



Digest Version

Digital Tachometers/ Counters








DIGITAL TACHOMETERS
DIGITAL STROBO SCOPES
DIGITAL COUNTERS






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NIDEC DRIVE TECHNOLOGY CORPORATION

Nidec Shimo Corporation change its company name to Nidec Drive Technology Corporation on April 1, 2023.

Digital Tachometers/Counters

Panel Mount Digital Tachometers				Ratio Meters	Counter
Low price/Basic input type	Low price/Basic input type	Low price/Differential input type	High function type	Ratio Meters	With 2-step preset output
DT-501XA	DT-5TS	DT-5TL	DT-5T Series	DT-5TXR Series DT-5TFR Series	DT-601CG
					
					
P3	P4	P4	P5	P6	P7

Handy Type				
For both non-contact/contact types	Contact type/LCD display	Contact type/LED display	Low price/contact type	Low price/non-contact type
DT-205Z	DT-105N (with Type-6 foil) DT-105NS (with Type-12 foil)	DT-107N (with Type-6 foil) DT-107NS (with Type-12 foil)	EE-1B	EE-2B
				
CE	CE	CE	CE	CE
P8	P9	P10	P11	P11

Digital Stroboscopes

LED Type		Xenon Type
LED Stroboscopes with AC Power Input DT-361	LED Stroboscopes with a Built-in Rechargeable Battery DT-365	Xenon Stroboscopes with AC Power Input DT-311N
		
 P12	 P12	CE P13

Xenon Type		
Xenon Stroboscopes with a Built-in Rechargeable Battery DT-315N	Xenon Stroboscopes with AC Power Input for Printing Machines DT-311P	Xenon Stroboscopes with a Built-in Rechargeable Battery for Printing Machines DT-315P
		
CE P13	P14	P14

Product Specification Icons

Tachometer

Can be used as a tachometer or speedometer

Transit timecounter

Can indicate values inversely proportional to the input. Selects indication values either by the hour, minute, and second, or in units of 1/100 seconds

Time span

Measures time duration when the input signal has been ON (OFF). Can measure time duration for various processes

Flowmeter

In combination with a pulse-output flow meter, this device indicates the instantaneous flow rate according to the predetermined quantity of flow per pulse

Number of pieces

Can count the number of pieces

Quantity

Can count the quantity

Length

Can count the length

Detection

Can conduct detection

Stop motion

Enables stop motion measurement

Panel Mount Digital Tachometers



Digital Tachometer DT-501XA (Basic input)



- **The largest digit size in the industry (22mm high)**
Increases the indication size by 46%, compared with conventional products.
- **The smallest depth in the industry (92mm)**
Shortens the depth to 84% of that of conventional products.

Easy installation with a new one-touch mechanism

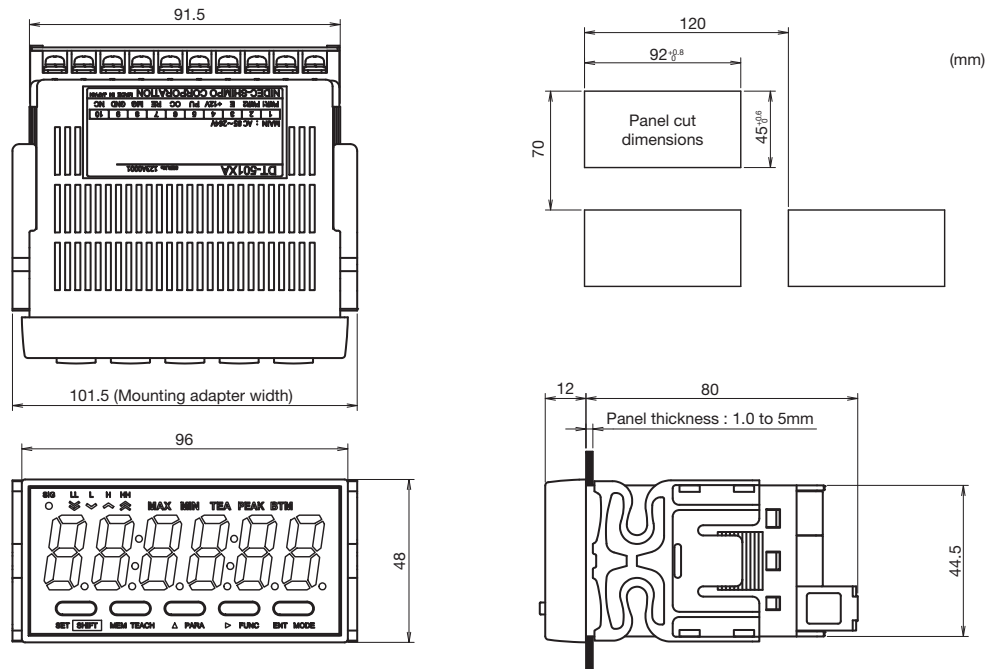


Emits evenly in large digits.

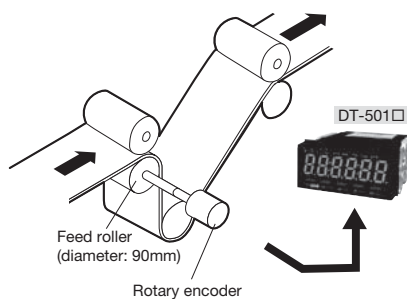
Specifications

Model		DT-501XA			
Display	Operation mode	Tachometer mode	Flowmeter mode	Transit timecounter mode	Time span mode
	Display 1	0 to 999999 6 digits		0:00:00 to 9:59:59 (hour, minute, second, base 60 display)	0:00:00 to 0:59:59 (hour, minute, second, base 60 display)
	Display 2	-		0:00 to 999:99 (second: 1/100 sec, base 10 display)	
With zero suppression function					
Decimal point position	10 ⁻¹ to 10 ⁻⁵			-	
Number indicator	Red 7 segment LED, font height 22mm, 6 digits, (-) display available				
LED lamp	8 (SIG, LL, L, H, HH, MAX, MIN, TEA)				
Operation key	5 (SET/SHIFT, MEM/TEACH, UP/PARA, RIGHT/FUNC, ENT/MODE)				
Input range	0.0067Hz to 100kHz			10ms to 3600s	
Measurement accuracy	±0.008%±1digit			±0.1%±1digit	
Filter	Switches among 100kHz, 30kHz, 10kHz, and 0.02kHz using parameters. Note that you can switch between only 10kHz and 0.02kHz in a magnetic sensor, and its contact is only 0.02kHz.				
Display cycle	0.2, 0.5, 1, 2, 5, 10, 15, 30, 60 sec (can be changed in the parameter settings)				Dependent on the input signal
Pre-scale function	Parameter setting system using the front panel keys. The teaching (combination) of display values are also available.				
Memory function	Can store the maximum/minimum measurement values in memory, and display in the indicator. (Switches the display using the MEM key)				
Comparator function	Can display the settings of the upper limit, lower limit, upper-upper limit, and lower-lower limit, as well as judgment results on the LED lamp. Can also perform the hysteresis setting of the upper and lower limit values.				
Auto zero time	0.1 to 150 seconds		0.1 to 3600 seconds		
Pre-arithmetic function	Updates the displayed value according to the elapsed time after the pulse stops.				
Teaching function	Performs scaling automatically by setting the display value with a certain signal input. (only in the tachometer and flowmeter modes)				
Power supply	AC85 to 264V (50/60Hz)				
Input signal scope	Open collector, contact, voltage pulse, magnetic sensor				
Insulation resistance	10MΩ or more (at DC500V Mega)				
Voltage proof	AC1500V or more 1min				
Operating temperature	0 to 45°C (No condensation)				
Operating humidity	35 to 85%RH (No condensation)				
Operating atmosphere	No corrosive gas				
Conforming standard	RoHS				
Protection function	Front panel: IP66 (or equivalent), Rear terminal block: IP20				
External dimensions	W96×H48×D92mm (DIN)				
Weight	Approx. 200g				

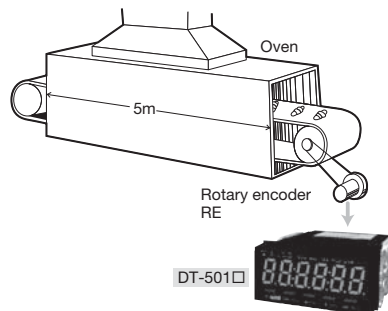
Dimensional drawing



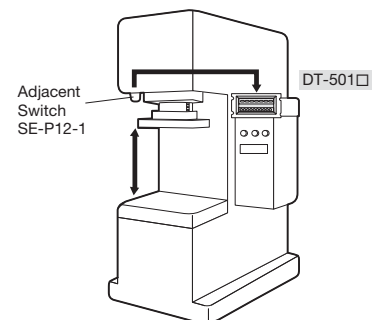
Peripheral speed measurement of the roller



Transit time display in the oven



Operating time display of the press machine





Low price type

Digital Tachometer

DT-5TS (Basic input)

DT-5TL (Differential input)

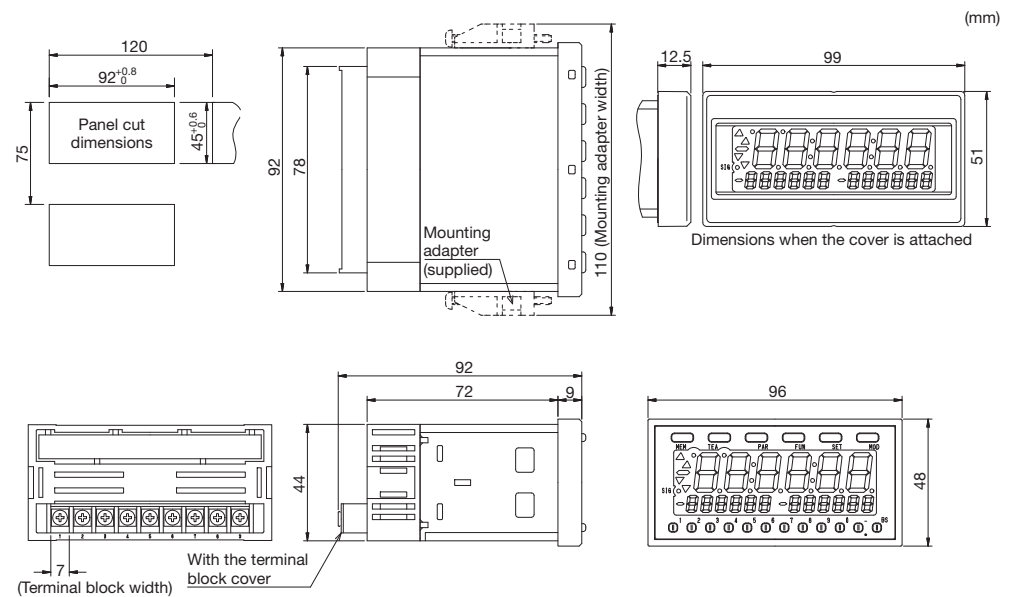


- Responds to various input signals.
- Simple operation allows anyone to conduct settings.
- Secure design with excellent waterproof properties (equivalent to IP66)
- Equipped with various functions, such as teaching, memory, pre-scale.
- Can accept high-speed input at 100kHz

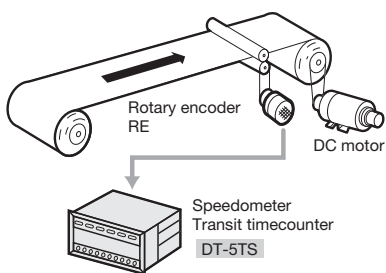
Specifications

Model		DT-5TS/DT-5TL			
Display	Operation mode	Tachometer mode	Flowmeter mode	Transit timecounter mode	Time span mode
	Display 1	0 to 999999 6 digits		0:00:00 to 9:59:59 (hour, minute, second, base 60 display)	0:00:00 to 0:59:59 (hour, minute, second, base 60 display)
	Display 2	-		0:00 to 999:99 (second: 1/100 sec, base 10 display)	
With zero suppression function					
Decimal point position		10 ⁻¹ to 10 ⁻⁵			-
Number indicator		Main display parts: Red 7 segment LED, font height 15mm, 6 digits, Sub display parts (2 sections): Green 7 segment LED, font height 6.5mm, 6 digits+6 digits, (-) display available			
Input range		0.0067Hz to 100kHz			10ms to 3600s
Measurement accuracy		±0.008%±1 digit			±0.1%±1 digit
Filter		Switches among 100kHz, 30kHz, 10kHz, and 0.02kHz using parameters. Note that you can switch between only 10kHz and 0.02kHz in a magnetic sensor, and its contact is only 0.02kHz.			
Display cycle		0.2, 0.5, 1, 2, 5, 10, 15, 30, 60 sec (can be changed in the parameter settings)			Dependent on the input signal
Pre-scale function		Parameter setting system using the front panel keys. The teaching (combination) of display values are also available.			
Memory function		Can store the maximum/minimum measurement values in memory, and indicate using green LEDs in the sub display parts			
Auto zero time		0.1 to 150 seconds		0.1 to 3600 seconds	
Pre-arithmetic function		Updates the displayed value according to the elapsed time after the pulse stops.			-
Power supply		AC specifications: 85 to 264V (50/60Hz), DC specifications: 9 to 35V			
Input signal scope		Basic input: Open collector, contact, voltage pulse, magnetic sensor Differential Input: Differential signal			
Insulation resistance		10MΩ or more (at DC500V Mega)			
Voltage proof		AC1500V or more 1min			
Noise resistance		Supply terminal normal/common mode ±1500V			
Vibration resistance		Complies with JIS C-0911, vibrational frequency: 10 to 55Hz, half amplitude: 0.5mm, 10 minutes for each XYZ direction			
Operating temperature		0 to 45°C (No condensation)			
Operating humidity		35 to 85%RH (No condensation)			
Operating atmosphere		No corrosive gas			
Protective functions		Front panel: IP66 (or equivalent), Rear terminal block: IP20			
External dimensions		W96×H48×D92mm (DIN)			
Weight		300g			

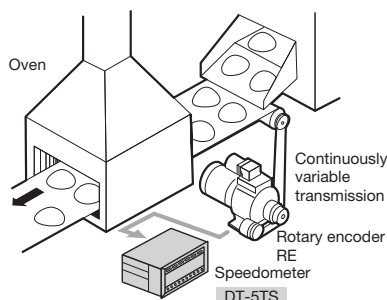
Dimensional drawing



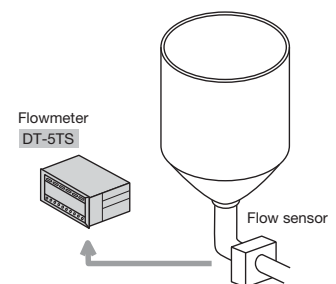
High speed winding speed display



Oven conveyor speed display



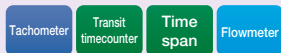
Flow rate measurement of various liquids



Panel Mount Digital Tachometers

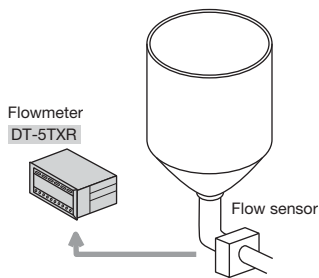


High function type Digital Tachometer DT-5TXR (Basic input) DT-5TFR (Differential input) DT-5TVR (Voltage/current input series)

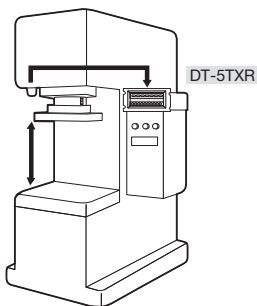


- Responds to various input signals.
- Easy to add and change various input and output functions.
It can be achieved only by replacing the optional board.
(Options are sold separately)
*It can also support ratio meters in combination with the ratio input options (sold separately). (For details, contact us.)
- Can check the upper and lower limit values at a glance using 2 sub indicators.
- Can be used in environments subject to a large amount of water, such as the food industry, with higher waterproof properties. (Equivalent to IP66)
- Requires no complicated calculation, and implements the teaching function that enables optional changes of display values and error modifications.
- Can accept high-speed input at 100kHz (DT-5TX, DT-5TF)
- Equipped with the memory function to store and display the maximum and minimum values

Flow display from the tank



Display of the revolution speed in the pressing machine



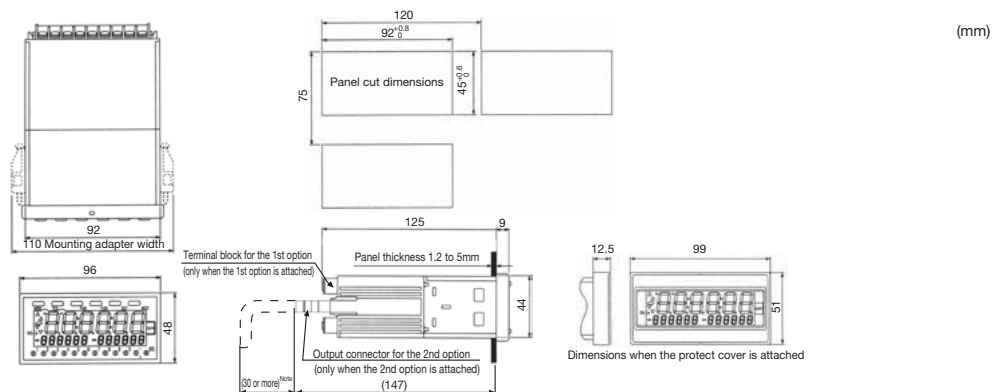
Specifications

Model		DT-5TXR/DT-5TFR			
Display	Operation mode	Tachometer mode	Flowmeter mode	Transit timecounter mode	Time span mode
	Display 1	0 to 999999 6 digits		0:00:00 to 9:59:59 (hour, minute, second, base 60 display)	0:00:00 to 0:59:59 (hour, minute, second, base 60 display)
	Display 2	-		0:00 to 999:99 (second: 1/100 sec, base 10 display)	
With zero suppression function					
Decimal point position		10 ⁻¹ to 10 ⁻⁵		-	
Display parts		Main display parts: Red 7 segment LED, font height 15mm, 6 digits, Sub display parts (2 sections): Green 7 segment LED, font height 6.5mm, 6 digits+6 digits, (-) display available			
Input range		0.0067Hz to 100kHz		10ms to 3600s	
Measurement accuracy		±0.008%±1digit		±0.1%±1digit	
Filter		Switches among 100kHz, 30kHz, 10kHz, and 0.02kHz using parameters. Note that you can switch between only 10kHz and 0.02kHz in a magnetic sensor, and its contact is only 0.02kHz.			
Display cycle		0.2, 0.5, 1, 2, 5, 10, 15, 30, 60 s (can be changed in the parameter settings) Updates data using the above cycles for optional outputs excluding the analog and BCD outputs Updates data by 10ms or per display cycle for the analog output option		Dependent on the input signal	
Pre-scale function		Parameter setting system using the front panel keys. The teaching (combination) of display values are also available.		-	
Memory function		Stores the maximum/minimum measurement values in memory, and indicates using green LEDs in the sub display parts			
High and low set point values		Can indicate the upper and lower limit values using green LEDs in the sub display parts			
Auto zero time		0.1 to 150 seconds		0.1 to 3600 seconds	
Pre-arithmetic function		Updates the displayed value according to the elapsed time after the pulse stops.			
Power supply		AC specifications: 85 to 264V (50/60Hz), DC specifications: 9 to 35V			
Input signal scope		Basic input: Open collector, contact, voltage pulse, magnetic sensor Differential Input: Differential signal			
Insulation resistance		10MΩ or more (at DC500V Mega)			
Voltage proof		AC1500V or more 1min			
Noise resistance		Supply terminal normal/common mode ±1500V			
Vibration resistance		Complies with JIS C-0911, vibrational frequency: 10 to 55Hz, half amplitude: 0.5mm, 10 minutes for each XYZ direction			
Operating temperature/humidity		0 to 45°C (No condensation)/35 to 85%RH (No condensation)			
Operating atmosphere		No corrosive gas			
Protective functions		Front panel: IP66 (or equivalent), Rear terminal block: IP20			
External dimensions		W96×H48×D134mm (DIN)			
Weight		300kg (350g for models with output)			

*There are the input specifications in addition to the above specifications. (For details, contact us.)

Model		DT-5TVR					
Input	Mode	Mode1	Mode2	Mode3	Mode4	Mode5	Mode6
	Input range	DC0 to ±10V	DC0 to ±1V	DC1 to 5V	DC4 to 20mA	DC0 to ±100V	AC0 to 100V
Display	Measurement resolution	1/5000					
	Maximum setting value (display resolution) (when the input range is the maximum value)	0 to 5000(1digit)	5002 to 10000(2digit)	10005 to 25000(5digit)	25010 to 50000(10digit)	50020 to 99980(20digit)	
Decimal point position		10 ⁻¹ to 10 ⁻⁴					
Display parts		Main display parts: Red 7 segment LED, font height 15mm, 5 digits, Sub display parts (2 sections): Green 7 segment LED, font height 6.5mm, 5 digits+5 digits, (-) display available					
Measurement accuracy		±0.5% (full-scale) (when the input range is the maximum value)					
Display cycle		Updates data every 0.2, 0.5, 1, 2, 5, and 10 s (can be changed in the parameter settings) Averages inputs between updates and indicates the average value					
Moving average		Averages data for 3 or 10 display cycles and indicates the average value					
Scaling		Sets the voltage (current) of 2 points and the display value					
Teaching function		Performs scaling automatically by setting the display value with a certain signal input					
Memory function		Stores the maximum/minimum measurement values in memory, and indicates using green LEDs in the sub display parts					
Upper and lower limit values		Can indicate the upper and lower limit values using green LEDs in the sub display parts.					
Peak display		When the optional DOP-RMTR for external signal inputs is installed, selection between average display and peak or bottom hold display is available using external signal inputs. Selects the peak or bottom using parameters					
Auto zero		Turns the display to zero if the display value becomes the parameter setting value or less					
Zero set		Cancels input drifts. Resets to zero by pressing the SET key. Can set enable/disable on the front panel (select using Function 7)					
Zero fixing of the smallest display digit		Can fix the display smallest digit, or smallest 2 digits to zero					
Input sampling cycle		100ms					
Power supply		AC85 to 264V (50/60Hz)					
Insulation resistance		10MΩ or more (at DC500V Mega)					
Voltage proof		AC1500V or more 1min					
Noise resistance		Supply terminal normal/common mode ±1500V					
Vibration resistance		Complies with JIS C-0911, vibrational frequency: 10 to 55Hz, half amplitude: 0.5mm, 10 minutes for each XYZ direction					
Operating temperature/humidity		0 to 45°C (No condensation)/35 to 85%RH (No condensation)					
Operating atmosphere		No corrosive gas					
Protective functions		Front panel: IP66 (or equivalent), Rear terminal block: IP20					
External dimensions		W96×H48×D134mm (DIN)					
Weight		300g (350g for models with output)					

Dimensional drawing



Note) Cable space of 30mm or more is necessary when the connector is attached.

Ratio Meters



Ratio Meters

- (Basic input) (Basic input)
DT-5TXR-RMTR
- (Basic input) (Differential input)
DT-5TXR-DRTR
- (Differential input) (Basic input)
DT-5TFR-RMTR
- (Differential input) (Differential input)
DT-5TFR-DRTR

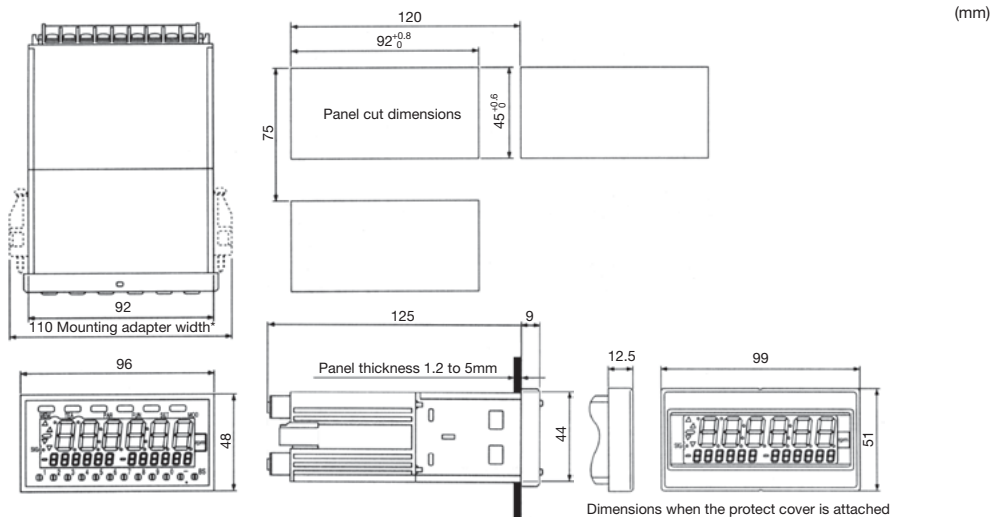
Tachometer

- Responds to various input signals.
- Easy to add and change various input and output functions.
It can be achieved only by replacing the optional board. (Options are sold separately)
*It can also support ratio meters in combination with the ratio input options (sold separately). (For details, contact us.)
- Equipped with the dual sub indicators that display 2 types of revolution speed respectively.
- Can be used in environments subject to a large amount of water, such as the food industry, with higher waterproof properties. (Equivalent to IP66)
- Requires no complicated calculation, and implements the teaching function that enables optional changes of display values and error modifications.
- Can accept high-speed input at 100kHz
- Equipped with the memory function to store and display the maximum and minimum values

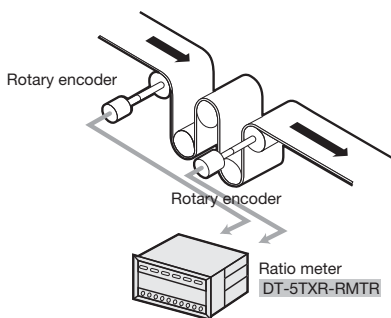
Specifications

Model		DT-5TXR-RMTR/DT-5TXR-DRTR/DT-5TFR-RMTR/DT-5TFR-DRTR					
Display	Operation mode	Error ratio	Absolute ratio	Density ratio	Revolution speed difference	Transit speed	Time difference
	Display 1	-99999 to 99999 ±5 digits	0 to 99999 5 digits	-	-99999 to 99999 ±5 digits	0 to 99999 5 digits	0:00:00 to 0:59:59 (hour, minute, second, base 60 display)
	Display 2	-					0:00 to 999.99 (second: 1/100 sec, base 10 display)
With zero suppression function							
Decimal point position			10 ⁻¹ to 10 ⁻⁴		-		
Display parts		Main display parts: Red 7 segment LED, font height 15mm, 5 digits, Sub display parts (2 sections): Green 7 segment LED, font height 6.5mm, 5 digits+5 digits					
Input range		0.0083Hz to 100kHz			10msec to 3600s		
Measurement accuracy		±0.1%					
Filter		Switches among 100kHz, 30kHz, 10kHz, and 20Hz using parameters. Note that you can switch between only 10kHz and 20Hz in a magnetic sensor, and its contact is only 20Hz.					
Display cycle		0.2, 0.5, 1, 2, 5, 10, 15, 30, 60 sec (can be changed in the parameter settings) Updates data using the above cycles for transistor and BCD outputs. Updates data by 10ms for voltage output.					
Pre-scale function		Parameter setting system using the front switches. The teaching (combination) of display values are also available.					-
Memory function		Can store the maximum/minimum measurement values in memory, and display.					
Upper and lower limit values		Can indicate the upper and lower limit values using green LEDs in the sub display parts.					
Auto zero time		0.1 to 150 seconds			0.1 to 3600 seconds		
Pre-arithmetic function		Updates the displayed value according to the elapsed time after the pulse input.					
Power supply		AC85 to 264V (50/60Hz)					
Input signal scope		Basic input: Open collector, contact, voltage pulse, magnetic sensor Differential Input: Differential signal					
Insulation resistance		10MΩ or more (at DC500V Mega)					
Voltage proof		AC1500V or more 1min					
Noise resistance		Supply terminal normal/common mode ±1500V					
Vibration resistance		Complies with JIS C-0911, vibrational frequency: 10 to 55Hz, half amplitude: 0.5mm, 10 minutes for each XYZ direction					
Operating temperature		0 to 45°C (No condensation)					
Operating humidity		35 to 85%RH (No condensation)					
Operating atmosphere		No corrosive gas					
Protective functions		Front panel: IP66 (or equivalent), Rear terminal block: IP20					
External dimensions		W96×H48×D134min (DIN)					
Weight		350g for models with output					

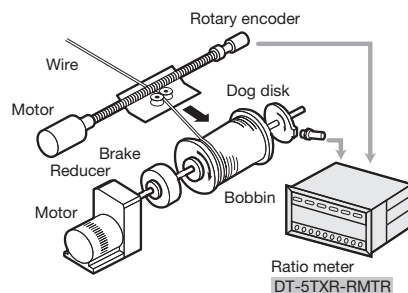
Dimensional drawing



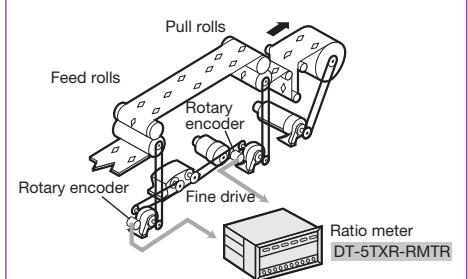
Speed ratio display for films, etc.



Traverser pitch display



Display of the revolution speed and ratio between rolls (Error ratio)



Digital Counters



Bidirectional counter with an arithmetic function (With 2-step preset output) DT-601CG

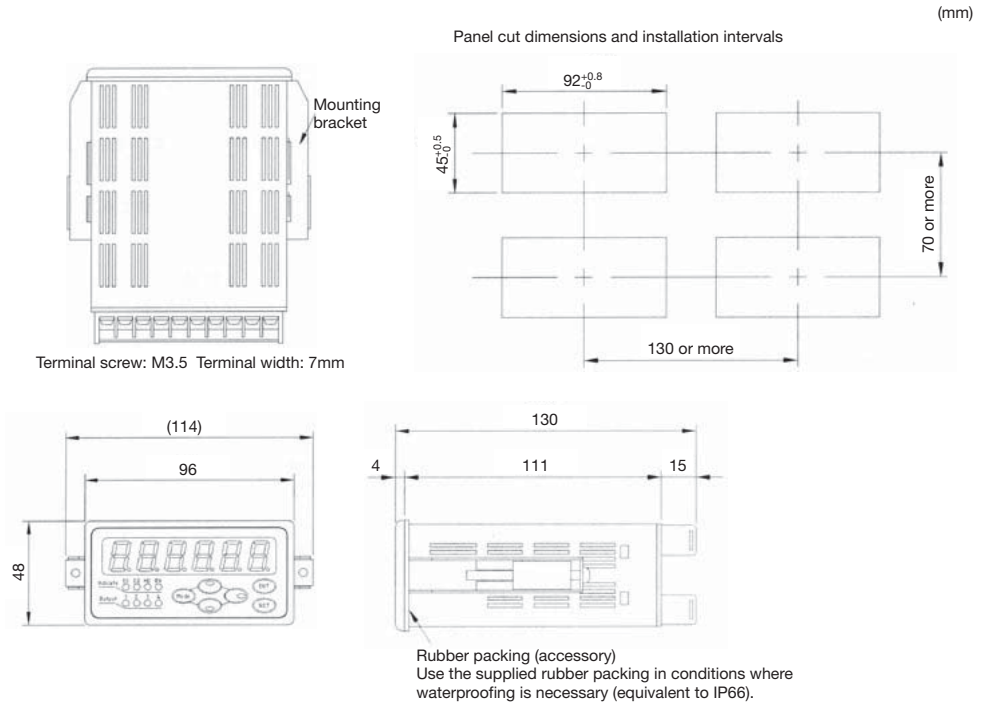
Number of pieces Quantity Length

- Equipped with a drip-proof front panel (equivalent to IP66), this device can be used in food or medical products lines.
- Free power supply of AC85 to 264V. Also supports DC12 to 24V. (available upon request at time of order)
- BCD output
(The analog output and line receiver are optional)
- Complies with the RoHS directive. Complies with the regulation that restricts the use of certain hazardous substances in electrical and electronic equipment.

Specifications

Model	DT-601CG
Operation mode	Count-up, Count-down, Reversible
Display	LED 6-digit, font height: 14mm, red
Display range	-99999 to 999999
Counting range	Can select from among 3-round stop, endless, and over rotation display
Filter	Switches among 100kHz, 30kHz, 10kHz, and 20Hz using parameters. Note that you can switch between only 10kHz and 20Hz in a magnetic sensor, and its contact is only 20Hz.
Pre-scale	Optionally sets the scale factor per 1 signal from 1×10^{-9} to 9999
Decimal point position	Can optionally select from 1 digit to 3 digits after the decimal point
Power-off memory	100,000 times within 10 years
Input system	Individual, order, phase contrast (RE type)
Input signal	NPN open collector signal, voltage pulse signal (L: 2V or less, H: 3.8 to 30V)
Reset system	Manual reset, external reset
External reset signal	50ms or more, NPN open collector or contact signal
Counting inhibit signal response time	50ms or more, NPN open collector or contact signal
Sensor power output	DC12V \pm 10%100mA MAX (DC24V 60mA is available optionally)
Applicable detector	Rotary encoder, proximity switch, gear sensor, contact
Operating temperature	0 to 45°C
Operating humidity	30 to 80%RH (No condensation)
Operating atmosphere	No corrosive gas
Consumption power	AC power: Approx. 20VA or less, DC power: Approx. 6VA or less
Power supply	AC specifications 85 to 264V(50/60Hz) DC specifications 12 to 24V(\pm)10%
Casing material	Housing: ABS resin with glass (black), Terminal block parts: P.B.T black
Protection grade	Equivalent to IP66 (front face part)
External dimensions	W96×H48×D130mm
Weight	Approx. 400g
Accessories	Terminal block cover 2 (acrylic transparent), rubber packing (NBR black), unit label

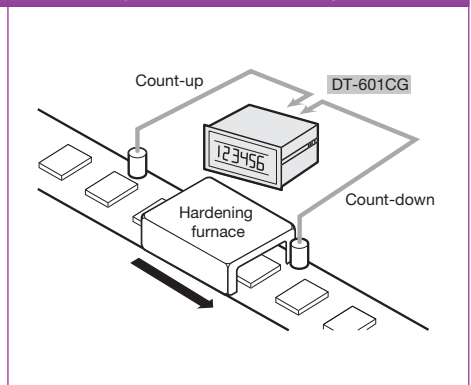
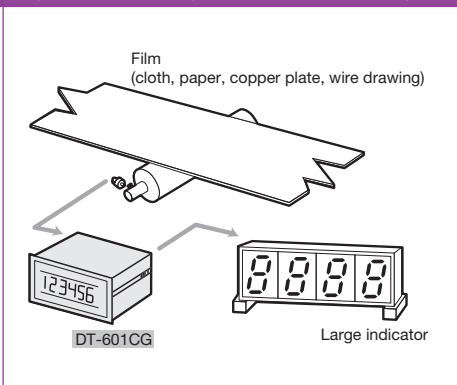
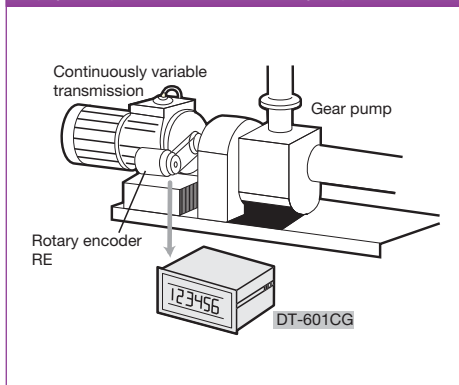
Dimensional drawing



Displays the liquid amount in the actual unit by the pre-scale function

Displays the actual measurement value by the pre-scale function, and connects to the large indicator

Displays the count in the hardening furnace



Hand Held Model Digital Tachometers



Hand Held Model Digital Tachometer For both non-contact/ contact types DT-205Z

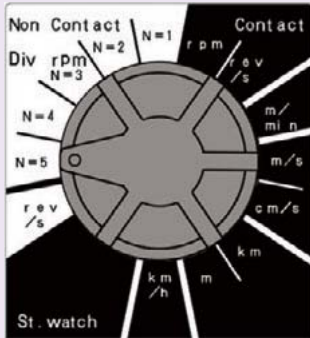
Tachometer Length

- A dual purpose tachometer for contact measurement using an adapter, and for non-contact measurement using reflection tape

- Can measure up to 1.2rpm using the frequency dividing function

Apply 2 to 5 pieces of reflection tape for measurement

For N=5



*Make sure to apply reflection tape at even intervals.
*The non-contact type only supports the RPM unit.



Apply reflection tape in 5 positions every 72° on a revolving object before use.

- Actualizes energy-saving by adopting LED to the light source
Enables continuous measurement for 35 hours (with two AA alkaline batteries)
- Lightweight and durable housing made of die-cast aluminum

Specifications

Model	DT-205Z
Measurement method	Non-contact type (Apply light on reflection tape and measure the cycle of reflection light)
Display	5 digits display LCD Font height: 12mm
Revolution speed	rpm (rev/s) 6 to 99999 0.10 to 1666.7
Measurement accuracy	6 to 8300rpm: ±1rpm 8301 to 25000rpm: ±2rpm 25001 to 99999rpm: ±0.006% of the displayed value and ±1 rpm
Measurement time	Approx. 1 second (1 to 10sec for 60rpm or less)
Measurement distance	50 to 300mm
Memory function	Stores the maximum, minimum, latest measurement values, and 30 measurement values for 5 minutes
Stop watch function	Available measurement range: 0.1 to 999.9sec (0.06 to 600rpm)
Low-speed revolution measurement function	Minimum measurement speed: 1.2rpm (when 5 pieces of reflection tape are applied)
Auto power off	5 minutes
Power supply	AA alkaline battery x 2
Battery life (during continuous use)	Approx. 35 hours
Housing	Aluminum die-cast
External dimensions	Length 170 x Width 63 x Thickness 46mm
Weight (main unit)	Approx. 290g (including batteries)
Operating temperature	0°C to 40°C (No condensation)
Accessories	Contact adapter, carrying case, AA alkali batteries x 2, reflection tape 1 sheet (35 pieces) Contact*1 (Conical x 2, Funnel x 1, Type-6 foil for speed measurement), Extension bar (Length: 75 mm) x 1

*1 Measurement applications for each supplied contact are as follows:

Conical: For revolution speed measurement (Used when a revolving object to be measured has a dent in the center)

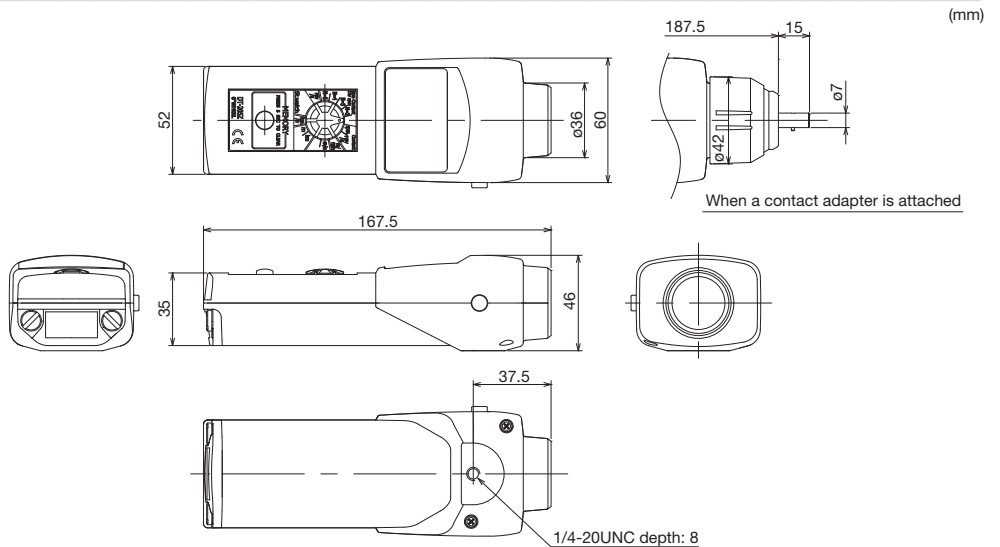
Funnel: For revolution speed measurement (Used when a revolving object to be measured has a bump in the center)

Type-6 foil for speed measurement: For speed/length measurement (Used when a revolving object to be measured has a belt-like shape)

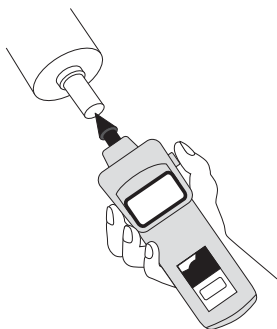
- Measurement range when a contact adapter is used (when the speed measurement Type-6 foil is attached)

Measurement method	Contact type (Put the contact on a revolving object for measurement)	
Revolution speed	rpm	0.8 to 25000
	(rev/s)	0.01 to 416.67
Speed	(cm/s)	0.2 to 6350.0
	(m/s)	0.002 to 63.500
	(m/min)	0.11 to 3810.0
	(km/h)	0.007 to 228.60
Length	(m)	0.02 to 99999
	(km)	0.0001 to 99999
		0.8 to 9999.9rpm: ±1rpm
Measurement accuracy	10000 to 25000rpm: ±0.006% of the displayed value and ±1 rpm	

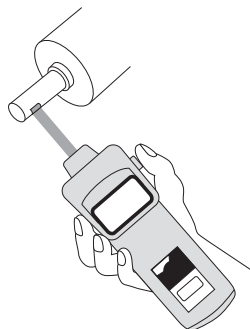
Dimensional drawing



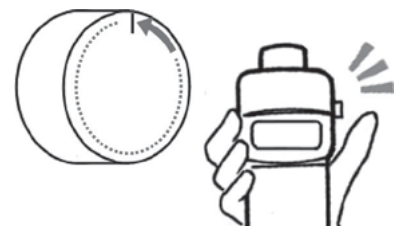
Motor speed measurement (contact)



Motor speed measurement (non-contact)



Used as a stop watch





Hand Held Model
Digital Tachometer
 Contact type (LCDdisplay)
DT-105N
DT-105NS

Tachometer Length

- Enables measurement until the low speed 0.1 to 25,000rpm without switching the range
- Stores the maximum, minimum, latest measurement values, and additional 10 measurement values
- Can widely display the numeric values and units on the LCD
- Energy efficient design that achieves continuous 60-hour measurement using two AA alkaline batteries.

Specifications

Model	DT-105N	DT-105NS
Measurement method	Put the contact on a revolving object for measurement	
Display	5 digits display	
	LCD Font height: 12mm	LCD Font height: 12mm
Revolution speed	(rpm)	0.10 to 25000
	(rev/s)	0.002 to 416.67
	(rev/h)	6 to 99999
Speed	(cm/s)	0.03 to 6350.0
	(m/s)	0.0003 to 63.500
	(m/min)	0.02 to 3810.0
	(m/h)	0.9 to 99999
	(km/h)	0.001 to 228.60
Length	(cm)	0.5 to 99999
	(m)	0.005 to 99999
	(km)	0.0001 to 99999
Total number of rotations	(rev)	0.1 to 99999
Measurement accuracy	0.10 to 999.99rpm: ±0.06rpm 1000.0 to 9999.9rpm: ±0.6rpm 10000 to 25000rpm: ±0.006% of the displayed value and ±1 rpm	
Measurement time	1 second	
Memory function	Stores the maximum, minimum, latest measurement values, and 10 measurement values	
Auto power off	5 minutes	
Power supply	AA alkaline battery x 2	
Battery life (during continuous use)	Approx. 60 hours	
Housing	Aluminum die-cast	
External dimensions	Length 183 x Width 63 x Thickness 46mm	
Weight (main unit)	Approx. 340g (including batteries)	
Accessories	Carrying case, AA alkaline battery x 2, Contact ¹ (Conical x 2, Funnel x 1), Extension bar (Length: 75mm x 1)	
	Type-6 foil (Diameter: approx. 49 mm) for speed measurement ^{1,2}	Type-12 foil (Diameter: approx. 97 mm) for speed measurement ¹

¹ Measurement applications for each supplied contact are as follows:

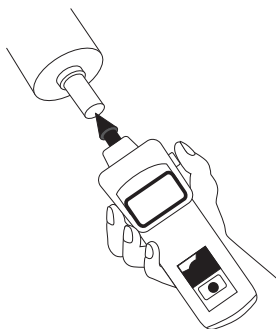
Conical: For revolution speed measurement (Used when a revolving object to be measured has a dent in the center)

Funnel: For revolution speed measurement (Used when a revolving object to be measured has a bump in the center)

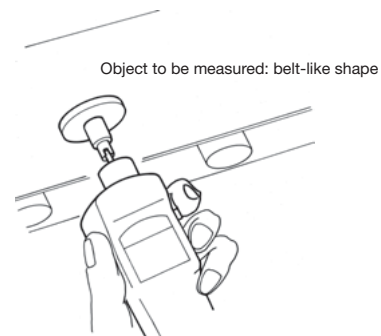
Type-6 foil for speed measurement: For speed/length measurement (Used when a revolving object to be measured has a belt-like shape)

² We provide models with type-12 foil for speed measurement (diameter: approx. 97mm). We recommend using those with type-12 foil when measuring the speed and length of high-speed objects to be measured.

Motor speed measurement (contact)



Speed measurement by attaching speed measurement foil



Hand Held Model Digital Tachometers



Hand Held Model
Digital Tachometer
 Contact type/LED display
DT-107N
DT-107NS

Tachometer Length

- Enables measurement until the low speed 0.1 to 25,000rpm without switching the range
- Stores the maximum, minimum, latest measurement values, and additional 10 measurement values
- Can clearly confirm the display using LED (luminescent diode) even when it is dark
- Energy efficient design that achieves continuous 30-hour measurement using two AA alkaline batteries.

Specifications

Model		DT-107N	DT-107NS
Measurement method		Put the contact on a revolving object for measurement	
Display		5 digits Display	
		LED Font height: 10mm	LED Font height: 10mm
Revolution speed	(rpm)	0.10 to 25000	
	(rev/s)	0.002 to 416.67	
	(rev/h)	6 to 99999	
Speed	(cm/s)	0.03 to 6350.0	0.05 to 12700
	(m/s)	0.0003 to 63.500	0.005 to 127.00
	(m/min)	0.02 to 3810.0	0.03 to 7620.0
	(m/h)	0.9 to 99999	1.8 to 99999
	(km/h)	0.001 to 228.60	0.002 to 457.20
Length	(cm)	0.5 to 99999	
	(m)	0.005 to 99999	0.010 to 99999
	(km)	0.0001 to 99999	0.0002 to 99999
Total number of rotations	(rev)	0.1 to 99999	
Measurement accuracy		0.10 to 999.99rpm: ± 0.06 rpm 1000.0 to 9999.9rpm: ± 0.6 rpm 10000 to 25000rpm: $\pm 0.006\%$ of the displayed value and ± 1 rpm	
Measurement time		1 second	
Memory function		Maximum, minimum, latest measurement values, and other 10 measurement values	
Auto power off		5 minutes (LED is turned OFF in 10 seconds)	
Power supply		AA alkaline battery x 2	
Battery life (during continuous use)		Approx. 30 hours	
Housing		Carrying case, AA alkaline battery x 2, Contact ^{*1} (Conical x 2, Funnel x 1), Extension bar (Length: 75mm x 1)	
External dimensions		Length 183 x Width 63 x Thickness 46mm	
Weight (main unit)		Approx. 340g (including batteries)	
Accessories		Carrying case, AA alkaline battery x 2, Contact ^{*1} (Conical x 2, Funnel x 1), Extension bar (Length: 75mm x 1)	
		Type-6 foil (diameter: approx. 49 mm) for speed measurement ^{*1,2}	Type-12 foil (diameter: approx. 97 mm) for speed measurement ^{*1}

*1 Measurement applications for each supplied contact are as follows:

Conical: For revolution speed measurement (Used when a revolving object to be measured has a dent in the center)

Funnel: For revolution speed measurement (Used when a revolving object to be measured has a bump in the center)

Type-6 foil for speed measurement: For speed/length measurement (Used when a revolving object to be measured has a belt-like shape)

*2 We provide models with type-12 foil for speed measurement (diameter: approx. 97mm). We recommend using those with type-12 foil when measuring the speed and length of high-speed objects to be measured.



Hand Held Model

Digital Tachometer

Low price type

Contact type Non-contact type

EE-1B EE-2B

Tachometer Length

- Performs stable measurement with a palm-sized compact design
- Offers two measurement types: the contact type to directly put the contact against the center of revolution axis of an object to be measured, and the non-contact type to enable measurement at a distance

Specifications

Model	EE-1B (Contact type)	EE-2B (Non-contact type)	
Measurement method	Put the contact against the center of revolution axis	Emit visible light on reflection tape (1 piece) applied on a revolving object, and measure its reflection light	
Display	5 digits display LCD Font height: 12mm	5 digits display LCD Font height: 12mm	
Measurement range	Revolution speed	6.0 to 99,999rpm	
			1.0 to 25,000rpm
			0.02 to 416.67rev/sec
	Peripheral speed (contact) (type-6 foil attached)		0.3 to 6350.0cm/sec
			0.001 to 63.500m/sec
			0.2 to 3810.0m/min
Length (contact) (type-6 foil attached)	0.003 to 228.60km/h		
	1 to 99,999cm		
	0.01 to 99,999m		
Total number of rotations	0.0001 to 99,999km	0.1 to 99,999rev	
Measurement accuracy	1.0 to 599.9rpm: ± 1 rpm 600.0 to 25,000rpm: $\pm 0.006\%$ and ± 0.5 digit	6.0 to 8299.9rpm: ± 1 rpm 8300 to 24999rpm: ± 2 rpm 25000 to 99,999rpm: $\pm 0.006\%$ and ± 0.5 digit	
Measurement time	Less than 4rpm: max. 10 seconds 4rpm to 25,000rpm: Approx. 1 second	Less than 60rpm: max. 10 seconds 60rpm to 99,999rpm: Approx. 1 second	
Measurement distance	-	50 to 300mm	
Memory	Maximum, minimum, latest measurement values, other 10 measurement values, and their average value		
Power supply	AA dry cell battery (manganese or alkali) x 3		
Auto power off	5 minutes		
Accessories	Carrying case AA manganese dry cell battery x 3 Instruction manual Type-6 foil Funnel adapter Conical adapter	Carrying case AA manganese dry cell battery x 3 Instruction manual Reflection tape 1 sheet (35 pieces)	
External dimensions	Length 122.5 x Width 64 x Thickness 31.5mm	Length 115.5 x Width 64 x Thickness 31.5mm	
Casing material	ABS resin		
Weight (main unit)	Approx. 180g (including manganese dry cell batteries)	Approx. 150g (including manganese dry cell batteries)	
Operating temperature	0°C to 40°C (No condensation)		

*The battery life is approximately 3 hours during continuous use for manganese dry cell batteries. When alkali dry cell batteries are used, the battery life is expected to be more than three times that of the manganese.

Note that the supplied manganese dry cell batteries are samples. Their battery life may not be expected to be that of other batteries.

EE-1B *Measurement applications for each supplied contact, and speed measurement foil are as follows:

Conical: For measurements of revolution speed and total number of revolutions (Used when a revolving object to be measured has a dent in the center)

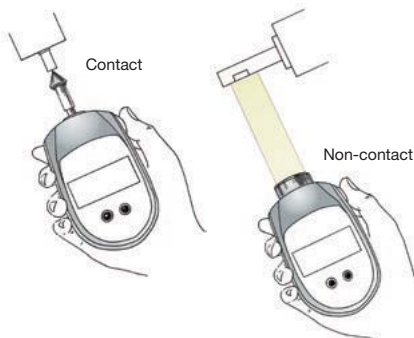
Speed measurement foil: For speed/length measurement (Used when a revolving object to be measured has a belt-like shape)

Funnel: For measurements of revolution speed and total number of revolutions (Used when a revolving object to be measured has a bump in the center)

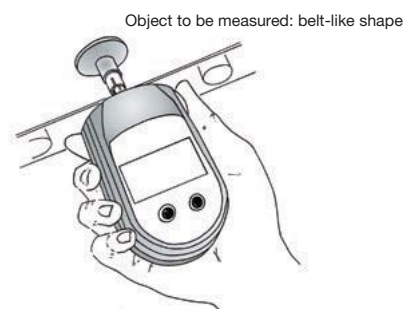
EE-2B *Specified conditions with a measurement distance of 30cm

Paint the edge face of a revolution disk in black. Apply 1 piece of the supplied reflection tape to the position of the radius 40mm from the center of revolution. (500rpm)

Motor speed measurement



Speed measurement by attaching speed measurement foil



Digital Stroboscopes



LED Digital Stroboscope

AC power input model
DT-361

Built-in rechargeable battery model
DT-365

Stop motion Tachometer

Adopts LED as light source

Adoption of LED enables emission at high frequency (max.120,000fpm), and operation check of not only printing and weaving machines, but also electric tools that operate at high speeds.

Furthermore, this device produces higher luminance and achieves longer operating life.

- Checks measurement of revolution speed and revolution axis vibration for motors, gears, and fans
- Checks ultrahigh-speed revolution bodies, such as turbines
- Checks printing misregistration level of rotary presses
- Checks operation of warp and woof in weaving machines
- Checks synchronization of motors

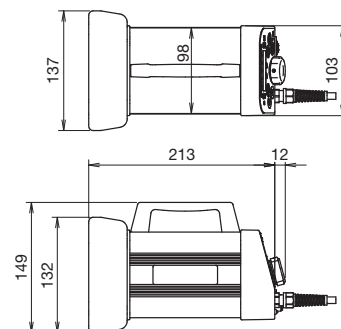
Specifications

Model	DT-361	DT-365
Application	AC power input model	Built-in rechargeable battery model
Emission count	60 to 120,000fpm	
Setting accuracy	±0.02%	
Measurement range setting	Can set to the range between 60 and 120,000fpm, or 60 and 12,000fpm	
Internal oscillation emission (Setting display/resolution) (Setting range)	Measurement range: 60 to 12,000fpm	60.0 to 3,000.0: 0.1fpm 3,000.2 to 6,000.0: 0.2fpm 6,000.5 to 12,000.0: 0.5fpm
	Measurement range: 60 to 120,000fpm	60 to 30,000: 0.1fpm 30,00.2 to 60,000: 2fpm 60,00.5 to 100,000: 5fpm 100,010 to 120,000: 10fpm
Function to change the emission frequency setting	Can change the emission frequency to an optional value using the dial Can change the emission frequency to double or half of the current value using key operations (Each press of the key changes the value to double, quadruple..., or half, one-quarter, ...)	
Phase change function	Based on the current emission phase, For angle setting: by 1° within the range between 0° and 359° For time setting: by 1 ms within the range between 0 and 999 ms (max.)	
External synchronous emission	Input interface	Voltage pulse input or open collector input of Hi: 2.5 to 12V and Lo: 0 to 0.5V
	Pulse output interface	12V voltage pulse output Pulse width: Approx. 200µs
	Synchronous edge switch	Can select either the rising edge or falling edge
	Frequency measurement range	40 to 35,000fpm
	Available delay emission range	60 to 10,000fpm
	Available phase setting range	Delay angle: by 1° within the range between 0° and 359° Delay time: by 1ms within the range between 0 and 999 ms (max.) ^{*1}
Emission duration	Sensor power	DC12V/max50mA
	Angle	Can set by 0.1° within the range between 0.1° and 3.6° (/360°)
	Time	Max. 400µsec
Display	6-digit red LED	
Setting device	Multi-turn encoder, tact switch	
Emission source	Ultra luminosity white LED 18 lights	
Connector	I/O signal connector	Power supply and I/O signal integrated connector
Memory function	•Saves the setting values when the power is OFF •Saves 5 setting values each on internal oscillation and external synchronous emission respectively	
Auto emission stop	Can set continuous emission, or set the time to stop emission by 1 minute within the range between 1 and 120 minutes	
Power supply	AC100 to 230V (50Hz/60Hz)	Built-in NiMH battery Continuous emission time Approx. 2 hours (when the emission duration is set to 3.6°) Approx. 5 hours (when the emission duration is set to 1.0°) Charging time: Approx. 2.5 hours Supplied AC adapter •Input: AC100 to 230V •Output: DC24V
Operating temperature	0 to 35°C	
Operating humidity	35 to 85%RH	
Operating environment	No dust and/or corrosive gases	
Compliance standard	RoHS	
Protection structure	Equivalent to IP65	
Weight	Approx. 1.8kg	Approx. 2.1kg
Accessories	External I/O connector (8 pin) x 1	Dedicated AC adapter x 1

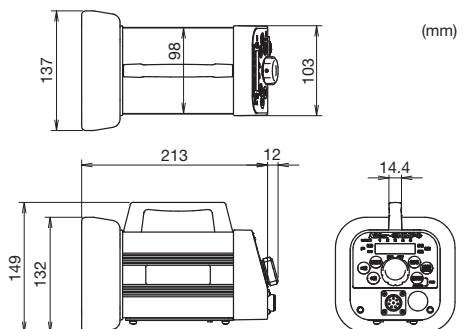
*1 A delay of approximately 30µs caused by the internal calculation process will be added.

Dimensional drawing

■DT-361



■DT-365





Xenon Digital Stroboscopes
AC power input model
DT-311N

Built-in rechargeable battery model
DT-315N

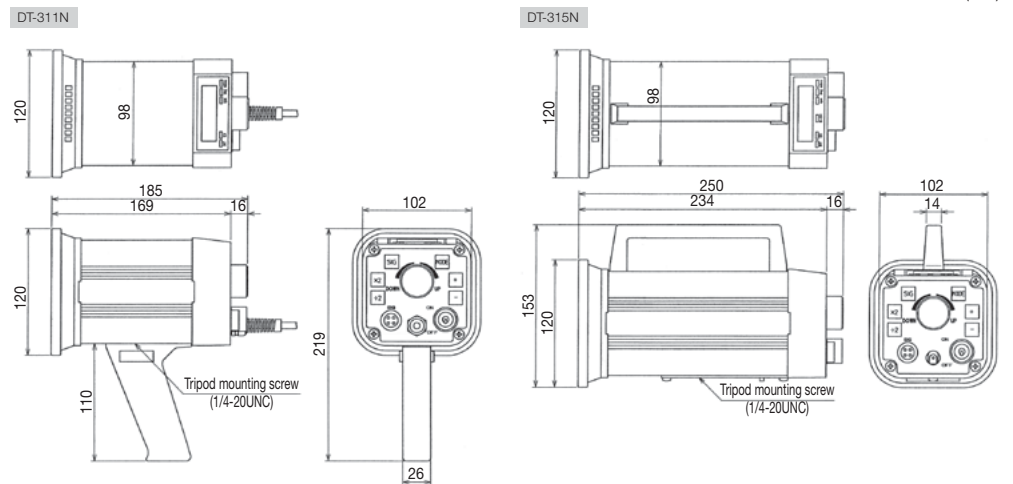
Stop motion Tachometer

- Enables stop motion analysis of operations of high-speed moving objects and revolving objects
- A wide range of measurement from 40.0 to 35,000rpm
- Can move an image under synchronized conditions
- Equipped with connector for the external signal as standard

Specifications

Model		DT-311N	DT-315N
Emission count		40.0 to 35000rpm 0 to 35000rpm in the external cycle mode	
Internal oscillation mode	Display resolution	0.1: 40.0 to 5000rpm 0.2: to 8000rpm 0.5: to 10000rpm 1: to 35000rpm	
	Jump function	Equipped (each press of the specified switch changes the emission count to half or double)	
	Integer function	Equipped (can set to show or hide the decimal point)	
	Memory function	Equipped (stores the emission count when the power is turned OFF, and emits with that count when the power is turned ON again)	
External synchronous mode	Input signal	H level :2.5 to 12V L level :0.8V MAX Pulse width: 50µsec or more Input impedance: Approx. 10kΩ or more	
	Speed measurement function	40.0 to 35000rpm (Disabled during delay emission)	
	Delay emission	0 to 359° in the range between 40.0 and 10,000rpm Can set the delay angle by 1°. Or 0 to 2000ms Can set the delay time by 1ms	
Display		5-digit red LED 7 segments	
Synchronous output signal		12V voltage signal, pulse width: approx. 400µsec	
Setting device		Multi-turn encoder, tact switch	
Flash source		Xenon lamp	
Lamp input		10W	
Power supply		AC100V to 120V	Continuous emission for approximately 1 hour using a dedicated rechargeable NiCd battery (quick recharge for 2 hours using the supplied AC adapter) Or continuous emission using the supplied AC adapter
Emission timer		Continuously lights up, or stops emission, when the setting time of 1 to 120 minutes elapses	
Sensor power output		DC12V 40mA	
Power cable		2.4m	-
Operating temperature		0 to 40°C	
Weight		Approx. 1.2kg	Approx. 2.1kg
Accessories		Grip	Specified adapter

Dimensional drawing



Operation analysis using stop motion



Digital Stroboscopes



DT-315P

Xenon Digital Stroboscopes

AC power input model for printing machines

DT-311P

Rechargeable model for printing machines

DT-315P

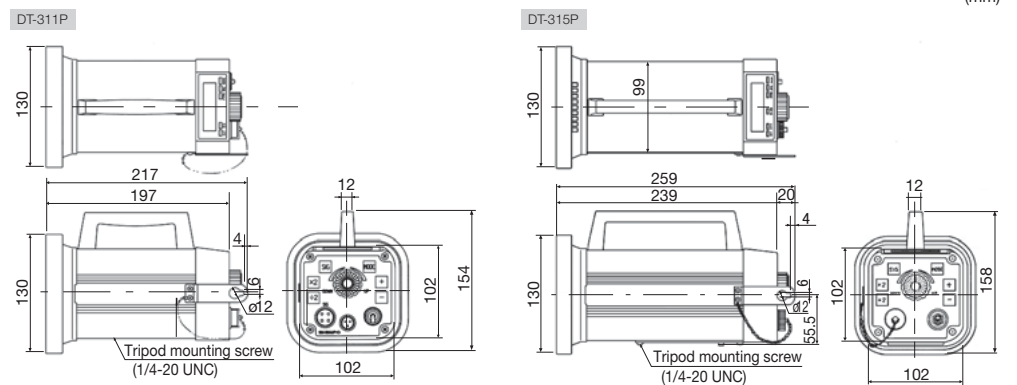


- Enables stop motion analysis of operations of high-speed moving objects and revolving objects
- A wide range of measurement from 40.0 to 35,000rpm
- Can move an image under synchronized conditions
- Equipped with connector for the external signal as standard

Specifications

Model	DT-311P	DT-315P
Emission count (fpm)	60.0 to 3000fpm(60.0 to 3000rpm)	
Internal oscillation mode	Setting accuracy	±0.1rpm : 60.0 to 200.0rpm ±0.2rpm : 200.1 to 3000.0rpm
	Jump function	Equipped (emission count changes to half or double only while the specified switch is being pressed)
	Limit function	Equipped (can set in the range between 1000 and 3000fpm)
	Integer function	Equipped (can set to show or hide the decimal point)
	Memory function	Equipped (stores the emission count when the power is turned OFF, and emits with that count when the power is turned ON again)
External synchronous mode	Input signal	H level: 2.5 to 12V L level: 0 to 0.4V Pulse width: 50µsec or more Trigger at the rising edge Input impedance: Approx. 10kΩ or more
	Speed measurement function	60.0 to 3000fpm
	Delay emission	200 to 3000fpm
	Delay range	0 to 359° by 1° step
Display	5-digit red LED	
Synchronous output signal	Voltage pulse output	
Setting device	Jog shuttle switch, tact switch	
Flash source	Xenon lamp	
Lamp input	MAX 10W	
Power supply	AC100V±10%	Continuous emission for approximately 1.5 hours using a dedicated rechargeable NiCd battery, or using the supplied AC adapter (quick recharge for 2 hours) External power supply: DC9 to 16V 2A
Emission stop timer	Continuously for 1 to 99 minutes	
Sensor power output	DC12V 40mA	
Power cable	5m	-
Operating temperature	0 to 40°C	
Environment	Drip-proof specification (equivalent to IP63)	
Weight	Approx. 1.4kg	Approx. 1.9kg
Accessories	Metal connector for I/O signals	AC adapter and charger

Dimensional drawing



Check for printing misalignment, faint, and/or register marks



Access the NIDEC-SHIMPO website

STEP1 Click "Products"



STEP3 Select the product in use and click



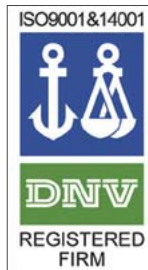
STEP2 Select "Product Category" and click



STEP4 Select "Software Download" and click



NIDEC-SHIMPO has been certified for ISO 9001 and 14001.



- ISO9001**
- Certification No. 02364-2010-AQ-KOB-RvA
 - Certification Scope
Corporate Headquarters and Main Plant, Domestic Sales Offices, and Service Groups Designing, development, manufacturing, and service (repair) of the following products
· Variable speed drive · Speed reducer · Instrument (Digital tachometer, Stroboscope)
· Controller (Digital controller) · Ceramics (Potter's wheel, Pug mill)
- ISO14001**
- Certification No. 02365-2010-AE-KOB-RvA
 - Certification Scope
Design, development, manufacturing, and repair of variable speed drives, speed reducers, instruments, controllers, ceramics, and other related industrial equipment

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- Main Line of Business
Variable reducers, Pressing machines, Electric instruments, Controllers/Precision instruments, Ceramics
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