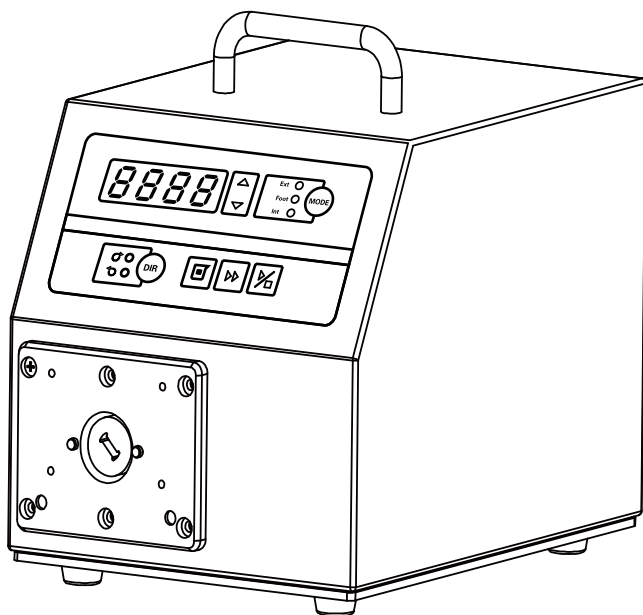




**WT300S/WT600S**

**Variable-Speed Peristaltic Pump**

**Operating Manual**



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## Safety Precautions



### Danger

- To avoid damage, use the correct voltage indicated on the rating plate label of the pump.
- Make no unauthorized dismantling, changes or modifications to the pump. This may result in malfunctions or potential accidents.
- Turn off the pump drive before installing or removing tubing, attempting any maintenance, cleaning or repair of the drive, or connecting or disconnecting external control devices or a communication interface. Fingers or loose clothing may get caught in the drive mechanism.



### Warning

- Ensure no chemical reactions occur between the handled fluid and pump head/tubing material before use.
- Check tubing regularly to avoid breakage. Breakage may result in fluid being sprayed from the pump. Use appropriate measures to protect the operator and equipment. The operator is solely liable for damages resulting from tubing breakage, particularly the leakage of toxic or valuable liquids.
- The pump is equipped with a plug which must be well grounded.
- This device is not designed nor intended for usage in patient-connected applications, including but not limited to medical and dental use.
- Observe all other applicable regulations concerning working and operational safety, environmental protection, and relevant local guidelines.

## **(DE) SICHERHEITSHINWEISE**



### **Gefahr**

- Verwenden Sie die richtige Spannung, die auf dem Typenschild der Pumpe angegeben ist, um Schäden zu vermeiden.
- Nehmen Sie keine unbefugten Demontagen, Änderungen oder Modifikationen an der Pumpe vor, die zu Fehlfunktionen oder sogar zu Unfällen führen könnten.
- Schalten Sie den Pumpenantrieb aus, bevor Sie Schläuche ein- oder ausbauen, Wartungs-, Reinigungs- oder Reparaturarbeiten am Antrieb vornehmen oder externe Steuergeräte oder eine Kommunikationsschnittstelle anschließen oder trennen. Finger oder lose Kleidungsstücke können sich im Antriebsmechanismus verfangen.



### **Warnung**

- Vergewissern Sie sich vor der Verwendung, dass keine chemischen Reaktionen zwischen dem Fördermedium und dem Material des Pumpenkopfs und der Schläuche auftreten können.
- Die Schläuche sollten regelmäßig überprüft werden, um Brüche zu vermeiden. Ein Schlauchbruch kann dazu führen, dass Flüssigkeit aus der Pumpe spritzt. Ergreifen Sie geeignete Maßnahmen zum Schutz des Bedieners und der Ausrüstung. Der Betreiber haftet allein für Schäden, die durch einen Schlauchbruch entstehen, insbesondere für das Austreten von giftigen oder wertvollen Flüssigkeiten.
- Die Pumpe ist mit einem geerdeten Stecker ausgestattet, der stets korrekt an eine abgesicherte Netzsteckdose angeschlossen sein muss. Dieses Gerät ist nicht für Anwendungen ausgelegt oder vorgesehen, die im Zusammenhang mit der Behandlung von Patienten stehen. Medizinische bzw. zahnmedizinische Anwendungen sind nicht bestimmungsgemäß.
- Beachten Sie alle anderen geltenden Vorschriften zur Arbeitssicherheit, zur Betriebssicherheit, zum Umweltschutz sowie die einschlägigen örtlichen Vorschriften.

**(FR) CONSIGNES DE SÉCURITÉ****Danger**

- Utilisez la tension correcte indiquée sur la plaque signalétique de la pompe afin d'éviter tout dommage.
- Ne procédez pas à des démontages, changements ou modifications non autorisés de la pompe qui pourraient entraîner des dysfonctionnements, voire des accidents.
- Mettez l'entraînement de la pompe hors tension avant d'installer ou de retirer des tuyaux, d'effectuer des travaux d'entretien, de nettoyage ou de réparation sur l'entraînement ou de connecter ou déconnecter des dispositifs de commande externes ou une interface de communication. Des doigts ou des vêtements lâches pourraient se prendre dans le mécanisme d'entraînement.

**Avertissement**

- Avant toute utilisation, assurez-vous qu'il n'y a pas de réaction chimique entre le liquide pompé et le matériau de la tête de pompe et des tubes.
- Les tuyaux doivent être contrôlés régulièrement pour éviter les ruptures. Une rupture de tuyau peut entraîner des projections de liquide hors de la pompe. Prenez les mesures appropriées pour protéger l'opérateur et l'équipement. L'opérateur est seul responsable des dommages causés par une rupture de tuyau, notamment en cas de fuite de liquides toxiques ou précieux.
- La pompe est équipée d'une fiche de mise à la terre qui doit toujours être bien reliée à la terre.
- Cet appareil n'est pas conçu ni prévu pour être utilisé en présence de patients, y compris, mais sans s'y limiter, dans le cadre d'applications médicales et dentaires.
- Respectez toutes les autres réglementations applicables en matière de sécurité du travail, de sécurité d'exploitation, de protection de l'environnement.

**(ES) INSTRUCCIONES DE SEGURIDAD****Peligro**

- Utilice la tensión correcta indicada en la placa de características de la bomba para evitar daños.
- No realice ningún desmontaje, cambio o modificación no autorizada en la bomba que pueda provocar un mal funcionamiento o incluso accidentes.
- Desconecte el accionamiento de la bomba antes de instalar o retirar las mangueras, realizar trabajos de mantenimiento, limpieza o reparación en el accionamiento o conectar o desconectar dispositivos de control externos o una interfaz de comunicación. Los dedos o la ropa suelta podrían quedar atrapados en el mecanismo de accionamiento.

**Advertencia**

- Antes de usarla, asegúrese de que no hay reacciones químicas entre el medio bombeado y el material de la cabeza de la bomba y las mangueras.
- Las mangueras deben ser revisadas regularmente para evitar roturas. La rotura de una manguera puede hacer que salga líquido de la bomba. Tome las medidas adecuadas para proteger al operador y al equipo. El operador es el único responsable de los daños causados por la rotura de una manguera, especialmente por la fuga de líquidos tóxicos o valiosos.
- La bomba está equipada con un enchufe con toma de tierra que debe estar siempre bien conectado a tierra.
- Este aparato no está diseñado ni pensado para su uso en relación con los pacientes, incluyendo pero sin limitarse a las aplicaciones médicas y dentales.
- Respetar todas las demás normas aplicables en materia de seguridad laboral, seguridad operativa y protección del medio ambiente.

**(IT) ISTRUZIONI DI SICUREZZA****Pericolo**

- Usare la tensione corretta indicata sull'etichetta della targhetta della pompa per evitare qualsiasi danno.
- Non eseguire smontaggi, cambiamenti o modifiche non autorizzati alla pompa che potrebbero causare malfunzionamenti o addirittura potenziali incidenti.
- Spegnerne l'azionamento della pompa prima d'installare o rimuovere tubi, tentare qualsiasi manutenzione, pulizia o riparazione dell'azionamento, collegare o scollegare dispositivi di controllo esterni o un'interfaccia di comunicazione. Dita o indumenti larghi potrebbero rimanere impigliati nel meccanismo di azionamento.

**Attenzione**

- Assicurarsi che non si verifichino reazioni chimiche tra il fluido trattato e il materiale della testa della pompa e dei tubi prima dell'uso.
- I tubi devono essere controllati regolarmente per evitare rotture. La rottura del tubo può provocare spruzzi di fluido dalla pompa. Utilizzare misure appropriate per proteggere l'operatore e l'attrezzatura. L'operatore è l'unico responsabile dei danni derivanti dalla rottura dei tubi, in particolare della fuoriuscita di liquidi tossici o preziosi.
- La pompa è dotata di una spina con messa a terra che deve essere sempre ben collegata a terra.
- Questo dispositivo non è progettato né destinato all'uso in applicazioni collegate al paziente, incluso ma non limitato all'uso medico e dentistico.
- Osservare tutte le altre norme applicabili riguardanti la sicurezza sul lavoro, la sicurezza operativa, la protezione dell'ambiente e le norme locali pertinenti.

# 1 Description

WT-S variable-speed peristaltic pump not only provides the basic functions like start/stop, reversible direction and adjustable speed, but also the Time Dispense Mode. The brushless drive with large torque can work with multiple pump heads. the pump easily communicates with external devices, including PC, HMI or PLC. This pump series includes:

- **WT300S**, flow rate 3-3500 mL/min, speed: 30-350 rpm
- **WT600S**, flow rate 3-6000 mL/min, speed: 30-600 rpm

# 2 Functions and Features

Peristaltic pumps can handle abrasive, corrosive or viscous fluids. There are no valves to be clogged, or seals contacting the medium pumped. The inner surfaces are smooth and easy to clean, as fluid only contacts the tubing or tube material. Suction lift and priming can reach an 8m water column, at sea level. The pump will also handle shear, sensitive fluids, like latex or firefighting foam. It can run dry and pump fluids with high quantities of entrained air, such as black liquor soap. The high volumetric efficiency allows metering or dosing applications where high accuracy is required. Tubing and tube materials are suitable for food and pharmaceutical use.

- Four-digit LED displays speed and working mode.
- LED indicator shows the working state.
- Membrane keypad.
- Reversible direction, start/stop control and adjustable speed.
- Time Dispense Mode: After setting the duration time for each dose, the pump will dispense by pressing the DISPENSE key.
- Maintenance-free brushless drive with large torque to work with multiple pump heads
- 3% precision rotating speed control with 1 rpm speed resolution.



- The external logic level signal controls the start/stop, direction and dispensing functions, while the external analogue signal adjusts the rotating speed. The signal is optically isolated.
- The RS485 MODBUS interface allows easy communication with external devices.
- The double-layer isolation structure, comprising a circuit board with conformal coating, makes the pump dust and moisture-proof.
- Anti-electromagnetic interference feature
- A wide input voltage range for complex power environments.
- Stainless steel enclosure, easy to clean, resistant to corrosion from acid, alkali, sodium and organic solvents.

### 3 Components and Connectors

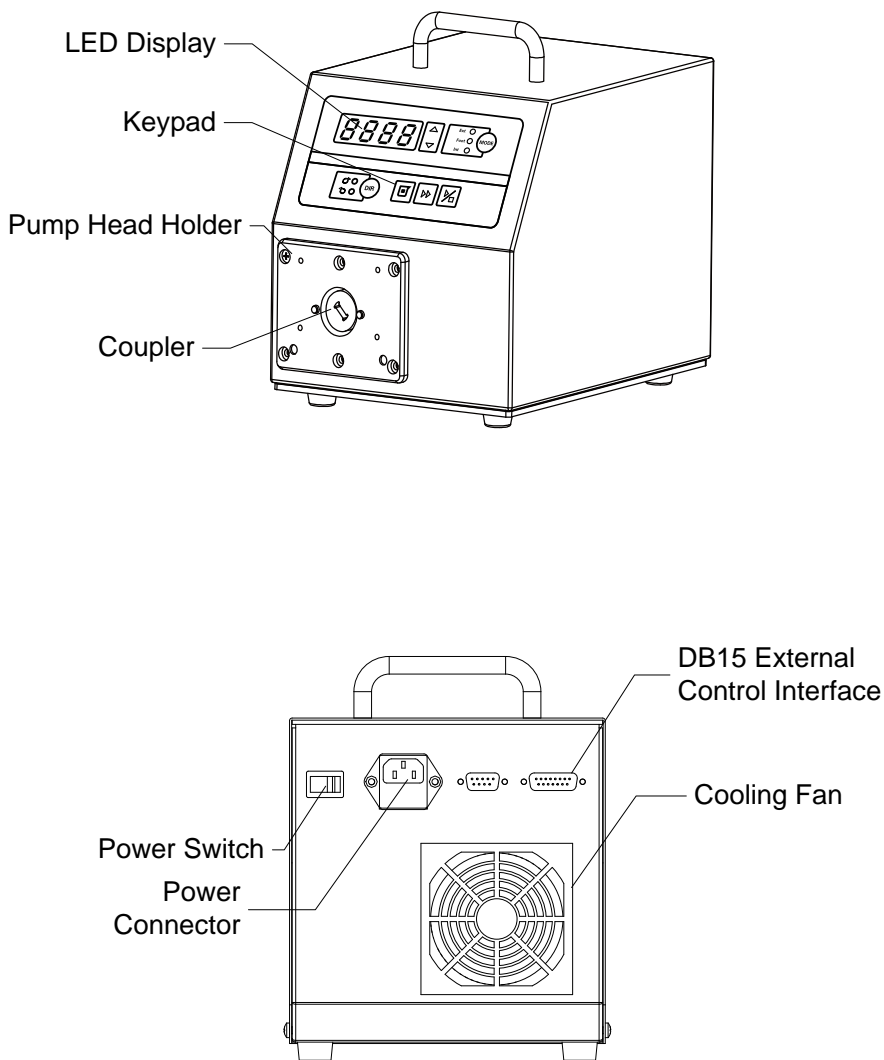


Figure 1. Components and Connectors

## 4 Display Panel and Operating Keypads

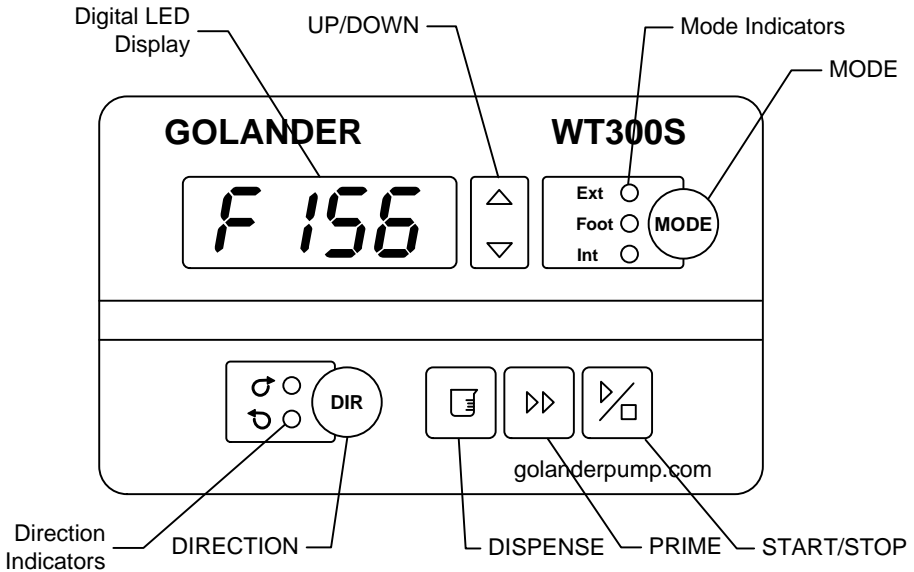
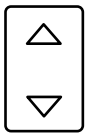


Figure 2. Display panel

### 4.1 Keypad



**UP** Key. When held momentarily, the last digit of the value will increase by 1. Hold the key to quickly increase the value.

**DOWN** Key. When held momentarily, the last digit of the value will decrease by 1. Hold the key to decrease the value quickly.



**MODE** key. When the drive is not running, use the MODE key to change the working mode: Internal Control mode, External Control mode, Time Dispense Mode and Logic Level Control Mode.



**DIRECTION** Key. Press the direction key to change the rotating direction between clockwise and counterclockwise



**DISPENSE** key. When the drive is not running, use the DISPENSE key to dispense. Press and hold the key to enter the Time Dispense Setup Mode.



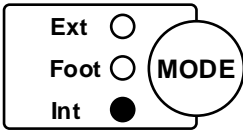
**PRIME** key. Press the key to run the pump at the maximum speed in the direction on the display. Press again to return to the previous state.



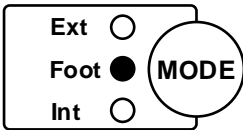
**START/STOP** key. Press the key to start or stop the pump.

## 4.2 Digital LED and Indicators

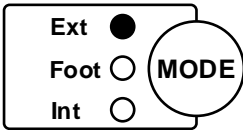
### 4.2.1 Indicators



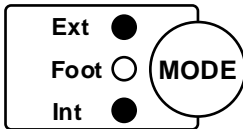
Int: Internal Control Mode. Use the keypad to operate the pump. A footswitch can be used to control start /stop.



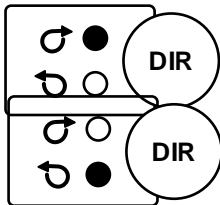
Foot: Time Dispense Mode. Use a footswitch or the DISPENSE key to start or stop dispensing. Use the keypad for other operations.



Ext: External Control Mode. Use an external analogue signal to control rotation speed. Use an external logic level signal to control direction, start and stop. The keypad is disabled.



Int+Ext: Logic Level Control Mode. Use a logic-level signal to control the start and stop. Use the keypad to control direction and speed.

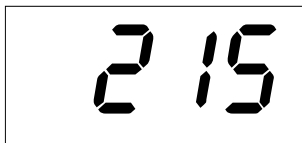


Clockwise Direction: The motor runs clockwise.

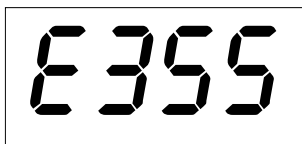
Counterclockwise Direction: The motor runs counterclockwise.

### 4.2.2 Digital LED Display

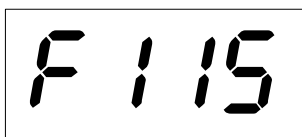
The digital LED displays the rotating speed and working mode.



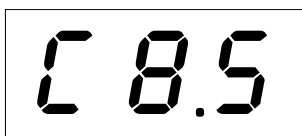
*Figure 3. Internal Control Mode, 215 rpm*



*Figure 4. External Control Mode, 355 rpm*

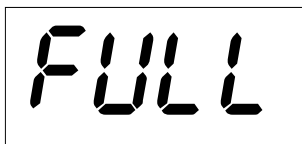


*Figure 5. Time Dispense Mode, 115 rpm*



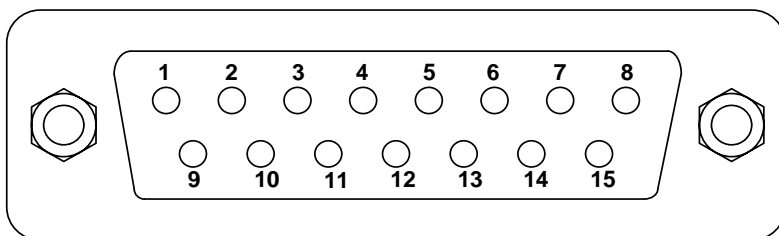
*Figure 6. When flashing, the pump is in Time Dispense Setup Mode*

*Dispense Duration 8.5 seconds*



*Figure 7. Drive running at full speed*

## 5 External Control Interface



| DB15 | Mark  | Note   |
|------|-------|--|
| 1    | ADC_W | Positive of external analog input              |
| 2    | B     | Communication interface, B pole of RS485       |
| 3    | A     | Communication interface, A pole of RS485       |
| 4    | VCC_W | External DC power input                        |
| 5    |       |  |
| 6    | CW_W  | External input signal to control the direction |
| 7    |       |  |
| 8    | COM   | Ground of external power                       |
| 9    | AGND  | Negative of analog signal input                |
| 10   | +12V  | Positive of internal +12V power source         |
| 11   | GND   | Ground of Internal power source                |
| 12   |       |  |
| 13   | RS_W  | External start/stop signal input terminal      |
| 14   |       |  |
| 15   |       |  |

## 6 Operation Instructions

### 6.1 Before Operation

- 1) Please check the packing slip to ensure all parts are included and intact. If there is a problem, please contact the manufacturer or

distributor.

- 2) Read the instructions.
- 3) At least 200mm of space from the back of the pump should be maintained when in operation.

## 6.2 Power Connection

The voltage of the power supply should match what is indicated on the rating plate label of the pump. Plug the power cord into the IEC Power Connector on the rear of the pump and plug the opposite end of the power cord into an electrical outlet. Flip the power switch on the rear of the pump.

## 6.3 Mode Change

Turn on the power switch. The display will be on. Press the MODE key to change the working mode.

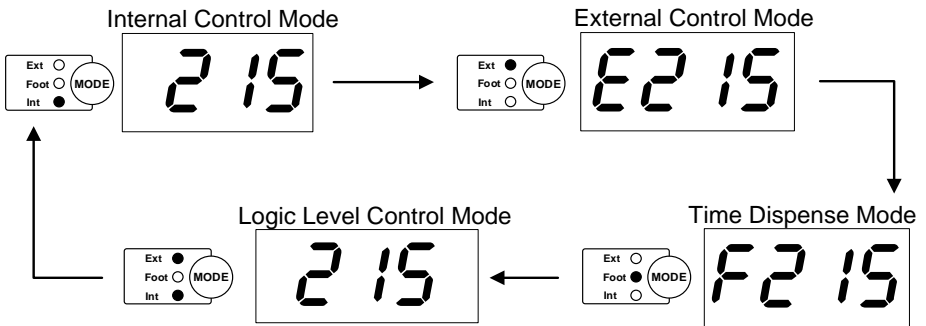
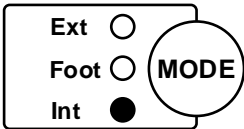


Figure 8. Change Working Mode

## 6.4 Internal Control Mode

In this mode, use the keypad to operate the pump.



- 1) Turn on the power. The display will be on.
- 2) Press the MODE key to change the mode to Internal Control Mode (the Int indicator is on).
- 3) Press the UP or DOWN key to set the speed.
- 4) Press the DIRECTION key to change the rotating direction.
- 5) Press the START/STOP key to start or stop the drive.
- 6) Press the PRIME key, the drive will run at full speed.

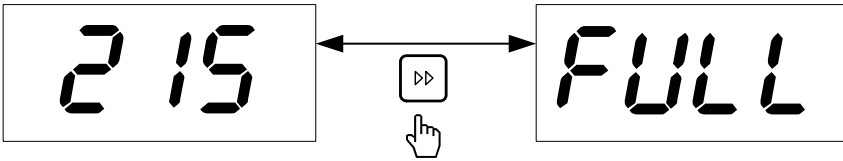


Figure 9. Full Speed

## 6.5 External Control Mode

Use the external logic level signal to control direction, start and stop. Use an external analog signal to control rotation speed. The keypad is disabled. The analog signal could be 0-5V, 0-10V or 4-20mA. The signal is 0-5V by default. For 0-10V or 4-20mA, the jump setting on the analog signal control board has to be changed.

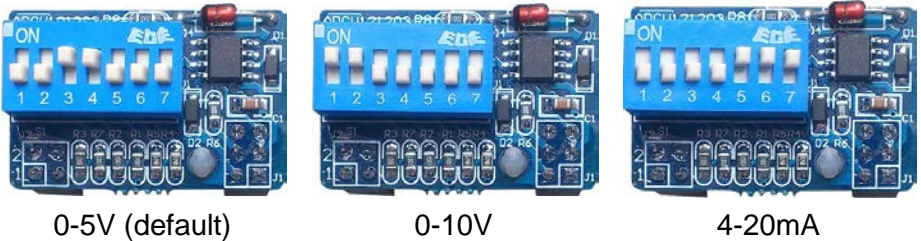


Figure 10. Analog Signal Control Board Setting

To control the pump by an external signal

- 1) Switch the power off. Wire the DB15 connector as shown in [Figure 11](#) or [Figure 12](#). Connect it to the DB15 port on the rear of the pump.



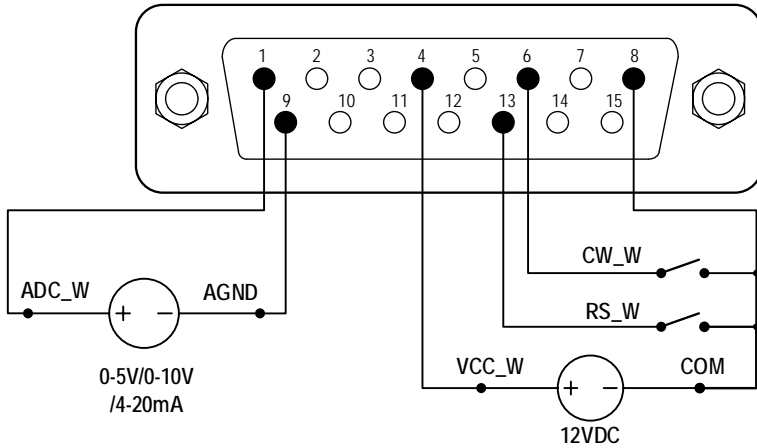


Figure 11. DB15 Wiring with External 12VDC Power Source

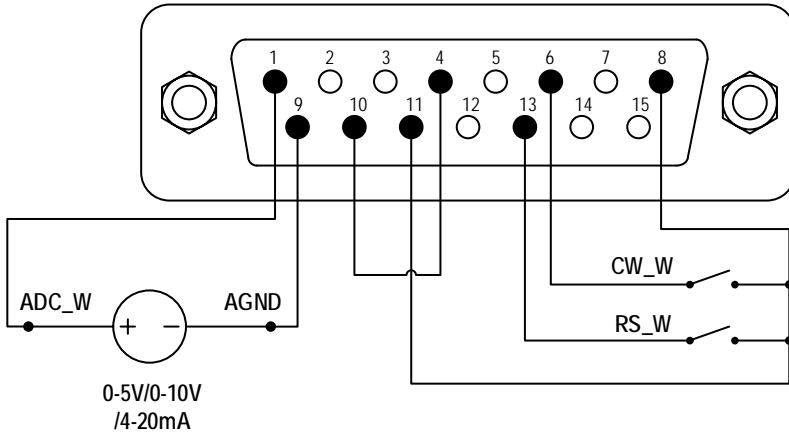
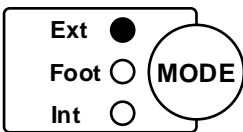


Figure 12. DB15 Wiring with Internal 12VDC Power Source



- 2) Turn on the power switch. The LED display will be on.
- 3) Press the MODE key to change the mode to External Control Mode.
- 4) Close the external RS\_W switch, and turn on the external analog signal power source. The speed will change according to the intensity of the input signal. Open the RS\_W to stop the drive.

- 5) Opening the CW\_W switch, the drive will run clockwise. Closing the CW\_W switch, the drive will run counterclockwise.

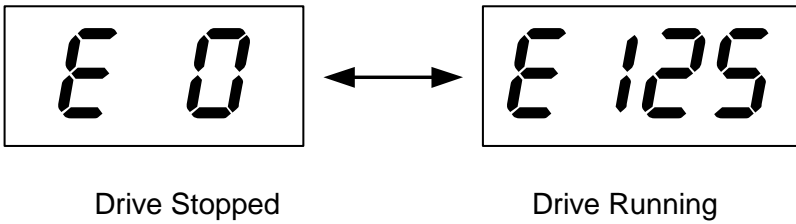


Figure 13. External Control Mode

**Note:** The external DC power source can be 5V and 12V. If it is 24V, a 1.5K resistor is needed to protect the internal circuit.

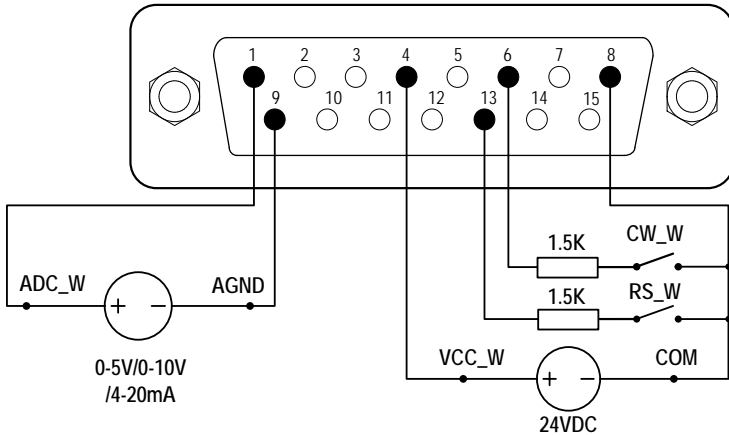


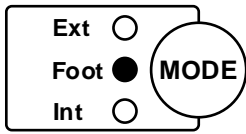
Figure 14. DB15 Wiring with External 24VDC Power Source

## 6.6 Time Dispense Mode

The pump will dispense fluid by setting the duration time for each dose. The drive will stop automatically when dispensing is completed.

To set the duration time for each dose

- 1) Turn on the power switch. The display will be on.



- 2) Press the MODE key to change the mode to Internal Control Mode or Time Dispense Mode.
- 3) Press and hold the DISPENSE key for 3 seconds until the four-digit LED display starts to flash. The pump is in the Time Dispense Setup Mode.

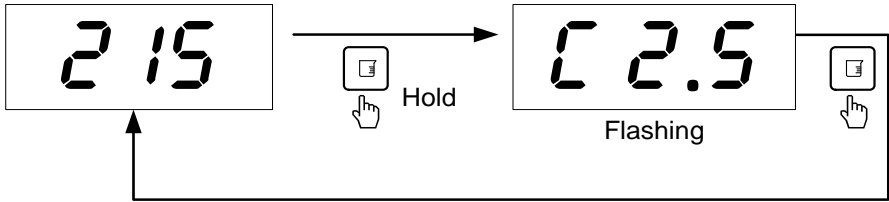


Figure 15. Time Dispense Setup Mode

- 4) In the Time Dispense Setup Mode, the duration time can be set by pressing the UP or DOWN key. The time range is 0.1 to 999 seconds.
- 5) Press the DISPENSE key again to exit the Time Dispense Setup Mode.

#### To Dispense Fluid

- 1) Press the DIRECTION key to adjust the running direction, clockwise or counterclockwise.
- 2) In the Internal Control Mode or Time Dispense Mode, press the DISPENSE key to dispense one dose. Press the DISPENSE key again to repeat dispensing.
- 3) When in the Time Dispense mode, an optional footswitch can be used to dispense. Close then open the footswitch to dispense one dose. Close then open the footswitch again to repeat dispensing (see section [6.9](#)).
- 4) When the drive is running, press the START/STOP key to stop the process anytime.

## 6.7 Logic Level Control Mode

In this mode, use a logic-level signal to control the start and stop. The

keys on the front panel can control direction and speed.

- 1) Switch the power off. Wire the DB15 connector as shown in *Figure 16* or *Figure 17*, and connect it to the DB15 port on the rear of the pump.

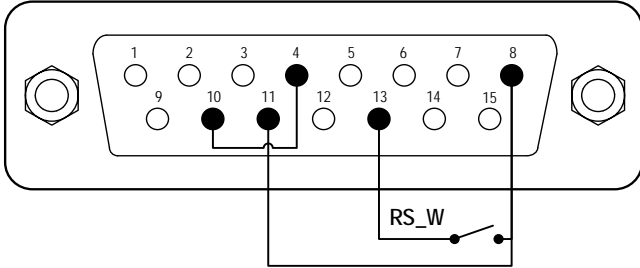


Figure 16. Logic Level Control with Internal 12V Power Source

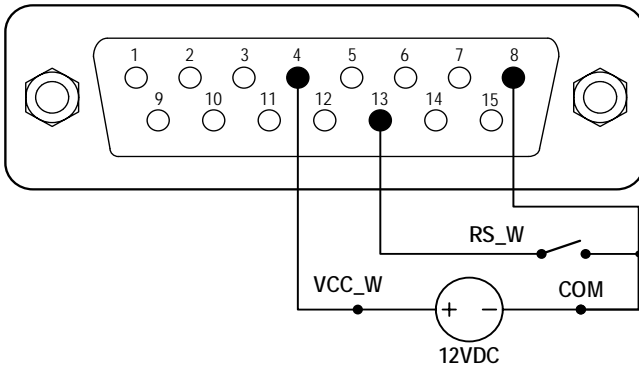
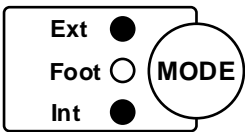


Figure 17. Logic Level Control with External 12V Power Source



- 2) Turn on the power switch. The display will be on.
- 3) Press the MODE key to change the mode to Logic Level Control Mode.
- 4) Press the UP or DOWN key to set the speed.
- 5) Press the DIRECTION key to change the rotating direction.
- 6) When the RS\_W switch is closed, the drive will be running; when the RS\_W switch is open, the drive will stop.

Note: Use this mode to work with a TIME DISPENSE CONTROLLER.

## 6.8 Communication Mode

The RS485 interface supports the standard MODBUS protocol and allows the pump to communicate with external devices via the communication port. Please refer to the [Communication Instruction Manual](#) for the parameters and supported commands.

- 1) When the power is off, wire the DB15 connector as shown in [Figure 18](#), and connect it to the DB15 port on the rear of the pump. An external DC power source is recommended to avoid electrical interference.

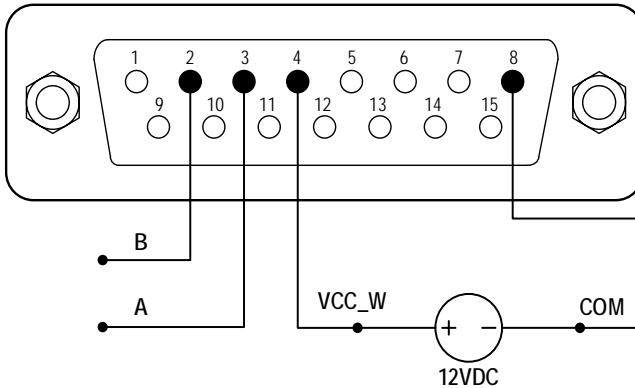


Figure 18. RS485 MODBUS Wiring

- 2) Turn on the power switch. The LED display will be on.
- 3) Press the MODE key to change the mode to Internal Control Mode or Time Dispense Mode.
- 4) Control pump with the communication interface.
- 5) Press the START/STOP key to stop the drive anytime.

## 6.9 Footswitch Control

- 1) Switch the power off. Wire the DB15 connector as shown in [Figure 19](#) or [Figure 20](#), and connect it to the DB15 port on the rear of the pump.

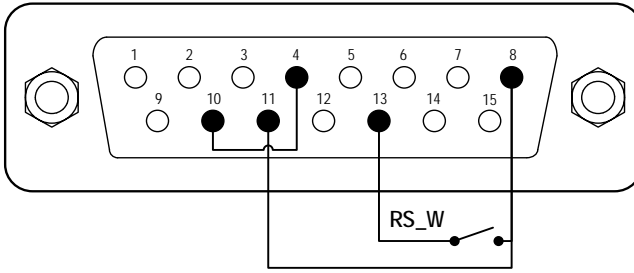


Figure 19. Footswitch with internal 12V Power Source

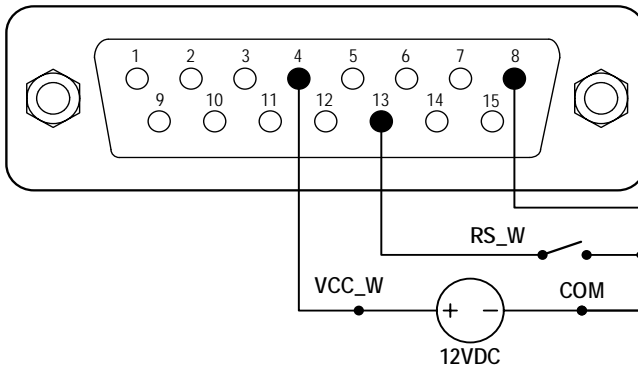


Figure 20. Footswitch with External 12V Power Source

- 2) Turn on the power switch. The LED display will be on.
  - 3) Press the MODE key to change the working mode.
- In the Internal Control Mode: When the switch RS\_W is closed and then opened, the drive will start. When the switch RS\_W is closed and then opened again, the drive will stop.
  - In the Time Dispense Mode: When the switch RS\_W is closed and then opened, the pump will dispense one dose and then stop.
  - In Logic Level Control Mode: Close the switch RS\_W to start the drive. Open the switch to stop the drive.

## 7 Maintenance

### 7.1 Warranty

The product comes with three-year labor and parts warranty. The limited warranty covers no damage that is caused by improper usage and handling.

### 7.2 Regular Maintenance

- 1) To avoid leakage, always check the tubing and connections.
- 2) Do not cover the fan on the rear of the pump.
- 3) Do not use water to wash the pump. Keep the pump head dry.
- 4) Do not use chemical solvents to clean the pump and pump head.

### 7.3 Malfunction Solutions

| No. | Malfunction | Description         | Solution   |
|-----|-------------|---------------------|--|
| 1   | Hardware    | No display          | <ol style="list-style-type: none"> <li>1. Check the power cord</li> <li>2. Check the fuse. If it was blown, replace it with a 1A slow-blow fuse</li> <li>3. Check the internal power cord connection inside the pump.</li> </ol>   |
| 2   | Hardware    | Motor does not work | <ol style="list-style-type: none"> <li>1. Check the indicator of the driver board.</li> <li>2. Check the wire connection between the motor and the driver board.</li> <li>3. Check the wire connection between the driver and the main board.</li> <li>4. Check the power voltage for the pump.</li> </ol> |
| 3   | Hardware    | Motor is trembling  | <ol style="list-style-type: none"> <li>1. Check the wire connection between the motor and the driver board.</li> </ol>   |

## WT300S/WT600S Variable-Speed Peristaltic Pump

|    |          |                                  |  |
|----|----------|----------------------------------|--|
|    |          |                                  | 2. The motor is overloaded. Check the mechanical connection.   |
| 4  | Hardware | Motor only runs in one direction | Check the connection between the drive board and the main control board.   |
| 5  | Hardware | Keypad does not work             | 1. Check the wire connection between the keypad and the main board.<br>2. Check if the key is broken.  |
| 6  | Hardware | External control does not work   | 1. Check the wiring of the connector.<br>2. Check if the external control power voltage is provided.<br>3. Check the connections of the external control board.          |
| 7  | Hardware | RS485 com does not work          | 1. Check the wiring of the connector.<br>2. Check if the external control power voltage is provided.<br>3. Check the connections of the communication board.             |
| 8  | Hardware | Noisy when running               | Check the screws and level on the pump head to make sure they are secure.  |
| 9  | Software | External control does not work   | Check if the pump is in the External Control Mode.   |
| 10 | Software | RS485 does not work right        | 1. Check if the display shows the communication is ready.<br>2. Reset the address of the pump.<br>3. Check whether on the bus there are two pumps using the same address |



If the problem cannot be solved, please contact the manufacturer or distributor.



## 8 Dimensions

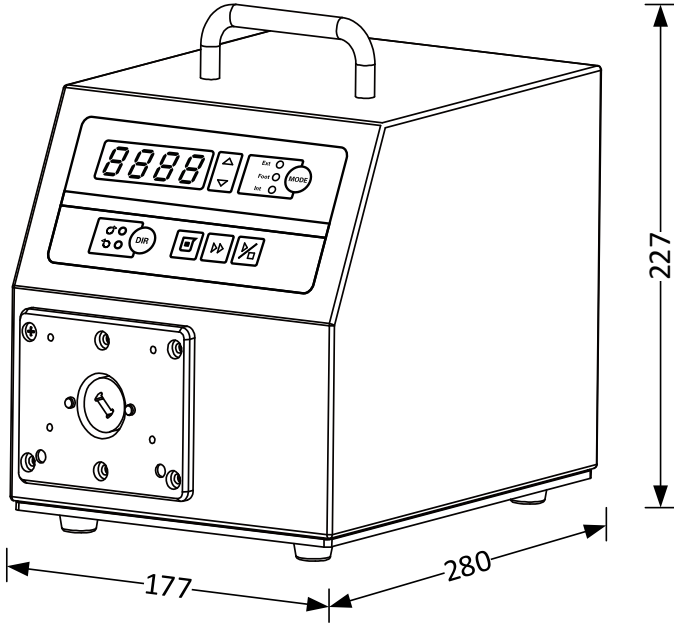
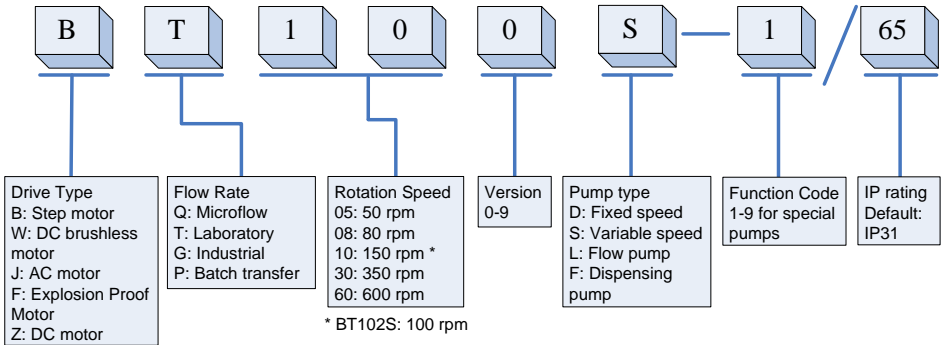


Figure 21. Dimensions (mm)

## 9 Naming Rule



## 10 Specifications

|                                     |   |
|-------------------------------------|---|
| Speed resolution                    | 1 rpm   |
| Speed accuracy                      | 3%  |
| Power supply                        | AC180-264V 50Hz/60Hz (standard)<br>AC90-132V 50Hz/60Hz (optional) |
| Power consumption                   | < 200W  |
| External logic level control signal | 5V, 12V (standard), 24V (optional)                                |
| External analog control signal      | 0-5V (standard); 0-10V, 4-20mA (optional)                         |
| Communication interface             | RS485 MODBUS  |
| Operating condition                 | Temperature 0~40°C, Relative humidity <80%                        |
| IP grade                            | IP31  |
| Display                             | Four-digit LED  |
| Dimensions (LxWxH)                  | 280x177x227 mm (11.02x6.97x 8.94 inch)                            |
| Weight                              | 6.2 kg (13.7 lbs)   |

### WT300S Suitable Pump Heads and Tubings, Flow Parameters

| Drive type | Pump Head | Ch | Tubing size                 | Flow rate per channel (mL/min) |
|------------|-----------|----|-----------------------------|--------------------------------|
| WT300S     | YZ15      | 1  | 13# 14# 16# 19# 25# 17#     | 3~990                          |
|            | YZ25      | 1  | 15# 24#                     | 50~990                         |
|            | 2 x YZ15  | 2  | 13# 14# 16# 19# 25# 17#     | 3~990                          |
|            | 2 x YZ25  | 2  | 15# 24#                     | 50~990                         |
|            | 4 x YZ15  | 4  | 13# 14# 16# 19# 25# 17#     | 3~990                          |
|            | 4 x YZ25  | 4  | 15# 24#                     | 50~990                         |
|            | YT15      | 1  | 13# 14# 16# 19# 25# 17# 18# | 3~1300                         |
|            | YT25      | 1  | 15# 24# 35# 36#             | 50~1600                        |
|            | 2 x YT15  | 2  | 13# 14# 16# 19# 25# 17# 18# | 3~1300                         |
|            | 2 x YT25  | 2  | 15# 24# 35# 36#             | 50~1600                        |

**WT300S/WT600S Variable-Speed Peristaltic Pump**

|  |          |   |                             |         |
|--|----------|---|-----------------------------|---------|
|  | 4 x YT15 | 4 | 13# 14# 16# 19# 25# 17# 18# | 3~1300  |
|  | 4 x YT25 | 4 | 15# 24# 35# 36#             | 50~1600 |
|  | DT15-24  | 2 | 16# 19# 25# 17#             | 14~930  |
|  | DT15-44  | 4 | 16# 19# 25# 17#             | 14~610  |
|  | KZ25     | 1 | 15# 24# 35# 36#             | 80~3500 |
|  | 2 x KZ25 | 2 | 15# 24# 35# 36#             | 80~3500 |

**WT600S Applicable Pump Heads and Tubings, Flow Parameters**

| <b>Drive type</b> | <b>Pump Head</b> | <b>Ch</b> | <b>Tubing size</b>          | <b>Flow rate per channel (mL/min)</b> |
|-------------------|------------------|-----------|-----------------------------|---------------------------------------|
| WT600S            | YZ15             | 1         | 13# 14# 16# 19# 25# 17#     | 3~1700                                |
|                   | YZ25             | 1         | 15# 24#                     | 50~1700                               |
|                   | 2 x YZ15         | 2         | 13# 14# 16# 19# 25# 17#     | 3~1700                                |
|                   | 2 x YZ25         | 2         | 15# 24#                     | 50~1700                               |
|                   | 4 x YZ15         | 4         | 13# 14# 16# 19# 25# 17#     | 3~1700                                |
|                   | 4 x YZ25         | 4         | 15# 24#                     | 50~1700                               |
|                   | KZ25             | 1         | 15# 24# 35# 36#             | 80~6000                               |
|                   | 2 x KZ25         | 2         | 15# 24# 35# 36#             | 80~6000                               |
|                   | DT15-24          | 2         | 16# 19# 25# 17#             | 14~1600                               |
|                   | DT15-44          | 4         | 16# 19# 25# 17#             | 14~1600                               |
|                   | YT15             | 1         | 13# 14# 16# 19# 25# 17# 18# | 3~2300                                |
|                   | YT25             | 1         | 15# 24# 35# 36#             | 50~2900                               |
|                   | 2 x YT15         | 2         | 13# 14# 16# 19# 25# 17# 18# | 3~2300                                |
|                   | 2 x YT25         | 2         | 15# 24# 35# 36#             | 50~2900                               |
|                   | 4 x YT15         | 4         | 13# 14# 16# 19# 25# 17# 18# | 3~2300                                |
|                   | 4 x YT25         | 4         | 15# 24# 35# 36#             | 50~2900                               |

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