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MULTI-TURN / PART-TURN

# INTELLIGENT ELECTRIC ACTUATOR

## NEWTORK KOREA

NEW TORK
THE WORLD LEADER IN ACTUATION SOLUTION

# THE WORLD LEADER IN ACTUATION SOLUTION

## ALL ABOUT ELECTRIC ACTUATORS

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## INTRODUCTION

NEWTORK KOREA was founded by engineers with more than 20years experience in the valve industry. For more than 10 years, we have manufactured and supplied electric actuators, functional control devices for plant fluid management and we are certified to ISO 9001:2015, ISO 14001:2015, and OHSAS 18001:2007 quality assurance standard.

NEWTORK KOREA has in-depth experience in retrofit and the strength to deliver on-site service that even covers products of other makers. With the expertise to advise on national standard enactment of electric actuators, NEWTORK KOREA is developing next-generation products to reduce the burden on customers and increase convenience.

As a leader in actuation solutions, NEWTORK KOREA's prime goal is to provide efficient and economical solutions to customers through continuous efforts, excellent technology, and long-term expertise, ultimately to advance as a business partner that helps drive customer growth.

NEWTORK KOREA will continue to grow steadily based on user trust as it strives to become the first choice for customers. Based on world-class technology, cost competitiveness, high quality, prompt accurate service, and thorough follow-up management, we promise to provide stability and differentiated technical support for our customer's plants.

## INDUSTRIES

WATER & SEWAGE

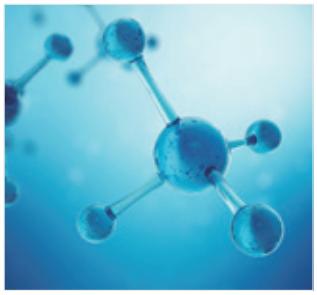
POWER PLANT

OIL & GAS

PETROCHEMICAL PLANT

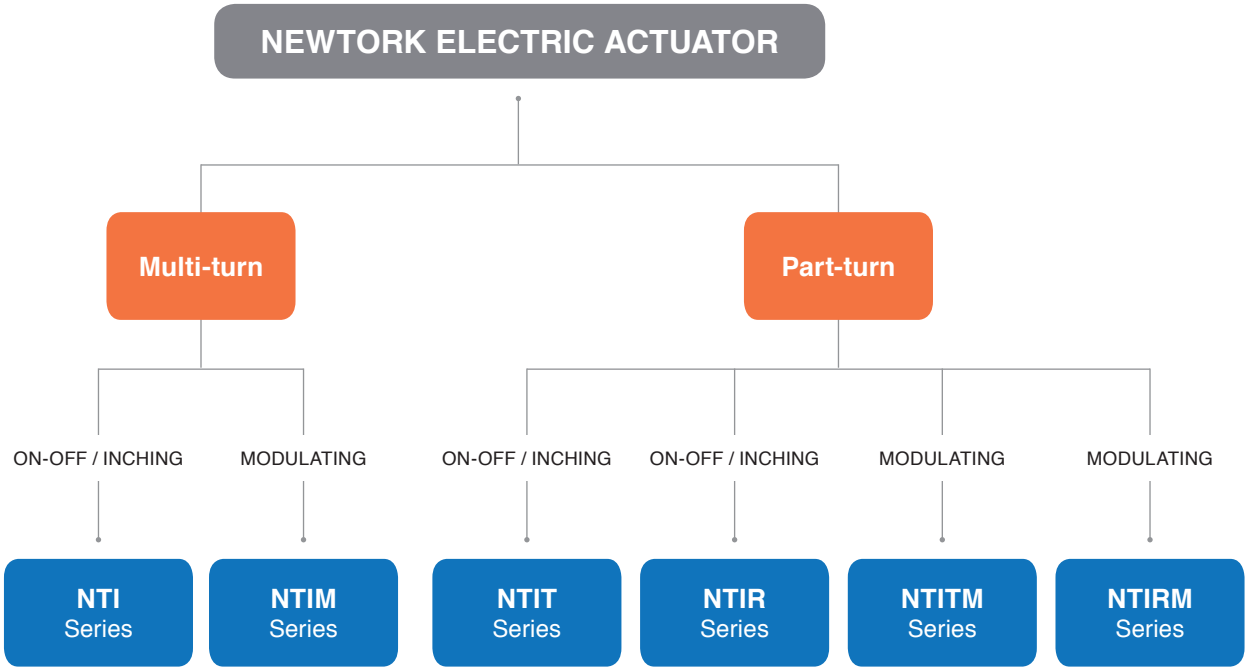
DAM

SHIPYARD



NUCLEAR ENERGY

## PRODUCT CATEGORY




NTI
(Multi-turn)

NTIT
(Part-turn)

NTIR
(Part-turn)

### Non-interference design

To prevent penetration of dirt and humidity in the field, non-interference design is adopted which can be set by infrared remote control without opening the cover. In order to avoid penetration of very fine foreign matter during use in the field, the unit is generally designed with hole magnetic sensor technology, abandoning the product's field operation method through the shaft.

### Enclosure

As a double sealed water-proof structure, NTI and NTIT series are based on IP68 (15m, 90 hours) and NTIR series are based on IP67. Explosion-proof products (only NTI series) is based on Ex d IIC T4 complied with IEC60079-0:2011, IEC60079-1:2014 and it is optional. Since the terminal block and the electrical control unit are separated, the internal electrical control unit can be completely water- and dust-proof even if the terminal block cover is opened for wiring.

### Accurate torque measurement

The precise torque value is measured by converting the repulsive power of the motor shaft transmitted by the pressure sensor into an electronic signal. A pressure sensor (strain gauge) is used to measure torque quickly and accurately during output and a torque measurement system is used to check change of torque in the LCD window, in addition to a reliable overload prevention system. The problem of torque value deviation caused by mechanical gear efficiency change can also be solved by this torque detection system.

### Precise position measurement

A progressive hole incremental encoder is used for valve position measurement. The non-contact encoder design was applied to overcome the shortcomings of the previously used potentiometer, with its lack of durability and short lifespan, and to promote product reliability. This encoder has a setting range from 2.5 revolutions up to 150,000 revolutions, with an optional 24-bit optical encoder.

### Highly reliable electronic system

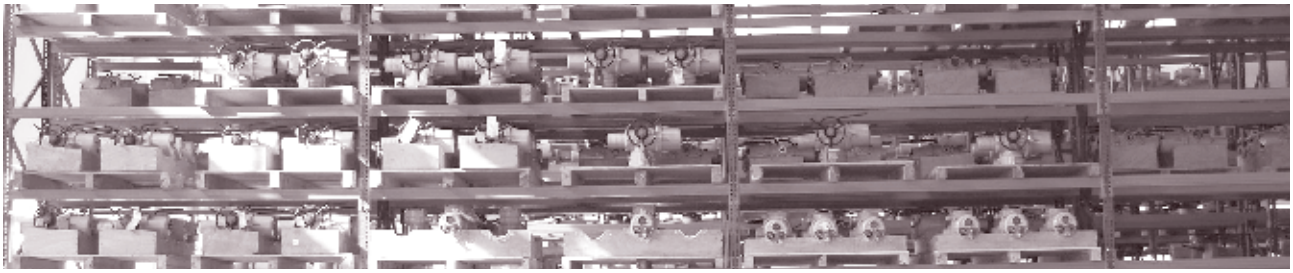
The embedded electronic system uses an innovative, 32-bit system on a Chip (SOC) with built-in multifunctional circuits as well as robust computability. This system includes essential electronic circuits, e.g. Logic board, Interface board, components of electronic components except complicated electrical connections, and very convenient electronic control devices including limit switch and torque switch.

### High-definition LCD

Equipped with a high definition LCD with wide viewing angle, large display window, and backlight, it is designed to provide users with easy checking of valve opening, torque, and function status from a distance. In addition, the LCD is protected by a tempered glass window.

### Backup battery

The built-in backup battery demonstrates the state of the valve and valve position on the display window for smooth manual operation even when the power supply is turned off. When manual operation is completed, the circuit is shut off automatically to conserve battery power. If the power is connected to the product or the power supply is interrupted and manual operation is not performed, the backup battery will not consume power, so the lifespan will last for an average of five years.



# SPECIFICATION

## Life Cycle

When operating on-off with rated torque, the minimum lifecycle is 30,000 cycles with Open/Close /Open cycle. This is based on the average of the maximum setting torque at the stroke end and 1/3 of the maximum setting torque during the stroke.

## Life Test

Lifetime test of standard product is based on 10,000 cycles with open/close/open as one cycle. It is based on the average value of 3/1 of the maximum setting torque at the stroke end (500,000 output rotation) and the maximum setting torque during stroke.

## Temperature

The possible operating temperature is -30°C to +70°C. Basically, the operating temperature must be within the temperature range indicated on the certificate. Same operating temperature as above for explosion-proof products (only NTI series).

## Load operation cycle

The load operation cycle of the motor is as follows :

- ON-OFF Rating : S2-15 / Minutes : 60 start/hr
- MODULATING rating : S4–30 / Minutes : 1200 start/hr

## Vibration

The vibration of the standard type product does not exceed the following standard values.

- **Equipment introduction**
  The cumulative vibration value in the 10-1,000 MHz frequency range is less than 1gms.
- **Impact**
  The maximum acceleration is 5g.
- **Earthquake**
  If the unit is still running after an accident or during an accident, the frequency range is 150Hz and acceleration is 2g. If structural integrity is required, this is 5g.

Separated control should be used where there is excessive vibration equipment. Alternatively, the product should be installed away from the valve, equipped with a vibration -absorbing coupling and operated by an extended shaft.

## Noise

Noise measurement does not exceed 61dB(A) within 1M.

## Material

All products of NTI, NTIT, and NTIR series are made of light and corrosion-resistant aluminum.

## Paint

Polyester powder coating is used and the body is RAL9006, which is light gray and RAL9005, the hand wheels and hand lever are black.

## Lubricant

The drive gear is filled with lubricant. Lubricant is used semi-permanently. while NTI and NTIT series use GL-5 75W/90, NTIR series use 0# semi-liquid grease and capacity are as follows.

| MODEL | CAPACITY |
|---|---|
| NTI-01 | 0.3 L |
| NTI-02 | |
| NTI-03 | |
| NTI-04 | 0.8 L |
| NTI-05 | |
| NTI-06 | 1.1 L |
| NTI-07 | 6.5 L |
| NTI-08 | 7.0 L |
| NTI-09 and NTI-09.1 | |
| NTI-10 and NTI-10G | |
| NTIT-01 | 1.5 L |
| NTIT-02 | |
| NTIT-03 | |
| NTIT-04 | |
| NTIT-05 | |
| NTIT-06 | |
| NTIR-200 | 400 g |
| NTIR-500 | |

# FUNCTION

**The NTI series has strong self-protection capability.**
**If incorrect operation is input by the user or abnormality is detected in the product, the NTI protects or corrects itself.**

### Torque detection function

If the valve is in a process that restricts obstruction or operation, the function detects when a torque greater than the existing setting value occurs.

### Torque switch bypass

When starting the motor or if the valve is stuck, stall torque of 1.4 - to 2-times higher than the rated torque of the product is provided.

### Foreign substance removal

If the torque switch bypass function does not resolve interference when the torque detection function is activated, stop operation of the product, reverse the direction by approximately 10%, and remove foreign matter using fluid pressure. Depending on user settings, this function can be set up to 10 times to protect the product from Anti-Hammer.

### Valve jammed protection

If the jam cannot be resolved by the foreign matter removal function, the command will not be implemented in the direction of the problem. Stop operation, display warning signals and real-time torque value on the display window to prevent valve damage.

### Auto-syncrophase

It has a function that distinguishes the phase circuit when power is supplied. Therefore, even if three-phase power is connected, it rotates accurately in the direction matching the control signal. This function prevents the product from damage due to incorrect wiring.

### Lost Phase

The phase correction circuit monitors the continuous supply of three-phase power and prevents overheating of the three-phase motor when open-phase occurs. If one or multiple phases is open-phase, it protects the product by preventing motor operation from the operation circuit and displays warning to prevent overheating and damage to the motor.

### Surge protector

It is the function to protect the main board from the external surge voltage which can flows through a terminal of the product by the built-in surge protector.

### Overheating of motor

There are two thermostats in the winding section of the motor to sense temperature. The thermostats interrupt the contact when the motor reaches a certain temperature during operation, stopping operation of the product and displaying a warning signal on the display or remotely reporting the status. When the motor has cooled, it will be reset automatically to be reactivated.

### Error detection

A function to help the user diagnose problems by automatically detecting error of internal control systems and displaying related information on the display window.

### Instantaneous reverse protection

If an instruction in the opposite direction is input when the product is rotating, the internal operating circuit will stop operation for 300ms before implementing this command. This technology reduces damage to the motor's overcurrent, extending the life of the reverse contactor and protecting mechanical devices, e.g. valve stem or gearbox, which can be damaged by impact.

### Position transmitter

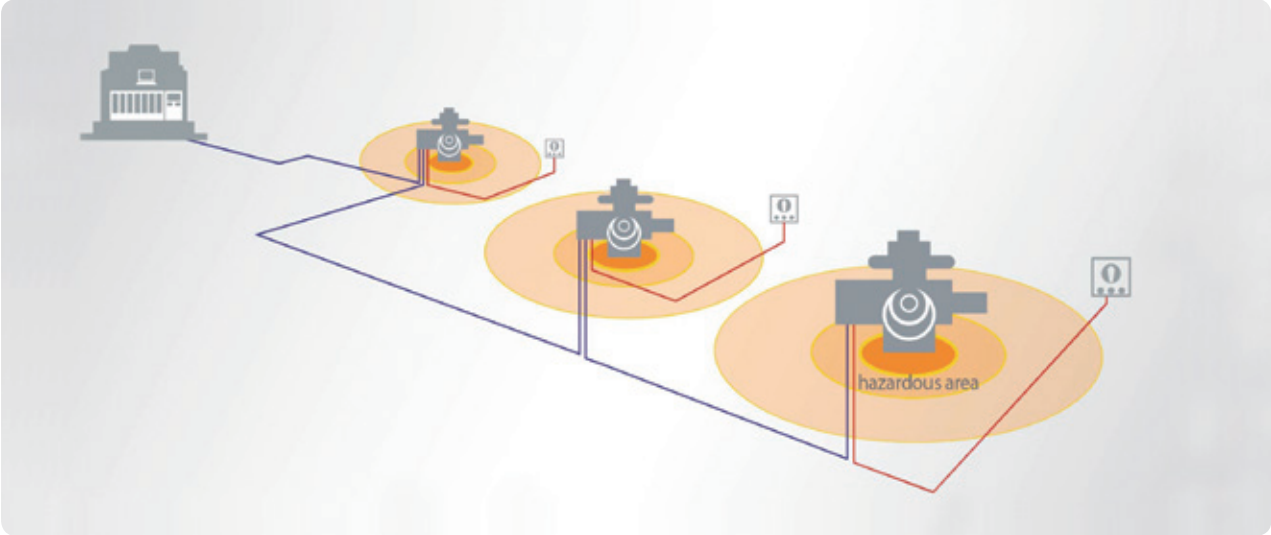
It has built-in function to output 4-20mA so that valve position can be checked accurately in the central control room.

### ESD

This function moves the valve to the safe position set by the user. This function takes precedence over other existing local and remote control signals.



# CONTACT & COMMUNICATION




## Indication & Monitoring Contacts

It has four contact points (eight contact points as an option) with contact capacities of 250VAC 5A and 30VDC 5A. All status contacts can be displayed as Normal Open and Normal Close according to user's request. Users can choose from 27 different functions including Full Open and Full Close, and protection or warning, all of which can easily be changed by remote control. Apart from the four status contacts, the monitoring contacts are 250VAC5A, 30VDC 5A and can effectively display electronic devices of the product. Monitor relay operate on phenomena, such as losing-phase, control power failure, selecting local control and selecting local stop.

## Analogue Modulating Control (Option)

Modulating controller automatically calculates product and valve position in proportion to the analog current or voltage signal. The input proportional control signal is transmitted to the modulating controller through a Liner Isolator. The controller converts the valve position signal to the proportional value by comparing the current valve position with the product position discrepancy. By adjusting the dead zone and running time control of the modulating controller, unnecessary reciprocating movement of the valve can be prevented.

## Fieldbus Control Function (Option)

The Fieldbus Mastering Control System is compatible with communication protocol. All products of NTI, NTIT, and NTIR series can add Modbus, Profibus and Foundation Fieldbus with the Fieldbus module.

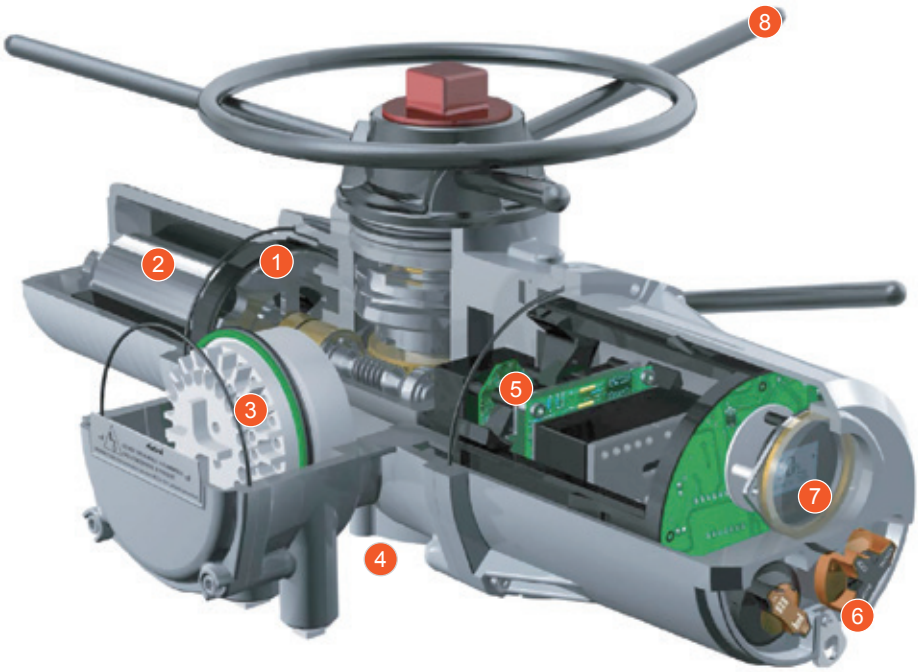
## Remote Indication of Valve Position

The Current Transmitter is a 4-20mA current delivery signal, and even the finest matching signals can change the position of the current valve by selecting Full Open or Full Close. In addition, the maximum external impedance value in the rated voltage is 500 Ω, and the error among the total stroke length is less than 1%.

| Analogue signal | Input impedance |
|---|---|
| 0-5mA | 1K |
| 0-10mA | 500 |
| 0-20mA | 250 |
| 4-20mA | 250 |
| 0-5V | 1M |
| 0-10V | 78K |
| 0-20V | 52K |

| Item | Trigger Conditions |
|---|---|
| 1 | In valve closing limit position |
| 2 | In valve opening limit position |
| 3 | Middle position |
| 4 | Torque protection is active when closing valve |
| 5 | Torque protection is active when opening valve |
| 6 | Torque protection is active during the stroke |
| 7 | Torque is a active at any position |
| 8 | Actuator is closing |
| 9 | Actuator is opening |
| 10 | Actuator is output rotating |
| 11 | Motor stalled protection |
| 12 | Low battery |
| 13 | Manual operation of actuator |
| 14 | Effective valve opening interlocking signal |
| 15 | Effective valve closing interlocking signal |
| 16 | Effective interlocking signal |
| 17 | Effective ESD signal |
| 18 | losing phase power |
| 19 | Selecting local stop |
| 20 | Selecting local control |
| 21 | Selecting remote control |
| 22 | Actuator alarm |
| 23 | 24V power failure |
| 24 | Motor running |
| 25 | Valve alarm |
| 26 | Temperature protection is active |
| 27 | Control alarm |

# NTI / NTIT INTERNAL STRUCTURE




### 1 Body
As the handwheel and center column are connected and rotated 1:1, the manual operation time is shortened, which is useful during urgent operations. Motor shafts and worm shafts are separated to allow quick and easy replacement. Worm gears and worm shafts are immersed in oil so that they are not affected by temperature changes.

### 2 Motor
The motor is a class F insulation grade, designed using special software to enable the product to operate normally under worst-case conditions. When the actuator is stop, the motor that outputs high torque with low inertia reaches maximum torque immediately upon starting and minimizes overrun. In addition, the built-in temperature sensor prevents tripping and fire damage if the motor overheats at a certain temperature (132°C).

### 3 Terminal Block
The terminal block consists of 48 connecting elements in a screw type. To protect the internal electronic components when the terminal block cover is opened for field wiring, it is designed as an independent double sealing structure.

### 4 Base
A thrust bearing on the base reduces all frictional forces to ensure the body is not affected. The NTI-06 and lower models and the NTIT series are equipped with a lubed, detachable type A base that allows the product to be removed without changing the position of the valve. The base of NTI-07 and above models is located inside the product. Therefore, the bush can easily be separated and processed.

### 5 PCB
The hole incremental encoder has been introduced to measure valve position, thereby improving accuracy of the existing potentiometer. This optical encoder is optional and accurately records valve position without a battery when the power is off.

**NTI Series**

It is used for multi-turn valves, e.g.globe valve, gate valve, and water gate and can also be used for part-turn valves in combination with a gear box. It is a smart product which has 30-3500Nm torque range.

**NTIT Series**

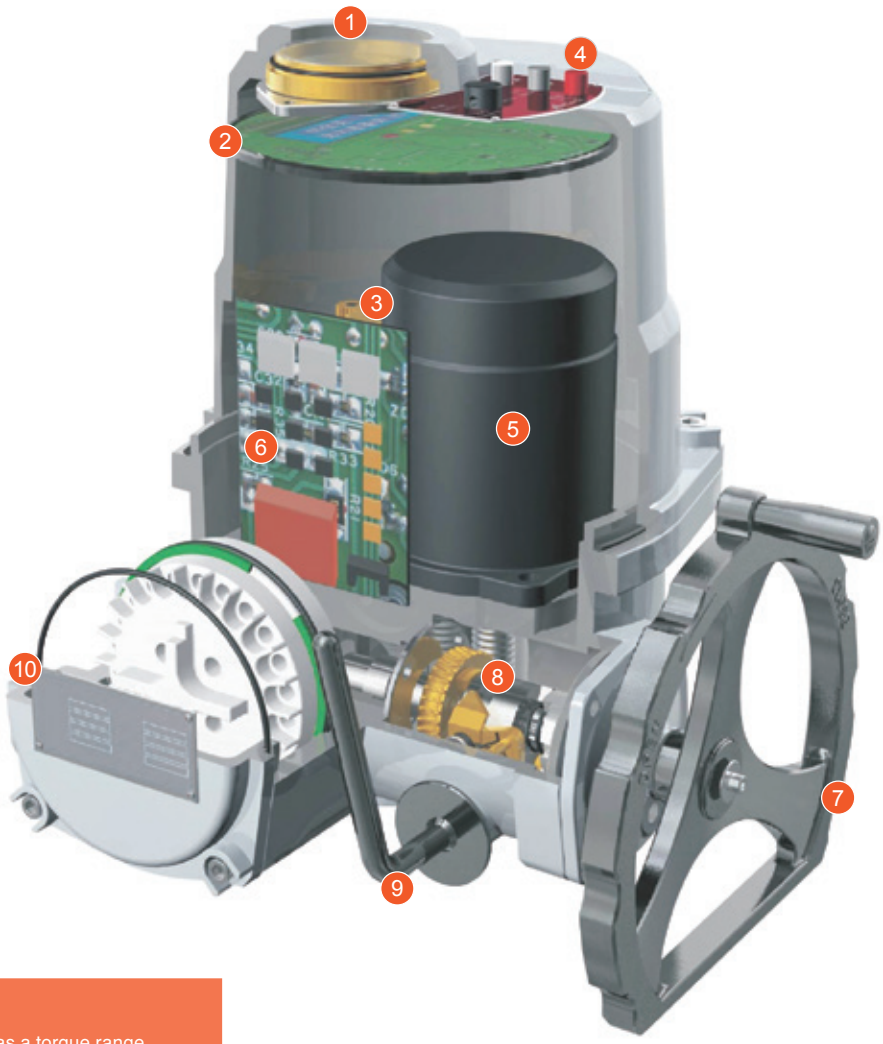
The product is for ball valves, butterfly valves, and other part-turn valves. Torque range is 100-2000Nm, with perfect functionality and reliable quality.

### 6 Local Control
The local control switch and operation switch are magnetic switches. Since moisture penetration is prevented through tight sealing, the product is controlled by the inner magnetic reed switch instead of fastening the switch shaft through the cover.

### 7 Display Window
The valve position change is indicated in the display window in 1% increments. The receiver is mounted in a sealed display window so you can diagnose and set the product without opening the cover with the infrared remote control. The operating distance of this remote control is 0.75M.

### 8 Manual Operation
The product can be operated manually in an emergency using the handwheel. Handwheel design is adopted as it is suitable for efficient manual operation and is designed to facilitate manual operation using the 'Hammer Blow effect' with a half-wheel clearance. It also includes a manual/automatic clutch, which is a locking device for safe operation even when the motor is running.

# NTIR INTERNAL STRUCTURE




**NTIR Series**

It is used for small part-turn valves and has a torque range of 50-500Nm, which features a sophisticated design and competitive price.

**1 Display Window**
The Dot Matrix LCD with a blue background shows the status screen clearly.

**2 Main board**
With the application of reliable SOC systems, the product detects faults and checks self-protection and information based on the circuit design that includes all functions.

**3 Valve position control**
A complete hole encoder operated by the main shaft precisely measures the valve position.

**4 Button**
Set various functions using four kinds of buttons, including control, opening, and closing.

**5 Motor**
High-power low inertia type F squirrel motor features enamel insulation and two temperature sensing switches.

**6 Power board**
The power board is equipped with electronic parts used for motor power supply and all other parts.

**7 Manual operation**
The handwheel used when the power supply is cut off is equipped with the NTIR-200 lever type or NTIR-500 circular type, depending on motor capacity, a clutch is included which is used when switching to manual operation.

**8 Worm and Worm shaft**
The two-stage worm gear with high gear ratio has low noise of up to 50dB and self-locking functionality.

**9 Base**
According to ISO 5211, bushings can be processed according to user requirements.

**10 Terminal block**
The double-sealing terminal block protects internal electronic components from external hazardous gases during field wiring.

# NTI PERFORMANCE DATA

## NTI SERIES (380V / 3Ph)

| Model | Flange (ISO 5210) | RPM | | Torque | Rated Current (A) | | Motor Rated Power(KW) | | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | | 50Hz | 60Hz | Nm | 50Hz | 60Hz | 50Hz | 60Hz | kg |
| NTI-01 | F10 | 18 | 21 | 45 | 1.47 | 1.53 | 0.47 | 0.55 | 32 |
| | | 24 | 29 | 45 | 1.48 | 1.55 | 0.50 | 0.56 | 32 |
| | | 36 | 43 | 35 | 1.50 | 1.57 | 0.51 | 0.57 | 32 |
| | | 48 | 57 | 35 | 1.60 | 1.60 | 0.52 | 0.58 | 32 |
| | | 72 | 86 | 35 | 1.90 | 1.86 | 0.85 | 0.86 | 32 |
| | | 96 | 115 | 30 | 2.00 | 2.05 | 0.87 | 0.89 | 32 |
| NTI-02 | F10 | 18 | 21 | 80 | 1.66 | 1.70 | 0.53 | 0.60 | 32 |
| | | 24 | 29 | 80 | 1.70 | 1.73 | 0.54 | 0.61 | 32 |
| | | 36 | 43 | 80 | 1.72 | 1.77 | 0.55 | 0.63 | 32 |
| | | 48 | 57 | 80 | 1.75 | 1.82 | 0.55 | 0.64 | 32 |
| | | 72 | 86 | 45 | 2.20 | 2.30 | 0.92 | 1.00 | 32 |
| | | 96 | 115 | 40 | 2.30 | 2.35 | 0.93 | 1.06 | 32 |
| NTI-03 | F10 | 18 | 21 | 110 | 1.86 | 1.85 | 0.60 | 0.63 | 32 |
| | | 24 | 29 | 110 | 1.95 | 1.92 | 0.62 | 0.65 | 32 |
| NTI-04 | F14 | 18 | 21 | 250 | 3.90 | 3.95 | 1.75 | 1.82 | 52 |
| | | 24 | 29 | 250 | 4.10 | 4.15 | 1.80 | 1.85 | 52 |
| | | 36 | 43 | 205 | 4.20 | 4.24 | 1.84 | 1.95 | 52 |
| | | 48 | 57 | 205 | 4.30 | 4.36 | 1.90 | 1.97 | 52 |
| | | 72 | 86 | 160 | 3.00 | 3.50 | 1.70 | 1.80 | 52 |
| | | 96 | 115 | 145 | 3.10 | 3.60 | 1.72 | 1.85 | 52 |
| | | 144 | 173 | 100 | 5.20 | 5.40 | 2.50 | 2.56 | 52 |
| NTI-05 | F14 | 18 | 21 | 450 | 5.40 | 5.50 | 1.96 | 2.02 | 52 |
| | | 24 | 29 | 450 | 5.50 | 5.60 | 2.00 | 2.09 | 52 |
| | | 36 | 43 | 300 | 5.60 | 5.80 | 2.05 | 2.11 | 52 |
| | | 48 | 57 | 240 | 5.90 | 6.10 | 2.12 | 2.20 | 52 |
| | | 72 | 86 | 240 | 5.70 | 6.00 | 2.25 | 2.48 | 52 |
| | | 96 | 115 | 230 | 6.60 | 8.00 | 2.60 | 3.30 | 52 |
| | | 144 | 173 | 150 | 6.30 | 6.60 | 2.90 | 3.00 | 52 |
| NTI-06 | F16 | 18 | 21 | 650 | 7.20 | 7.50 | 3.00 | 3.20 | 75 |
| | | 24 | 29 | 650 | 7.60 | 7.80 | 3.20 | 3.40 | 75 |
| | | 36 | 43 | 542 | 7.74 | 8.00 | 3.32 | 3.50 | 75 |
| | | 48 | 57 | 450 | 13.50 | 14.60 | 5.06 | 5.12 | 75 |
| | | 72 | 86 | 450 | 12.50 | 12.80 | 4.92 | 4.90 | 75 |
| | | 96 | 115 | 365 | 13.20 | 13.50 | 4.98 | 4.91 | 75 |
| | | 144 | 173 | 270 | 13.00 | 14.50 | 4.96 | 5.11 | 75 |
| NTI-07 | F25 | 18 | 21 | 1100 | 11.00 | 11.50 | 5.20 | 5.30 | 200 |
| | | 24 | 29 | 1100 | 12.00 | 12.60 | 5.30 | 5.40 | 200 |
| | | 36 | 43 | 780 | 12.30 | 13.00 | 5.35 | 5.46 | 200 |
| | | 48 | 57 | 680 | 15.80 | 16.50 | 7.50 | 8.20 | 200 |
| | | 72 | 86 | 550 | 16.60 | 17.30 | 8.10 | 8.60 | 200 |
| | | 96 | 115 | 550 | 17.80 | 18.20 | 8.70 | 9.10 | 200 |
| NTI-08 | F30 | 18 | 21 | 1500 | 10.50 | 11.50 | 5.70 | 5.90 | 230 |
| | | 24 | 29 | 1500 | 12.60 | 13.80 | 6.00 | 6.80 | 230 |
| | | 36 | 43 | 1300 | 13.80 | 15.00 | 6.80 | 7.30 | 230 |
| | | 48 | 57 | 1000 | 19.00 | 20.00 | 9.48 | 9.67 | 230 |
| | | 72 | 86 | 800 | 19.50 | 21.00 | 9.60 | 9.88 | 230 |
| | | 96 | 115 | 745 | 21.00 | 22.00 | 9.95 | 10.00 | 230 |
| NTI-09 | F30 | 18 | 21 | 2000 | 18.50 | 19.50 | 8.50 | 9.50 | 230 |
| | | 24 | 29 | 2000 | 20.00 | 21.00 | 9.60 | 9.80 | 230 |
| | | 36 | 43 | 1700 | 22.00 | 23.00 | 10.00 | 11.00 | 230 |
| | | 48 | 57 | 1350 | 21.00 | 22.00 | 9.70 | 10.00 | 230 |
| | | 72 | 86 | 1100 | 23.00 | 24.00 | 11.00 | 11.20 | 230 |
| | | 96 | 115 | 1000 | 25.00 | 26.00 | 11.60 | 12.20 | 230 |
| NTI-09.1 | F30 | 24 | 29 | 2500 | 25.00 | 26.00 | 13.00 | 12.60 | 230 |
| | | 36 | 43 | 2500 | 26.00 | 26.50 | 13.60 | 12.80 | 230 |
| NTI-10 | F30 | 24 | 21 | 3000 | 29.00 | 33.00 | 14.00 | 14.50 | 230 |
| NTI-10G | F30 | 18 | 21 | 3500 | 30.00 | 34.00 | 14.20 | 14.90 | 230 |
| | | 24 | 29 | 3500 | 32.00 | 36.00 | 14.50 | 15.80 | 230 |
| | | 36 | 43 | 2000 | 29.00 | 32.00 | 13.80 | 14.20 | 230 |
| | | 48 | 57 | 1600 | 31.00 | 33.00 | 15.00 | 16.80 | 230 |
| | | 72 | 86 | 1400 | 32.00 | 34.00 | 15.60 | 17.30 | 230 |
| | | 96 | 115 | 1200 | 33.00 | 35.00 | 16.20 | 18.00 | 230 |

# NTI PERFORMANCE DATA

## NTIM SERIES (380V / 3Ph)

| Model | | RPM | | Torque (Nm) | | Rated Current (A) | | Motor Rated Power (KW) | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | kg |
| NTIM-02 | F10 | 18 | 21 | 50 | 50 | 1.46 | 1.52 | 0.46 | 0.49 | 32 |
| | | 24 | 29 | 50 | 50 | 1.50 | 1.58 | 0.48 | 0.52 | 32 |
| | | 36 | 43 | 50 | 50 | 1.53 | 1.62 | 0.49 | 0.54 | 32 |
| | | 48 | 57 | 40 | 40 | 1.60 | 1.71 | 0.50 | 0.58 | 32 |
| | | 72 | 86 | 25 | 25 | 2.00 | 2.10 | 0.78 | 0.92 | 32 |
| NTIM-03 | | 18 | 21 | 90 | 90 | 1.65 | 1.62 | 0.55 | 0.56 | 32 |
| | | 24 | 29 | 90 | 90 | 1.68 | 1.75 | 0.57 | 0.62 | 32 |
| NTIM-04 | F14 | 18 | 21 | 180 | 180 | 3.50 | 3.80 | 1.82 | 1.83 | 52 |
| | | 24 | 29 | 180 | 180 | 3.75 | 3.96 | 1.88 | 1.86 | 52 |
| | | 36 | 43 | 125 | 125 | 3.90 | 4.17 | 1.92 | 1.92 | 52 |
| | | 48 | 57 | 125 | 125 | 4.00 | 4.25 | 1.96 | 1.98 | 52 |
| | | 72 | 86 | 80 | 80 | 3.00 | 3.30 | 1.80 | 1.78 | 52 |
| NTIM-05 | | 18 | 21 | 360 | 360 | 4.00 | 4.10 | 1.95 | 1.90 | 52 |
| | | 24 | 29 | 360 | 360 | 4.10 | 4.16 | 2.06 | 1.98 | 52 |
| | | 36 | 43 | 240 | 240 | 4.18 | 4.23 | 2.12 | 2.04 | 52 |
| | | 48 | 57 | 200 | 200 | 4.26 | 4.41 | 2.24 | 2.08 | 52 |
| | | 72 | 86 | 140 | 140 | 4.50 | 4.80 | 2.42 | 2.30 | 52 |
| NTIM-06 | F16 | 18 | 21 | 600 | 480 | 7.80 | 6.20 | 3.30 | 3.06 | 75 |
| | | 24 | 29 | 600 | 480 | 8.30 | 6.40 | 3.34 | 3.15 | 75 |
| | | 36 | 43 | 300 | 300 | 6.50 | 6.80 | 3.36 | 3.24 | 75 |
| | | 48 | 57 | 260 | 260 | 6.30 | 6.60 | 3.34 | 3.32 | 75 |
| | | 72 | 86 | 220 | 220 | 6.50 | 6.90 | 3.45 | 3.49 | 75 |

## NTI SERIES (220V / 1Ph)

| Model | | RPM | | Torque | Rated Current (A) | | Actuator Rated Power (KW) | | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | | 50Hz | 60Hz | Nm | 50Hz | 60Hz | 50Hz | 60Hz | kg |
| NTI-03 | F10 | 18 | 21 | 65 | 2.30 | 2.10 | 0.35 | 0.37 | 32 |
| | | 24 | 29 | 60 | 2.30 | 2.10 | 0.35 | 0.37 | 32 |
| NTI-04 | F14 | 18 | 21 | 165 | 6.70 | 7.50 | 0.90 | 1.10 | 52 |
| | | 24 | 29 | 140 | 6.70 | 7.50 | 0.90 | 1.10 | 52 |
| | | 36 | 43 | 120 | 6.70 | 7.50 | 0.90 | 1.10 | 52 |
| | | 48 | 57 | 70 | 6.70 | 7.50 | 0.90 | 1.10 | 52 |
| | | 72 | 86 | 60 | 9.00 | 9.80 | 1.40 | 1.60 | 52 |
| | | 96 | 115 | 50 | 9.00 | 9.80 | 1.40 | 1.60 | 52 |
| NTI-05 | | 18 | 21 | 200 | 8.00 | 8.30 | 1.20 | 1.30 | 52 |
| | | 24 | 29 | 200 | 8.00 | 8.30 | 1.20 | 1.30 | 52 |
| | | 36 | 43 | 150 | 8.00 | 8.30 | 1.20 | 1.30 | 52 |
| | | 48 | 57 | 80 | 8.00 | 8.30 | 1.20 | 1.30 | 52 |
| | | 72 | 86 | 70 | 11.50 | 12.70 | 1.60 | 1.90 | 52 |
| | | 96 | 115 | 60 | 11.50 | 12.70 | 1.60 | 1.90 | 52 |
| NTIM-06 | F16 | 18 | 21 | 400 | 12.60 | 14.00 | 2.00 | 2.25 | 75 |
| | | 24 | 29 | 350 | 12.60 | 14.00 | 2.00 | 2.25 | 75 |
| | | 36 | 43 | 300 | 12.60 | 14.00 | 2.00 | 2.25 | 75 |
| | | 48 | 57 | 270 | 12.60 | 14.00 | 2.00 | 2.25 | 75 |
| | | 72 | 86 | 200 | 16.00 | 19.00 | 2.60 | 2.80 | 75 |
| | | 96 | 115 | 170 | 16.00 | 19.00 | 2.60 | 2.80 | 75 |

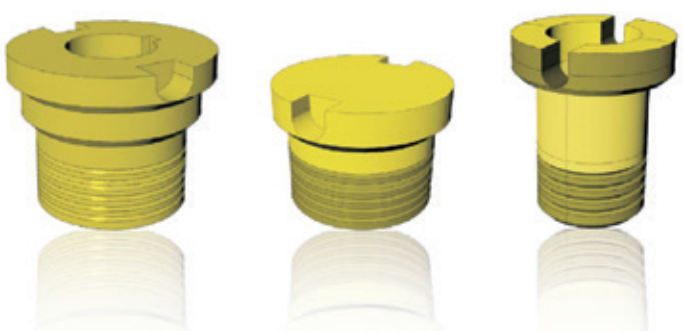
## NTIM SERIES (220V / 1Ph)

| Model | | RPM | | Torque | Rated Current (A) | | Motor Rated Power (KW) | | Weight |
|---|---|---|---|---|---|---|---|---|---|
| | | 50Hz | 60Hz | Nm | 50Hz | 60Hz | 50Hz | 60Hz | kg |
| NTIM-03 | F10 | 18 | 21 | 40 | 1.80 | 1.90 | 0.34 | 0.35 | 32 |
| | | 24 | 29 | 40 | 1.80 | 1.90 | 0.34 | 0.35 | 32 |
| NTIM-04 | F14 | 18 | 21 | 100 | 6.40 | 7.30 | 0.92 | 1.05 | 52 |
| | | 24 | 29 | 85 | 6.40 | 7.30 | 0.92 | 1.05 | 52 |
| | | 36 | 43 | 70 | 6.40 | 7.30 | 0.92 | 1.05 | 52 |
| | | 48 | 57 | 50 | 6.40 | 7.30 | 0.92 | 1.05 | 52 |
| | | 72 | 86 | 40 | 8.20 | 10.00 | 1.43 | 1.65 | 52 |
| NTIM-05 | | 18 | 21 | 120 | 7.20 | 7.60 | 1.24 | 1.32 | 52 |
| | | 24 | 29 | 120 | 7.20 | 7.60 | 1.24 | 1.32 | 52 |
| | | 36 | 43 | 90 | 7.20 | 7.60 | 1.24 | 1.32 | 52 |
| | | 48 | 57 | 60 | 7.20 | 7.60 | 1.24 | 1.32 | 52 |
| | | 72 | 86 | 50 | 9.60 | 11.00 | 1.63 | 1.73 | 52 |
| NTIM-06 | F16 | 18 | 21 | 240 | 11.30 | 13.00 | 2.23 | 2.30 | 75 |
| | | 24 | 29 | 210 | 11.30 | 13.00 | 2.23 | 2.30 | 75 |
| | | 36 | 43 | 180 | 11.30 | 13.00 | 2.23 | 2.30 | 75 |
| | | 48 | 57 | 160 | 14.50 | 18.00 | 2.67 | 2.85 | 75 |
| | | 72 | 86 | 140 | 14.50 | 18.00 | 2.67 | 2.85 | 75 |

## Mechanical Interface Size

| Model | | | NTI - 01/02/03 | NTI - 04/05 | NTI - 06 | NTI-07 NTI-08 NTI-09 NTI-09.1 NTI-10 NTI-10G | |
|---|---|---|---|---|---|---|---|
| Flange | ISO 5210 | | F10 | F14 | F16 | F25 | F30 |
| | Mss sp-102 | | FA10 | FA14 | FA16 | FA25 | FA30 |
| STEM ACCEPTANCE DIAMETER | | | | | | | |
| A Type | Rising | mm | 32 | 38 | 54 | 70 | 83 |
| | Non-rising | mm | 26 | 32 | 45 | 60 | 73 |
| Z Type | Rising | mm | - | 51 | 67 | - | - |
| | Non-rising | mm | - | 38 | 51 | - | - |
| B4 Type | Non-rising | mm | 26 | 32 | 45 | 60 | 73 |

| Model | | NTIT - 01 | NTIT - 02 | NTIT - 03 | NTIT - 04 / 05 | NTIT - 06 | NTIR - 200 | NTIR - 500 |
|---|---|---|---|---|---|---|---|---|
| Flange | ISO 5210 | F07 | F07 / F10 | F10 | F12 / F14 | F14 | F05 / F07 | F07 / F10 |
| | Mss sp-102 | FA07 | FA07 / FA10 | FA10 | FA12 / FA14 | FA14 | FA05 / FA07 | FA07 / FA10 |
| STEM ACCEPTANCE DIAMETER | | | | | | | | |
| Key | mm | 28 | 28 / 42 | 42 | 50 / 60 | 60 | 22 | 33 |
| Square | mm | 19 | 19 / 27 | 27 | 32 / 36 | 36 | 15 | 23 |



# NTIT PERFORMANCE DATA

## NTIT SERIES (380V / 3Ph)

| Model | | Stem Dia (mm) | | 90°time (s) | | Torque | Rated Current (A) | | Motor Rated Power (KW) | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Key | Square | 50Hz | 60Hz | Nm | 50Hz | 60Hz | 50Hz | 60Hz | kg |
| NTIT-01 | F07 | 28 | 19 | 18-20 | 16-18 | 125 | 0.47 | 0.50 | 0.13 | 0.17 | 24 |
| NTIT-02 | F07 | 28 | 19 | 18-20 | 16-18 | 250 | 0.49 | 0.56 | 0.13 | 0.17 | 24 |
| | F10 | 42 | 27 | 18-20 | 16-18 | 250 | 0.49 | 0.56 | 0.13 | 0.17 | 24 |
| NTIT-03 | F10 | 42 | 27 | 26-30 | 19-22 | 500 | 0.53 | 0.59 | 0.14 | 0.18 | 35 |
| NTIT-04 | F12 | 50 | 32 | 27-30 | 23-26 | 1000 | 0.56 | 0.62 | 0.14 | 0.18 | 35 |
| | F14 | 60 | 36 | 27-30 | 23-26 | 1000 | 0.56 | 0.62 | 0.14 | 0.18 | 35 |
| NTIT-05 | F12 | 50 | 32 | 46-50 | 42-45 | 1500 | 0.60 | 0.65 | 0.15 | 0.19 | 35 |
| | F14 | 60 | 36 | 46-50 | 42-45 | 1500 | 0.60 | 0.65 | 0.15 | 0.19 | 35 |
| NTIT-06 | F14 | 60 | 36 | 58-60 | 45-50 | 2000 | 0.62 | 0.69 | 0.15 | 0.19 | 35 |

## NTITM SERIES (380V / 3Ph)

| Model | | Stem Dia (mm) | | 90°time (s) | | Torque | Rated Current (A) | | Motor Rated Power (KW) | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Key | Square | 50Hz | 60Hz | Nm | 50Hz | 60Hz | 50Hz | 60Hz | kg |
| NTIT-01 | F07 | 28 | 19 | 18-20 | 16-18 | 125 | 0.42 | 0.45 | 0.12 | 0.16 | 24 |
| NTIT-02 | F07 | 28 | 19 | 18-20 | 16-18 | 215 | 0.45 | 0.48 | 0.12 | 0.16 | 24 |
| | F10 | 42 | 27 | 18-20 | 16-18 | 215 | 0.45 | 0.48 | 0.12 | 0.16 | 24 |
| NTIT-03 | F10 | 42 | 27 | 26-30 | 19-22 | 300 | 0.50 | 0.53 | 0.13 | 0.17 | 35 |
| NTIT-04 | F12 | 50 | 32 | 38-40 | 23-26 | 700 | 0.53 | 0.58 | 0.13 | 0.17 | 35 |
| | F14 | 60 | 36 | 38-40 | 23-26 | 700 | 0.53 | 0.58 | 0.13 | 0.17 | 35 |
| NTIT-05 | F12 | 50 | 32 | 46-50 | 42-45 | 1100 | 0.57 | 0.61 | 0.14 | 0.18 | 35 |
| | F14 | 60 | 36 | 46-50 | 42-45 | 1100 | 0.57 | 0.61 | 0.14 | 0.18 | 35 |
| NTIT-06 | F14 | 60 | 36 | 58-60 | 45-50 | 1500 | 0.60 | 0.66 | 0.14 | 0.18 | 35 |

## NTIT SERIES (220V / 1Ph)

| Model | | Stem Dia (mm) | | 90°time (s) | | Torque | Rated Current (A) | | Motor Rated Power (KW) | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Key | Square | 50Hz | 60Hz | Nm | 50Hz | 60Hz | 50Hz | 60Hz | kg |
| NTIT-01 | F07 | 28 | 19 | 14-16 | 13-15 | 100 | 1.60 | 1.70 | 0.25 | 0.26 | 24 |
| NTIT-02 | F07 | 28 | 19 | 18-20 | 16-18 | 200 | 1.60 | 1.70 | 0.25 | 0.26 | 24 |
| | F10 | 42 | 27 | 18-20 | 16-18 | 200 | 1.60 | 1.70 | 0.25 | 0.26 | 24 |
| NTIT-03 | F10 | 42 | 27 | 18-20 | 16-18 | 400 | 1.86 | 1.98 | 0.28 | 0.30 | 35 |
| NTIT-04 | F12 | 50 | 32 | 25-30 | 19-22 | 800 | 1.86 | 1.98 | 0.28 | 0.30 | 35 |
| | F14 | 60 | 36 | 25-30 | 19-22 | 800 | 1.86 | 1.98 | 0.28 | 0.30 | 35 |
| NTIT-05 | F12 | 50 | 32 | 27-30 | 23-26 | 1200 | 1.70 | 1.92 | 0.27 | 0.29 | 35 |
| | F14 | 60 | 36 | 27-30 | 23-26 | 1200 | 1.70 | 1.92 | 0.27 | 0.29 | 35 |
| NTIT-06 | F14 | 60 | 36 | 58-62 | 45-50 | 1600 | 1.70 | 1.92 | 0.27 | 0.29 | 35 |

## NTIM SERIES (220V / 1Ph)

| Model | | Stem Dia (mm) | | 90°time (s) | | Torque | Rated Current (A) | | Motor Rated Power (KW) | | Weight |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Key | Square | 50Hz | 60Hz | Nm | 50Hz | 60Hz | 50Hz | 60Hz | kg |
| NTIT-01 | F07 | 28 | 19 | 14-16 | 13-15 | 100 | 1.50 | 1.65 | 0.26 | 0.27 | 24 |
| NTIT-02 | F07 | 28 | 19 | 18-20 | 16-18 | 150 | 1.50 | 1.65 | 0.26 | 0.27 | 24 |
| | F10 | 42 | 27 | 18-20 | 16-18 | 150 | 1.50 | 1.65 | 0.26 | 0.27 | 24 |
| NTIT-03 | F10 | 42 | 27 | 18-20 | 16-18 | 200 | 1.70 | 1.85 | 0.28 | 0.30 | 35 |
| NTIT-04 | F12 | 50 | 32 | 25-30 | 19-22 | 600 | 1.70 | 1.85 | 0.28 | 0.30 | 35 |
| | F14 | 60 | 36 | 25-30 | 19-22 | 600 | 1.70 | 1.85 | 0.28 | 0.30 | 35 |
| NTIT-05 | F12 | 50 | 32 | 27-30 | 23-26 | 1000 | 1.60 | 1.76 | 0.27 | 0.29 | 35 |
| | F14 | 60 | 36 | 27-30 | 23-26 | 1000 | 1.60 | 1.76 | 0.27 | 0.29 | 35 |
| NTIT-06 | F14 | 60 | 36 | 58-62 | 45-50 | 1300 | 1.60 | 1.76 | 0.27 | 0.29 | 35 |

## NTIR SERIES (380V / 3Ph)

| Model | | Flange (ISO 5211) | Time (S) | | Torque | Motor Poles | Rated Current (A) | | Starting Current (A) | | Motor Rated Power (KW) | | Power Factor | | Efficiency (%) | | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 50Hz | 60Hz | Nm | | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | |
| NTIR - 200 | NTIR-05 | F05 / F07 | 20 | 17 | 50 | 4 | 0.50 | 0.51 | 1.6 | 1.5 | 0.16 | 0.16 | 0.83 | 0.72 | 57 | 67 | 14 |
| | NTIR-10 | | | | 100 | | 0.53 | 0.54 | | | 0.16 | 0.16 | | | | | |
| | NTIR-15 | | | | 150 | | 0.56 | 0.58 | | | 0.17 | 0.17 | | | | | |
| | NTIR-20 | | | | 200 | | 0.62 | 0.63 | | | 0.17 | 0.17 | | | | | |
| NTIR - 500 | NTIR-30 | F07 / F10 | 30 | 26 | 300 | | 1.03 | 0.95 | 2.2 | 1.9 | 0.30 | 0.29 | 0.74 | 0.75 | 61 | 64 | 17 |
| | NTIR-40 | | | | 400 | | 1.08 | 1.02 | | | 0.30 | 0.29 | | | | | |
| | NTIR-50 | | | | 500 | | 1.12 | 1.12 | | | 0.31 | 0.29 | | | | | |

## NTIRM SERIES (380V / 3Ph)

| Model | | Flange (ISO 5211) | Time (S) | | Torque | Motor Poles | Rated Current (A) | | Starting Current (A) | | Motor Rated Power (KW) | | Power Factor | | Efficiency (%) | | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 50Hz | 60Hz | Nm | | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | |
| NTIRM - 200 | NTIRM-05 | F05 / F07 | 20 | 17 | 50 | 4 | 0.48 | 0.50 | 1.5 | 1.4 | 0.14 | 0.15 | 0.80 | 0.74 | 60 | 68 | 14 |
| | NTIRM-10 | | | | 75 | | 0.50 | 0.52 | | | 0.14 | | | | | | |
| | NTIRM-15 | | | | 100 | | 0.52 | 0.55 | | | 0.15 | | | | | | |
| | NTIRM-20 | | | | 140 | | 0.56 | 0.60 | | | 0.15 | | | | | | |
| NTIRM - 500 | NTIRM-30 | F07 / F10 | 30 | 26 | 180 | | 0.92 | 0.86 | 2.1 | 1.8 | 0.29 | 0.28 | 0.75 | 0.78 | 63 | 65 | 17 |
| | NTIRM-40 | | | | 240 | | 0.96 | 0.93 | | | 0.29 | | | | | | |
| | NTIRM-50 | | | | 300 | | 1.02 | 1.05 | | | 0.30 | | | | | | |

## NTIR SERIES (220V / 1Ph)

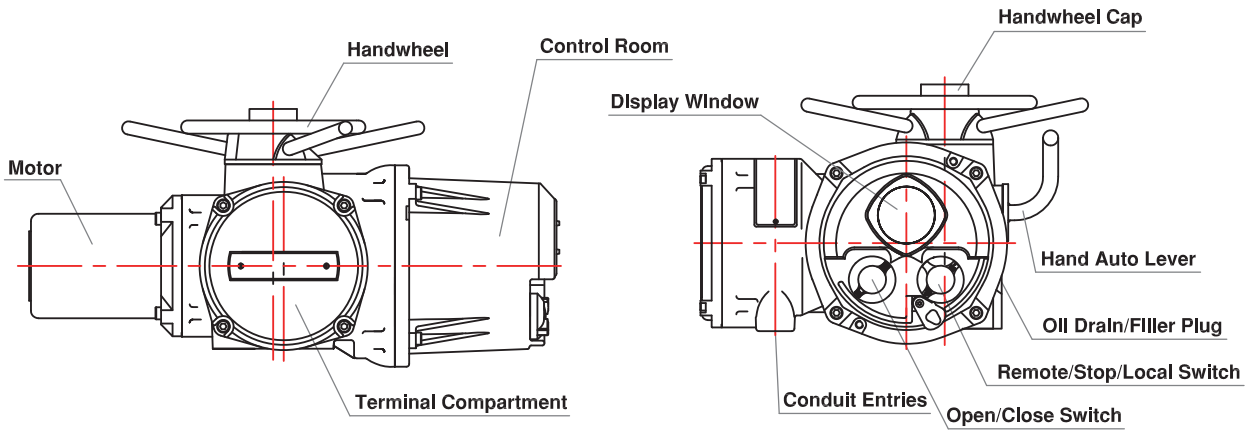
| Model | | Flange (ISO 5211) | Time (S) | | Torque | Motor Poles | Rated Current (A) | | Starting Current (A) | | Motor Rated Power (KW) | | Power Factor | | Efficiency (%) | | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 50Hz | 60Hz | Nm | | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | |
| NTIR - 200 | NTIR-05 | F05 / F07 | 20 | 17 | 40 | 4 | 0.86 | 0.90 | 1.20 | 1.10 | 0.10 | 0.12 | 0.96 | 0.94 | 52 | 70 | 14 |
| | NTIR-10 | | | | 60 | | | | | | | | | | | | |
| | NTIR-15 | | | | 80 | | | | | | | | | | | | |
| | NTIR-20 | | | | 100 | | | | | | | | | | | | |
| NTIR - 500 | NTIR-30 | F07 / F10 | 30 | 26 | 150 | | 1.30 | 1.50 | 2.20 | 2.10 | 0.17 | 0.20 | 0.96 | 0.93 | 58 | 62 | 17 |
| | NTIR-40 | | | | 175 | | | | | | | | | | | | |
| | NTIR-50 | | | | 220 | | | | | | | | | | | | |

## NTIRM SERIES (220V / 1Ph)

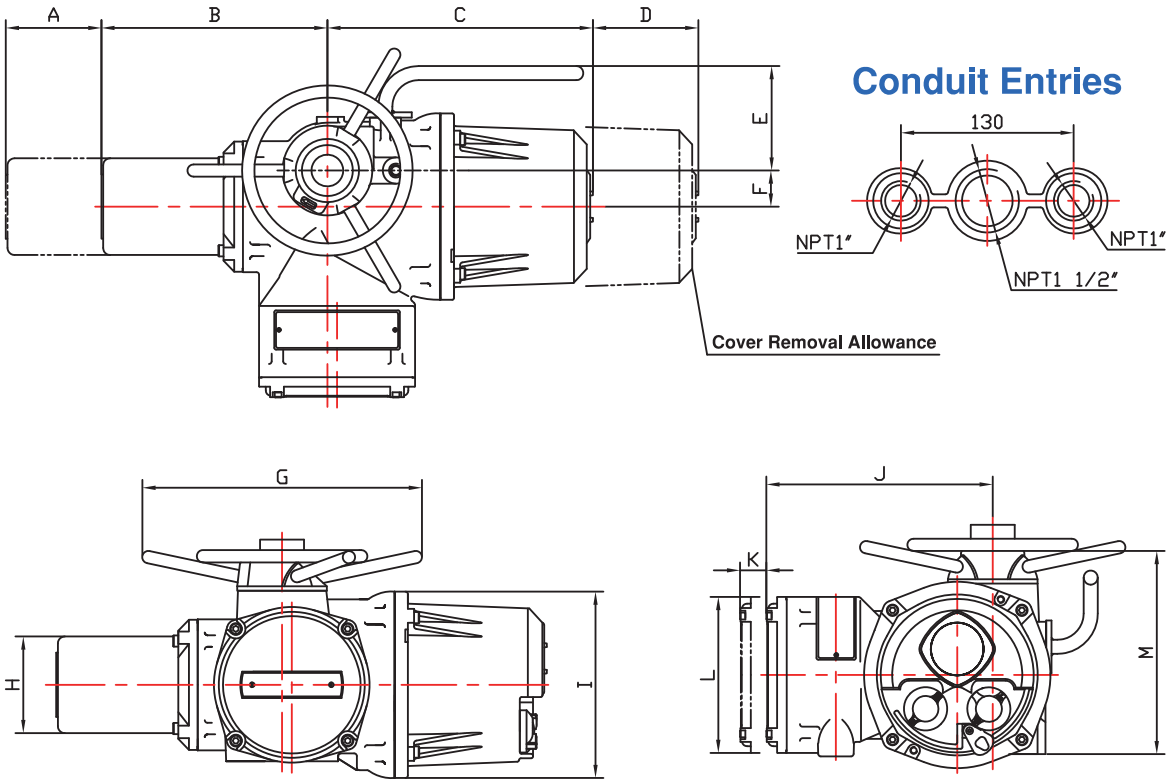
| Model | | Flange (ISO 5211) | Time (S) | | Torque | Motor Poles | Rated Current (A) | | Starting Current (A) | | Motor Rated Power (KW) | | Power Factor | | Efficiency(%) | | Weight (kg) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 50Hz | 60Hz | Nm | | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | 50Hz | 60Hz | |
| NTIRM - 200 | NTIRM-05 | F05 / F07 | 20 | 17 | 30 | 4 | 0.76 | 0.82 | 1.10 | 1.00 | 0.11 | 0.12 | 0.97 | 0.95 | 68 | 71 | 14 |
| | NTIRM-10 | | | | 40 | | | | | | | | | | | | |
| | NTIRM-15 | | | | 55 | | | | | | | | | | | | |
| | NTIRM-20 | | | | 70 | | | | | | | | | | | | |
| NTIRM - 500 | NTIRM-30 | F07 / F10 | 30 | 26 | 100 | | 1.22 | 1.35 | 2.00 | 1.90 | 0.16 | 0.17 | 0.95 | 0.93 | 63 | 64 | 17 |
| | NTIRM-40 | | | | 140 | | | | | | | | | | | | |
| | NTIRM-50 | | | | 180 | | | | | | | | | | | | |

# NTI DIMENSION

## NTI SERIES EACH PART AND NAME

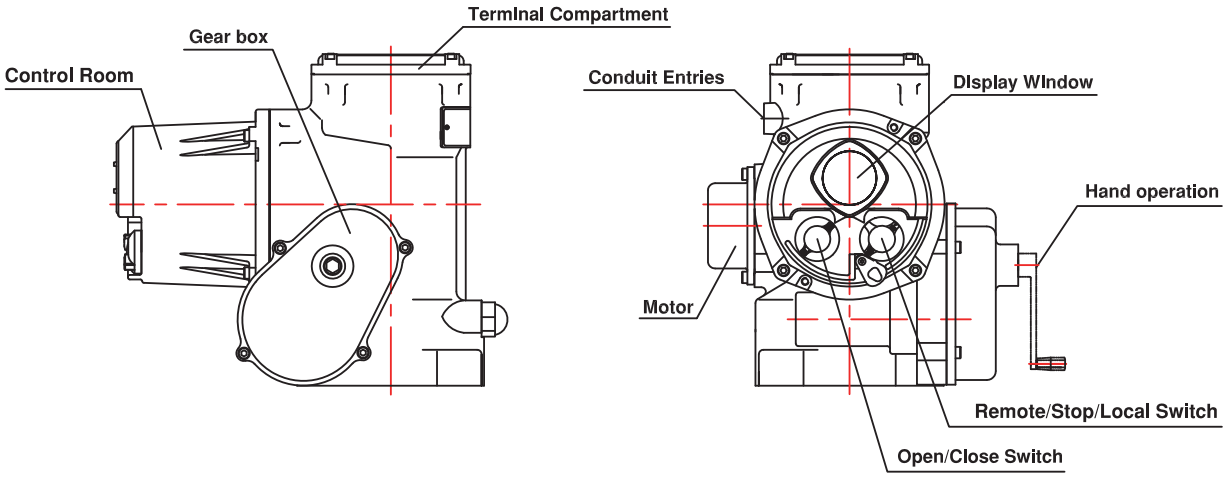



## NTI SERIES DIMENSIONS

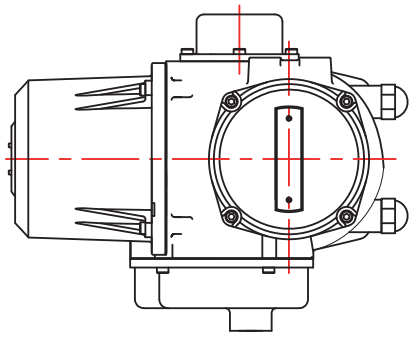



| Specification \ Parameter | A | B | C | D | E | F | ØG | ØH | ØI | J | K | ØL | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NTI-01 / 02 / 03 | 165 | 250 | 300 | 200 | 119 | 41 | 357 | 104 | 212 | 250 | 30 | 177 | 240 |
| NTI-04 / 05 | 230 | 350 | 330 | 200 | 150 | 40 | 542 | 125 | 212 | 270 | 30 | 177 | 275 |
| NTI-06 | 247 | 352 | 401 | 230 | 119 | 42 | 793 | 145 | 212 | 301 | 30 | 177 | 353 |

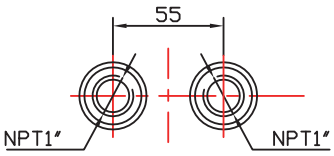
## NTIT SERIES EACH PART AND NAME

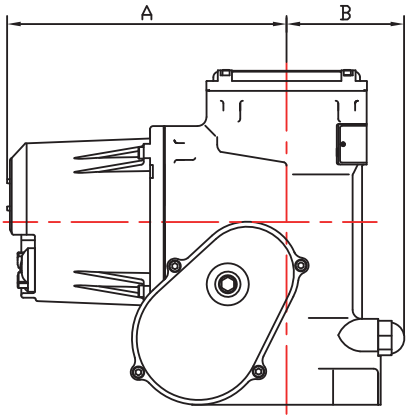


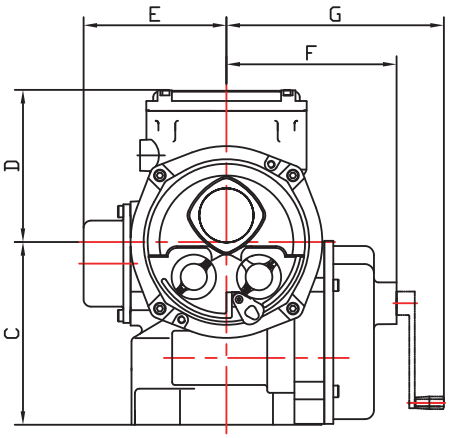

## NTIT SERIES DIMENSIONS



### Conduit Entries



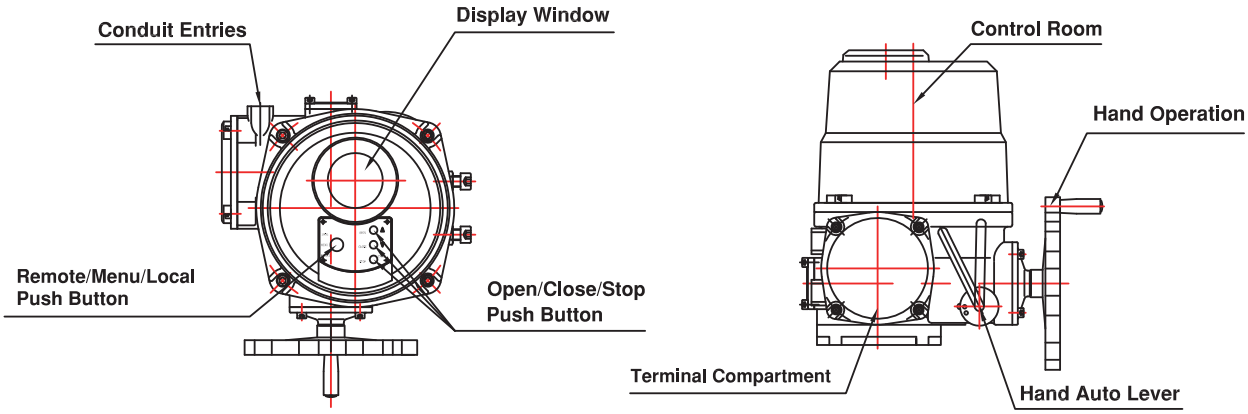



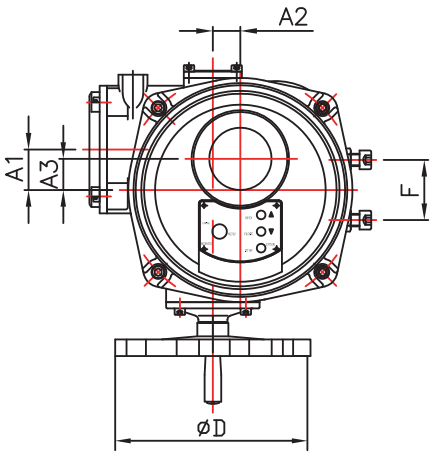

| Specification \ Parameter | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| NTIT - 01 / 02 | 308 | 110 | 146 | 162 | 158 | 160 | 210 |
| NTIT - 03 / 04 / 05 / 06 / 07 | 380 | 135 | 202 | 168 | 158 | 188 | 275 |

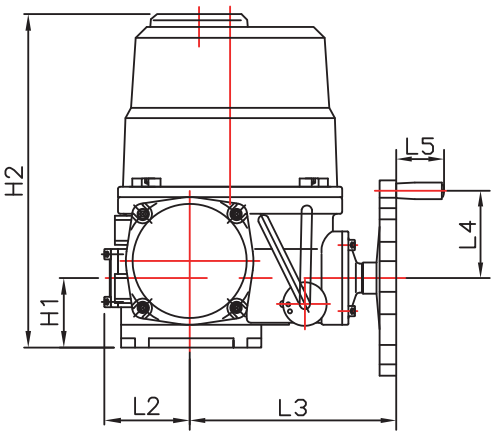
# NTIR DIMENSION

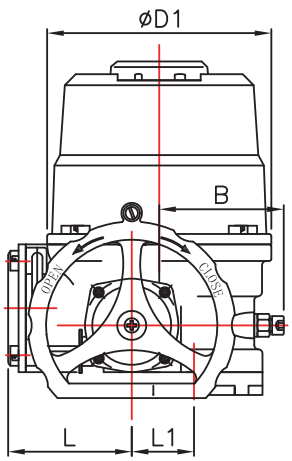
## NTIR SERIES EACH PART AND NAME



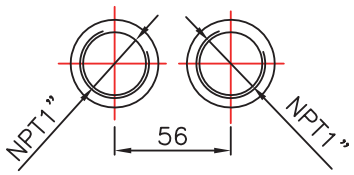

## NTIR SERIES DIMENSIONS



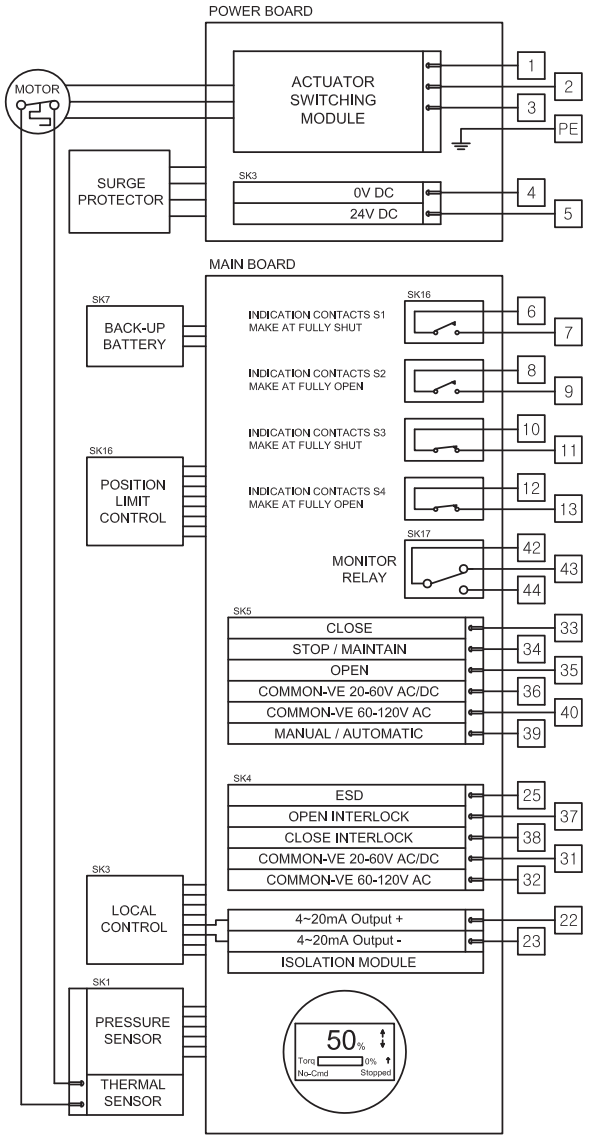




### Conduit Entries




| Specification \ Parameter | A1 | A2 | A3 | B | ØD | ØD1 | E | H1 | H2 | L | L1 | L2 | L3 | L4 | L5 | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NTIR-200 | 35 | 26.5 | 30 | 90 | 140 | 170 | 16.5 | 67 | 323 | 122 | 45 | 68 | 143 | 60 | 44 | 42 |
| NTIR-500 | 39 | 26.5 | 30 | 120 | 200 | 216 | 16.5 | 67 | 321 | 119 | 60 | 82 | 204 | 78 | 44 | 58 |

# NTI / NTIT WIRING DIAGRAM




Note 2-1
Internal power supply voltage is 24VDC
When the external control voltage is 20~60V DC/AC, the common terminal is 36.
When the external control voltage is 20~120V DC/AC, the common terminal is 40.

Note 2-2
Valve open when contact closed valve closed when contact open the function require that opening valve is set to be preferential.

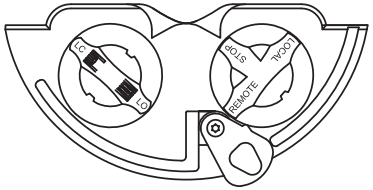
Note 2-3
Valve open when contact open the function require that closing the function require that closing valve is set to be preferential.

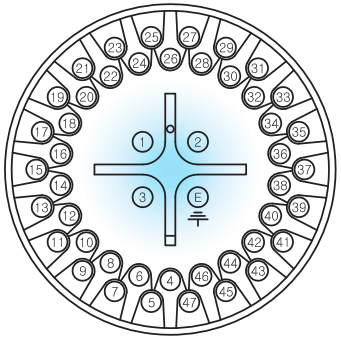
Note 2-4
ESD can be set to close valve, open valve and stay up.

Note 2-5
Connect terminals 1 and 2 when the power for the actuator is single.

Note 2-6
The indication content of four feedback relay is set freely. Refer to instruction.

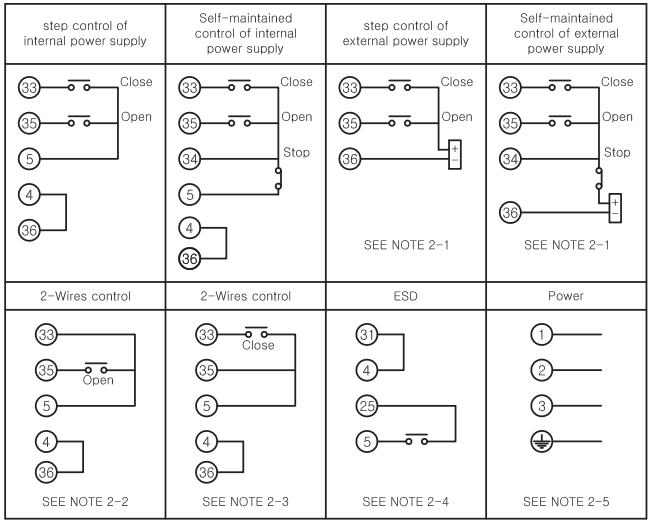
Note 2-7 (OPTION)
Analogue input signal can be 4~20mA, 0~20mA, 0~5V, 0~10V.
The default is 4~20mA. Please refer to instruction if changes are required.



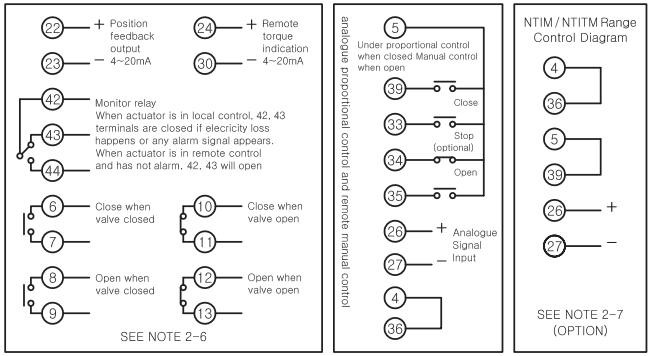



LIMIT SWITCH POSITION

| NUM | NAME | CONTACT | VALVE POSITION 0% | INTERMEDIATE | 100% |
|---|---|---|---|---|---|
| S1 | CLS | 6-7 | ■ | | |
| S2 | OLS | 8-9 | | | ■ |
| S3 | CLS | 10-11 | | ■ | ■ |
| S4 | OLS | 12-13 | ■ | ■ | |




Feedback




TAPPING

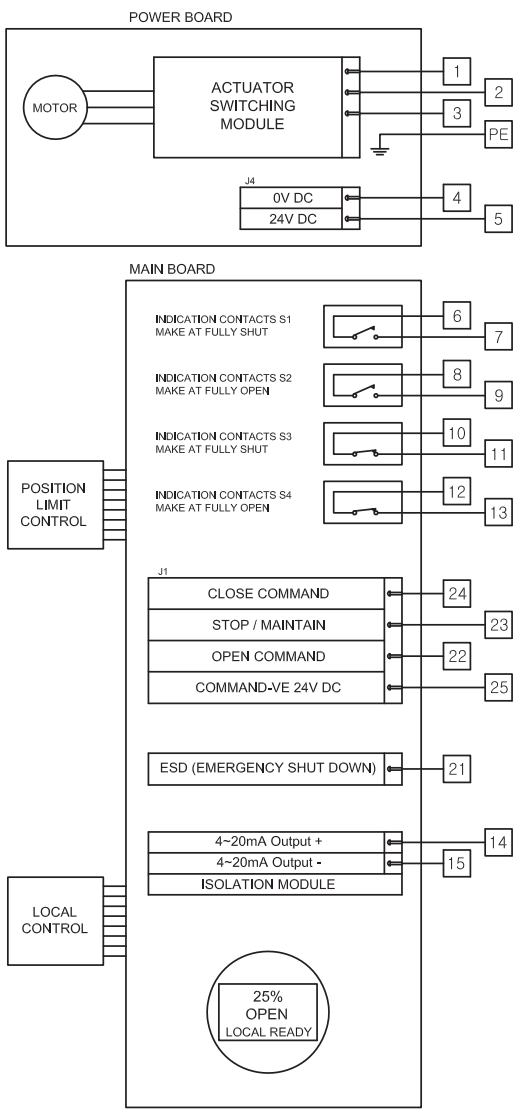
| | 50HZ | 60HZ |
|---|---|---|
| W | 220V | 230V |
| X | 380V | 400V |
| Y | 415V | 420V |
| Z | 440V | 460V |

FUSE F1 - 250mA ANTI SURGE

NEW TORK Newtork Actuation Systems

| | | |
|---|---|---|
| DRAWN JWCHAE | DATE 05EDC16 | NTI/NTIT SERIES WIRING DIAGRAM |
| CHK YSKIM | DATE 05EDC16 | |
| APP EMHUH | DATE 05EDC16 | |
| DRAWING NUMBER - | | FOR - |

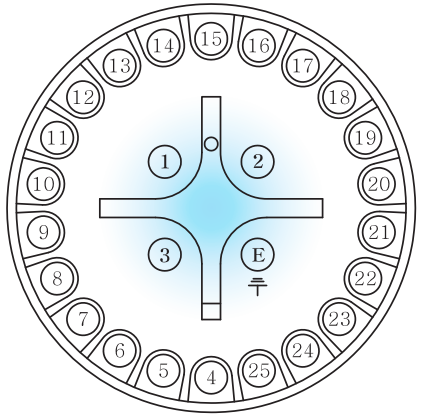
# NTIR WIRING DIAGRAM

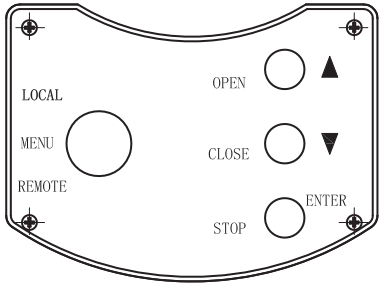


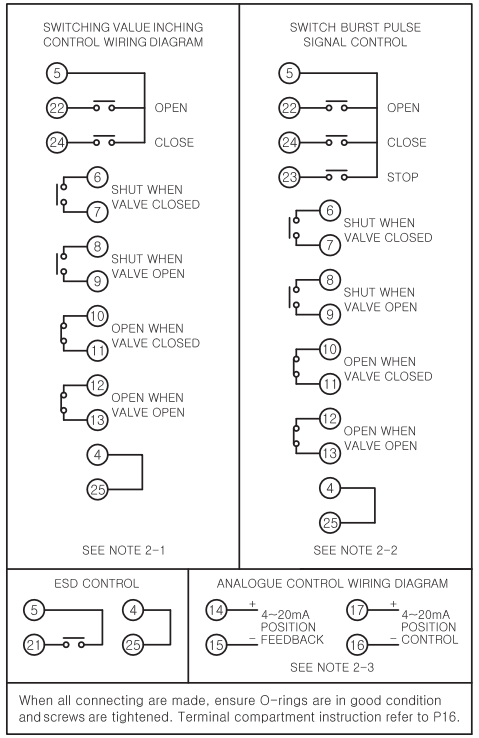

Note 2-1
CHANGE REMOTE CONTROL INTO SWITCHING VALUE CONTINUOUS CONTROL WHEN USING THIS.

Note 2-2
USE THIS AND CHANGE REMOTE CONTROL INTO SWITCHING VALUE PULSE CONTROL WHEN CONTROL SIGNALS ARE BURST PULSES.

Note 2-3
CHANGE REMOTE CONTROL INTO ANALOGUE IN MENU OF ACTUATORS WHEN USING THIS.



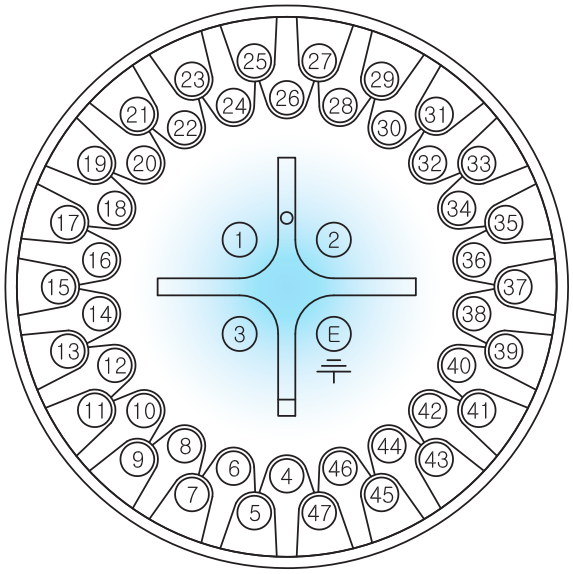

When all connecting are made, ensure O-rings are in good condition and screws are tightened. Terminal compartment instruction refer to P16.

LIMIT SWITCH POSITION

| NUM | NAME | CONTACT | VALVE POSITION | | |
|---|---|---|---|---|---|
| | | | 0% | INTERMEDIATE | 100% |
| S1 | CLS | 6-7 | ■ | | |
| S2 | OLS | 8-9 | | | ■ |
| S3 | CLS | 10-11 | | ■ | ■ |
| S4 | OLS | 12-13 | ■ | ■ | |

| | | | |
|---|---|---|---|
| NEWTORK Newtork Actuation Systems | | | |
| DRAWN | JWCHAE | DATE | 05EDC16 |
| CHK | YSKIM | DATE | 05EDC16 |
| APP | EMHUH | DATE | 05EDC16 |
| NTIR SERIES WIRING DIAGRAM | | | |
| DRAWING NUMBER | - | FOR | - |

# TERMINAL COMPOSITION




Warning : Please refer to the rated voltage stampted on the actuator nameplate before connection power. Connect terminals 1, 2, and 3 when the power is three phases 380VAC. Connect terminals 1 and 2 when the power is single phase 220VAC

| | | | |
|---|---|---|---|
| ① | Power Line 1# | ㉕ | ESD |
| ② | Power Line 2# | ㉖ | Analogue Input Signal +Ve |
| ③ | Power Line 3# | ㉗ | Analogue Input Signal -Ve |
| ④ | 24vdc-Ve | ㉘ | |
| ⑤ | 24vdc+Ve | ㉙ | |
| ⑥ | Monitor Relay S1-1 | ㉚ | Remote Torque Feedback - |
| ⑦ | Monitor Relay S1-2 | ㉛ | Common -Ve 20~60v Ac/Dc |
| ⑧ | Monitor Relay S2-1 | ㉜ | common -Ve 20~120v AC |
| ⑨ | Monitor Relay S2-2 | ㉝ | Remote Closing Signal Input End |
| ⑩ | Monitor Relay S3-1 | ㉞ | Remote Stopping / Maintaining Signal Input End |
| ⑪ | Monitor Relay S3-2 | ㉟ | Remote Opening Signal Input End |
| ⑫ | Monitor Relay S4-1 | ㊱ | Common -Ve 20~60v Ac/Dc |
| ⑬ | Monitor Relay S4-2 | ㊲ | Open Interlock |
| ⑭ | | ㊳ | Close Interlock |
| ⑮ | | ㊴ | Manual / Automatic |
| ⑯ | | ㊵ | Common +Ve 20~120v Ac |
| ⑰ | | ㊶ | |
| ⑱ | | ㊷ | Common Monitor Relay |
| ⑲ | | ㊸ | Common Monitor Relay Normally Closed |
| ⑳ | | ㊹ | Common Monitor Relay Normally Open |
| ㉑ | | ㊺ | |
| ㉒ | Remote Position Feedback + | ㊻ | |
| ㉓ | Remote Position Feedback - | ㊼ | |
| ㉔ | Remote Torque Feedback + | Ⓔ | Grounding |

# CERTIFICATION


Patent 1. Manual valve opening degree detecting apparatus and method


Patent 2. Electric Autuator having detecting and removing function for foreign substance


Patent 3. Check valve opening and closing characteristics monitoring and diagnosing devices


ISO 9001:2015 and ISO 14001:2015


OHSAS 18001:2007


Certificate of Risk assessment


Certificate of award from
Korea Water Resources Corporation


Certificate of Venture Business


Certificate of INNO-BIZ


Certificate of Product-specific approved exporter of ASEAN-ROK


Certificate of Direct production


Certificate of Promising Export Firm by the SMBA, KOREA

# CUSTOMER SUPPORT

**Newtork Korea endeavors to achieve the following :**

- **Manufacturing superior quality products**
- **Developing technology for user convenience**
- **Excellent actuation solution**
- **Fast and accurate on-site service**

Our engineers provide safe and reliable service, and ideally perform highly demanding tasks, such as retrofit and replacement of electric actuators. As always, we promise to do our best to meet your needs and ensure satisfaction.

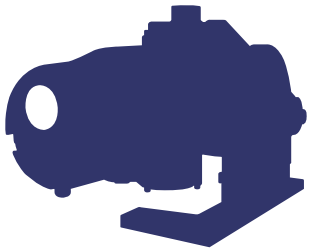
## Total consulting service

With 30 years of experience, we provide comprehensive customized service with original knowledge of all aspects of electric valve actuators and world-class engineering, and the technical resources to provide diagnostics tailored to customer need by identifying operational problems and presenting solutions.

## Maintenance and Inspection service

Our experienced managers and skilled engineers are dispatched to projects according to site schedules to provide inspection and maintenance services for all electric actuators installed in customer plants. Therefore, NEWTORK KOREA's maintenance and inspection services ensure customers to save time and cost and keep facilities running smoothly and profitably without having to consult an engineer. This service also improves plant facilities and equipment reliability.

WORKSHOP OVERHAUL | FIELD SUPPORT | RETROFIT SERVICE | REPLACE MENT | COMMI SSIONING | CONSULTING



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