

# ATZTA TBX/TBZ



Optimum control of energy for boilers and industrial furnaces

# Easy-to-use electric type



TBX-D  
30 · 100 · 100F · 150F

## Specifications

12~24V



New version operating on an external power

A new TBX-series turbine meter operates on external power of 12-24VDC. Except the configuration of operating power, the specifications are the same as those of the existing series of built-in battery operated products.

model TBX

- Two independent pulse generators
- LCD for displaying various types of information
- The original model using internal battery is still available

model TBZ

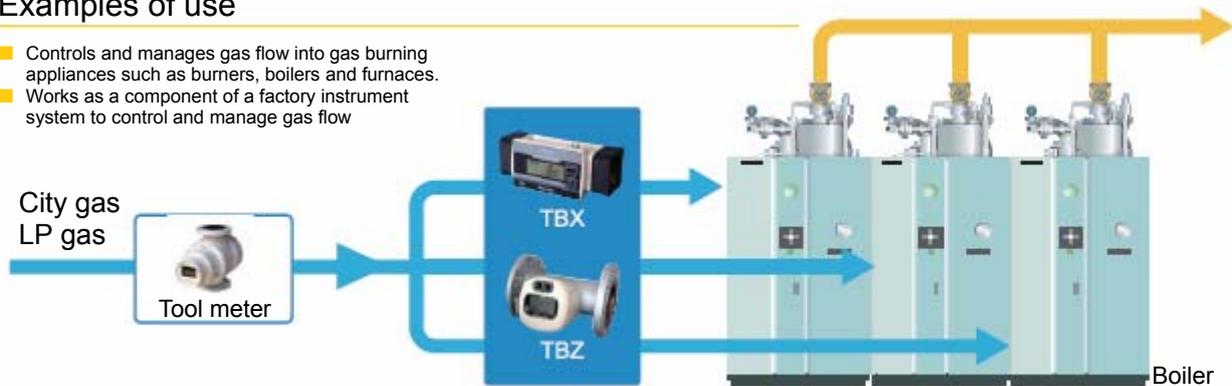


Temperature and pressure compensation

Displays the gas flow converted into a value under standard conditions, and temperature and pressure; provides a consistent energy management.

## Examples of use

- Controls and manages gas flow into gas burning appliances such as burners, boilers and furnaces.
- Works as a component of a factory instrument system to control and manage gas flow



## Designation

Type	Capacity	Connector type	Power source	Flow direction	Connector diameter	Description
TBX	30					TBX
	100					30m <sup>3</sup> /h
	150					100m <sup>3</sup> /h
						150m <sup>3</sup> /h
		No letter				Screw: (Rc)TBX30/100 only
		F				Flange: TBX100/150 only
			No letter			Battery
			D			External power
				L		From left (to right)
				R		From right (to left)
				U		From bottom (to top), TBX100 only
				D		From top (to bottom), TBX100 only
					3	32A (Rc1 - 1/4), TBX30 only
					4	40A (Rc1 - 1/2), TBX30 only

Type	Capacity	Compensation type	Compensation criteria	Flow direction	Description
TBZ	60				TBZ
	150				60m <sup>3</sup> /h
	300				150m <sup>3</sup> /h
		0			No compensation
		3.5			Temperature and pressure compensation, 350kPa
		9.9			Temperature and pressure compensation, 980kPa
		3.5P			Pressure compensation only, 350kPa
		9.9P			Pressure compensation only, 980kPa
			N		Temperature (0°C), pressure (1 atom)
			S		Other than the above represented by letter N
			No letter		No compensation
				L	From left (to right)
				R	From right (to left)
				U	From bottom (to top)
				D	From top (to bottom)



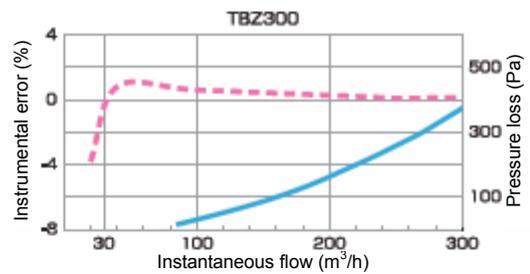
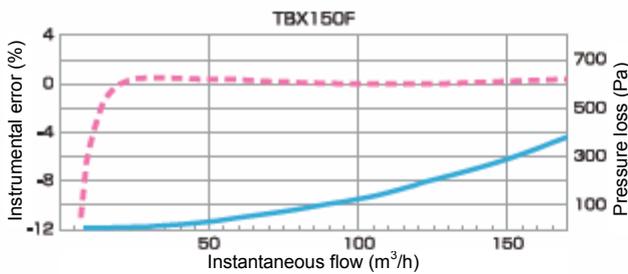
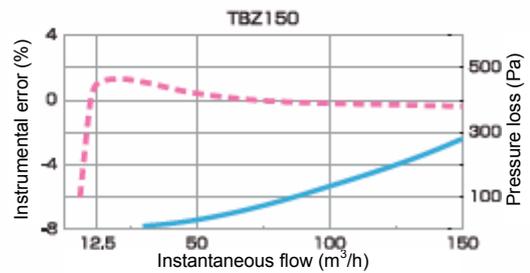
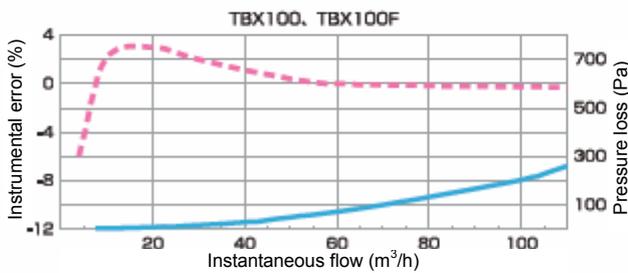
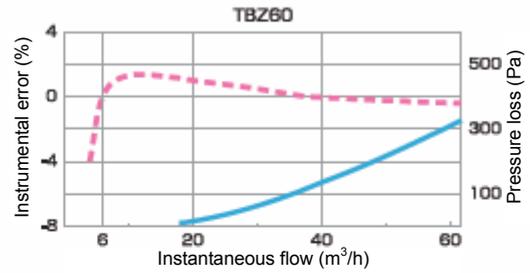
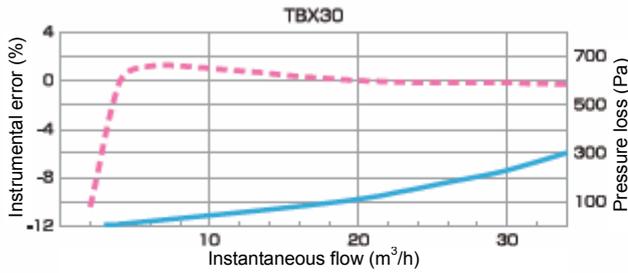
**TBX**  
30 · 100 · 100F · 150F



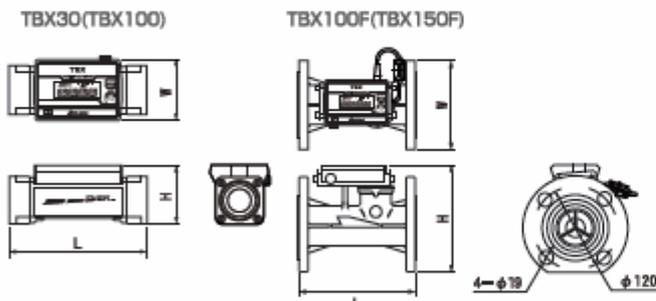
**TBZ**  
60 · 150 · 300

**TBX/TBZ general performance charts (low pressure air)**

— Instrumental error — Pressure loss



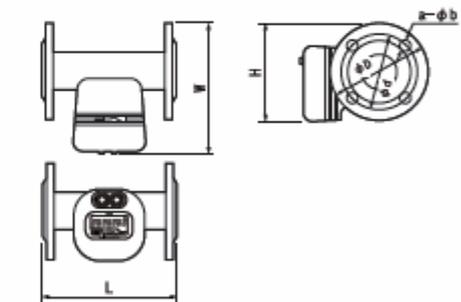
**Dimensional drawing**



**TBX** Unit: mm

Type	L	H	W
TBX30	170	74	73
TBX100	200	100	85
TBX100F	200	161	Φ155
TBX150F	200	148	Φ155

TBX100F can change the direction of the indicator depending on the flow direction. The indicator can be separated from the unit for remote indication.



**TBZ** Unit: mm

Type	L	H	W	JIS 10K flange			
				ΦD	Φd	a-Φb	Nominal diameter
TBZ60	200	150	197	140	105	4-19	40A
TBZ150	220	158	211	155	120	4-19	50A
TBZ300	250	185	246	185	150	8-19	80A

## ● Specifications

Base type		TBX30	TBX100	TBX100F	TBX150F	TBZ60		TBZ150			TBZ300				
Designation	Compensated flow (temperature and pressure compensated)			-		-	TBZ60-3.5	TBZ60-9.9	-	TBZ150-3.5	TBZ150-9.9	-	TBZ300-3.5	TBZ300-9.9	
	Actual flow (no temperature or pressure compensated)			-			TBZ60-0	-	-	TBZ150-0	-	-	TBZ300-0	-	
Flow capacity *1		4~30m <sup>3</sup> /h	10~100m <sup>3</sup> /h	10~100m <sup>3</sup> /h	12.5~150m <sup>3</sup> /h		6~60m <sup>3</sup> /h		12.5~150m <sup>3</sup> /h			30~300m <sup>3</sup> /h			
Maximum working pressure				100kPa			980kPa	350kPa	980kPa	980kPa	350kPa	980kPa	980kPa	350kPa	980kPa
Accuracy		±1%FS				±1%FS and ±3%RS									
Calculation and temperature & pressure compensation *2															
Indicator	Compensated flow, accumulated (for "compensated flow" type only)					LCD, large type, 9 digits, displayable in units of 10 liters						LCD, large type, 9 digits, displayable in units of 100 liters			
	Trip flow *3	LCD, large type, 6 digits, displayable in units of 10 liters				LCD, large type, 8 digits, displayable in units of 10 liters						LCD, large type, 8 digits, displayable in units of 100 liters			
	Non-compensated flow, accumulated	LCD, large type, 8 digits, displayable in units of 10 liters				LCD, large type, 9 digits, displayable in units of 10 liters						LCD, large type, 9 digits, displayable in units of 100 liters			
	Compensated flow, instantaneous (for "compensated flow" type only)					LCD, 4 digits, displayable in units of 0.1m <sup>3</sup> /h						LCD, 4 digits, displayable in units of 1m <sup>3</sup> /h			
	Non-compensated flow, instantaneous	LCD, 3 digits, displayable in units of 0.1m <sup>3</sup> /h	LCD, 4 digits, displayable in units of 0.1m <sup>3</sup> /h		LCD, 3 digits, displayable in units of 1m <sup>3</sup> /h			LCD, 4 digits, displayable in units of 0.1m <sup>3</sup> /h						LCD, 4 digits, displayable in units of 1m <sup>3</sup> /h	
Temperature (for "temperature & pressure compensated" type only)						LCD, 3 digits, displayable in units of 0.1°C									
Pressure (for "compensated flow" type only)						LCD, 3 digits, displayable in units of 1kPa									
Connector diameter		Rc1-1/2, Rc1-1/4	Rc2	JIS 10K 50A Flange		JIS 10K 40A Flange		JIS 10K 50A Flange			JIS 10K 80A Flange				
Working temperature range		-10°C to +60°C													
Fluid (gas) *4		City gas, LPG, nitrogen etc.													
Posture as installed		Horizontal or vertical													
Installation place		Indoor													
Case		-													
Internal battery		Lithium battery													
External power		12-24VDC±10% (max. 0.19W, 7mA*6)													
Output		Open drain x 2 (unit pulse, high density pulse *7)													
Standard pulse unit width *8		TBX30-TBX100: 10L/P, TBX150: 100L/P Max load: 24VDC/20mA, pulse width: 40msec													
Material		Aluminum alloy													
Temperature sensor		-													
Pressure sensor		Platinum resistance temperature detector, grade JIS A Semiconductor pressure sensor (high precision)													
Mass		0.8kg	1.8kg	3.1kg	2.5kg	5.3kg		6.0kg			9.4kg				

\*1 Flow capacity refers to the actual (non-compensated) flow.

\*2 -3.5 for 20kPa and -9.9 for 150kPa or above

\*3 Compensated trip flow "accumulated" for "compensated flow" (temperature & pressure compensation) type; and non-compensated trip flow "accumulated" for "actual flow" (without temperature & pressure compensation) type

\*4 No entry of contaminants such as oil mist (heavy carbide of C5 or above) and dust powder into the meter is permissible.

\*5 For outdoor installation, no direct splash of water onto the unit is permissible.

\*6 Average under the standard condition

\*7 The high density pulse and non-compensation pulse are an actual flow pulse output in phase with the revolution of the impeller.

\*8 TBZ: compensation pulse, TBX: unit pulse

## ● Accessories and options

Item	TBX		TBZ
	Internal battery	External power	
Flow meter			
Accessory	External connection cable		TBXD-SS-B C cable, 5m
	External connection cable		TBX-SS-B cable, 2m, with a junction terminal box TBZ-SS-B cable, 10m, with a junction terminal box and two clamp filters
Option	Junction terminal box		TBXD-SS-B

\* The external connection cables for the internal battery and external power types are different in the number of cores and therefore not compatible each other.

## ● Strainer (optional)

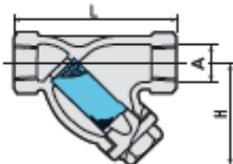
To protect the meter and keep it in good condition, install the strainer upstream of the meter.

\* Note that the strainer is a source of pressure drop.

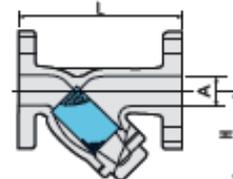
## ○ Standard specifications

Type	YS32	YS40	YS50	YF50	YDF40	YDF50	YDF80
Maximum working pressure (kPa)	500	500	500	500	980	980	980
Material	FC200	FC200	FC200	FC200	FCD-S	FCD-S	FCD-S
Nominal diameter	32	40	50	50	40	50	80
Connection	Rc1-1/4	Rc1-1/2	Rc2	JIS10K(FF)	JIS10K(RF)		
Mass (kg)	2.3	2.9	4.5	8.2	8.5	11	15
Available for	TBX30(32A)	TBX30(40A)	TBX100	TBX100F-150F	TBZ60	TBZ150	TBZ300

○ Outer dimension: screw connection type					Unit: mm	
Type	A	L	H (approximate)			
YS32	32	145	105			
YS40	40	160	110			
YS50	50	180	130			



○ Outer dimension: flange connection type					Unit: mm	
Type	A	L	H (approximate)			
YF50	50	220	130			
YDF40	40	240	155			
YDF50	50	250	170			
YDF80	80	320	215			



**Caution**

Before use, read through the instructions to ensure that the product is used safely.

Manufactured and Distributed by

**Aichi tokei denki co.,Ltd.**

URL : <https://www.aichitokei.net/>

1-2-70 Chitose, Atsuta-ku, Nagoya, 456-8691, Japan

For inquires, please contact us.

Overseas Business Division TEL +81-(0)52-661-5150

Technical specifications in this catalog are up-to-date as of april 2024.

To Our Customers

Please understand that product specifications may be changed without notice in order to improve performance. We are always happy to provide the latest catalogs and brochures, and respond to inquiries made to our offices.

3.3