade screwdriver with a blade-edge width of 2.5 mm or less and thickness of 0.4 mm or less. (Or equivalent) Do not push the slot harder than necessary with the screwdriver. Failure to follow this instruction could result in equipment damage. Strip 6 to 7 mm of the insulation from the lead wire. When removing the lead wire, do not simply pull the wire to remove it. Make sure you first push the slot down with a flat-blade screwdriver to release the lock.

Recommended lead wire specifications
 Wire Gauge (Stranded Wire) AWG24 to 28
 Use wire with temperature rating of 75°C or higher, and copper wire conductors.

8 Detaching the Unit

WARNING Before any work is done, disconnect the power.

CAUTION Do not apply excessive force to the unit or body. Failure to follow this instruction could result in equipment damage. Do not touch the connectors on the unit or body, or the LED in LED units. Failure to follow this instruction could result in equipment damage. Securely lock each unit when attaching. Failure to follow this instruction could result in equipment damage. Use the following method when detaching units. Failure to follow these instructions could result in equipment damage. • Attaching: Attach units one at a time to the body unit. • Detaching: Hold adjacent units and remove units one at a time. • Mount the WD PRO transmitter (WDT-6LR-Z2-PRO) right on top of this product. Do not attach other units. • Maximum number of attachments for each unit: 1 x this product + 1 x WD PRO transmitter + 5 x LED units + 1 x buzzer unit. Do not attach units beyond that.

NOTICE Refer to the instruction manual of the corresponding unit, then detach it.

Detach Condition of positioning mark when unlocked. Turn the unit to detach counterclockwise to release the lock, then lift up.

Attach Condition of positioning mark when locked. Align with the positioning mark and turn clockwise to lock.

9 Specifications

Model	WDB-D80S-PRO	Power Supply Wire	UL1061 AWG24, x2 (24 VDC, GND)
Rated Voltage	24 VDC	Signal Wire	UL1061 AWG24, x17
Operating Voltage Range	21.6 VDC to 26.4 VDC	Signal Tower Control Line	6 contacts (external relay/NPN/PNP)
Rated Current Consumption	110mA *1	Flashing Common Line	1 contact (60±2 /minute)
Ambient Operating Temperature	-10 °C to +50 °C	External Input Line	8 contacts (external relay/NPN/PNP)
Ambient Operating Humidity	85% RH or less, no condensation	Clear Input Line	1 contacts (external relay/NPN/PNP)
Storage Ambient Temperature	-20 °C to +60 °C	External Input Common Line	1 point
Storage Ambient Humidity	85% RH or less, no condensation	RS-232C	1 x Screwless Terminal Block (6 poles)
Mounting location	Indoors	USB	USB2.0 micro-B terminal *2
Mounting direction	Upright	Status Lamp	LED x 2
Protection Rating	IP65 (IEC 60529), NEMA TYPE 4X,13	Operation Unit	DIP Switch for setting
Mass (Tolerance: ±10%)	300 g		

*1 Attaching WDT-6LR-Z2-PRO *2 Use only for maintenance

• Conform to requirements for the UL Standard
 - Maximum surrounding air temperature rating of 50 °C
 - This product is designed for use on a flat surface for a Type 1 Enclosure.
 - Use a "class 2" power supply specified in the guidelines under UL1310.
 - For use in Pollution Degree 2 Environment.

• FCC notation requirement
 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.

• FCC CAUTION
 Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the 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.
 (Responsible party in U.S.A.) PATLITE U.S.A. Corporation, R20130 S. Western Ave. Torrance, CA90501, U.S.A.

PATLITE Corporation

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