



线性拟合式检漏仪

Linear Fitting Leak Tester

FL-611 系列

series

■ 多功能型气密检漏仪

性能卓越，操作灵活，可设置多组检测参数，对应多种被测物

■ 无需基准物

具有检测结果修正功能，对无基准物下得到的测试数据进行修正

■ 精度更高，节拍更短

基准数据和检测数据比对，提高检测精度，缩短检测节拍

■ 配备USB接口

数据传输和软件升级更加简易。可通过USB接口存储或处理检测结果数据

■ 对应多种检测对象

可设置32组检测参数

■ 大尺寸彩屏图表分析

实时显示检测过程，波形图和数据分析图表



Linear Fitting Leak Tester

■ Multipurpose Air Leak Tester

It features high performance and flexibility to test a variety of works under properly set measuring conditions.

■ Measurement Permits without Master Work

Provides a corrective function for OK/NG judgment referred to evaluation data that was created without a master.

■ High Accuracy and Short Measurement Time

Detection accuracy is enhanced by comparing master(reference) data structured with measured data, so that leaks can be detected in a short period of time.

■ Equipped with USB Ports

Easy processing of I/O data, update software. Measurement results data can be save USB-memory and handling of the data

■ A Variety of Parts Covered

32 different types of measurement conditions are configurable

■ Large-sized Graphic color Display

Processes of on-going measurements, wave forms, and data analysis can be displayed on the screen.

数据

Data

根据特定环境可以选择不同的数据输出方法

Data output methods can be selected according to particular circumstances.

USB 内存 USB memory 型式：D8-901 Model 内存：2GB 数据：100万次读写 2-GB Memory Data：One million times 	USB内存让数据易于传输，不同检漏仪的设定参数可以很容易的被复制或者输入。检漏仪的参数可以很方便的重置，尤其是当有多台检漏仪，或者更换检漏仪，或者新增被测物时。 即使检漏仪不和电脑相连，数据也可以长期保存。当操作环境变化时，或者发生故障寻找原因时，可以进行数据管理分析。	USB memory makes data portable, so that the settings values of separate testers can be copied and entered. Settings of testers can be easily configured, especially where there are multiple testers, where the testers are changed, or where a new work is measured. Data can be stored for a longer time without connecting the tester to a computer. Data can be managed for data analysis which is performed when operation conditions are confirmed or causes are investigated where malfunctions occur.
USB功能端口 USB function connector	数据可以输入电脑进行管理分析。电脑安装了专用驱动以后，可以输出和RS-232C接口对应的通讯数据。	Data is managed or analyzed by outputting data to a computer. The installation of a specific driver on the computer allows the same data which is output from a RS-232C connector to be output to serial communication.
RS-232端口 RS-232C connector	通过电脑和串口的连接，进行串口通讯。可选择多种通讯模式。	This connector conducts serial communication in order to output data by means of a connection with a computer or sequencer. Output data can be selected from several different kinds of output modes depending on the data to be output.
打印输出 Printout	当需要打印检测结果时，可以将一台带有RS-232端口的打印机（型号SD1-31）与检漏仪相连。打印结果可以作为产品的附带资料。	When the measurement results need to be printed out and attached to a product, connect the tester to a printer using the RS-232C connector (type: SD1-31)

表示

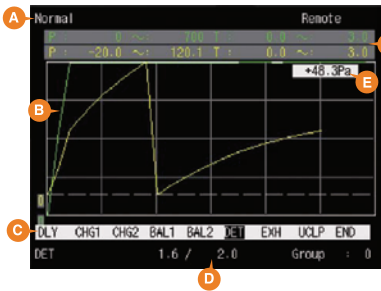
Displays

福田检漏仪可以以不同形式显示多种数据

FUKUDA' s leak tester Displays a variety of data in various forms.

检测中界面

During Measurement Screen



A：检测类型：拟合检测/普通检测

B：检测曲线
绿色：表压 黄色：差压值

C：检测环节与当前环节

D：环节已用时间/环节设定时间

E：当前差压值

F：图标显示的范围设定

A：Measurement type: Mastering/ Normal

B：Measured data graph
Green: Gauge pressure Yellow: Differential pressure sensor value

C：Processes and the current process

D：Process elapsed time/ Process set time

E：Current sensor value

F：Scale settings for graphic display

※ 根据上边的波形图可以确定检测环境和检测参数，发生故障时可以追踪原因。
From wave data, measurement conditions are confirmed, settings values at start-up are verified, and causes can be traced where trouble occurs

检测结果界面

Measurement Results Screen



A：检测结果判定

B：检测结果数值

C：检漏仪的操作状态（保持模式）

D：检测时被测物的内部压力

E：判断产品是否合格的设定值

A：Determination result of the measurement

B：Numerical value of the measurement result

C：Operational status of the leak tester (Hold mode)

D：Internal pressure of the work during measurement

E：Set value for determining acceptable or unacceptable works

FL-611 ①-②-③-④-⑤-⑥-⑦-⑧



1 Pressure Range

② 电源电压	Power Source	型号 Model	电源电压	Power Source
		02	AC100-240V	AC100-240V
③ 直压传感器精度	Gauge Pressure Sensor		直压传感器精度	Accuracy
		01	± 2% F.S.	± 2% F.S.
④ 差压传感器	Differential Pressure Sensor		规格	Specifications
		02	2 kPa	2 kPa
		03	10 kPa (适用于LF,MC,HC)	10 kPa
⑤ 接点规格	Contact specification		接点规格	Contact specification
		02	NPN输出	NPN input/ output
		03	PNP输出	PNP input/ output
⑥ 附加规格	Additional specification		规格	Specifications
		NN	无	Without
⑦ 特殊规格	Special Specifications		规格	Specifications
		NN	无	Without

8 External Option

Model	Product Name	Specification			
D14-0901-01	Power Cord	For use within Japan 3m 125V-7A 3-pronged plug,conversion adpater included			
D14-0901-02		For use outside of Japan 2m 250V-10A,plug not included			
Model	Product Name	Specification		Pressure	Range
No	Filter/ Regulator Unit	-			
FRZ-0051-0		Positive Pressure Standard Spec.	R5	5.0～10.0 kPa	LC LJ
FRZ-0052-0		Positive Pressure Precision Spec.	P-200-2	1.0～10.0 kPa	LC LJ
			P-200-3	10.0～50.0 kPa	
			P-200-4	10.0～80.0 kPa	
FRZ-0053-0		Positive Pressure Standard Spec.		0.02～0.2 MPa	LD LE L
FRZ-0054-0		Positive Pressure Precision Spec.		0.005～0.2 MPa	LD LE L
FRZ-0055-0		Positive Pressure Precision Spec. and High Performance Spec.		0.005～0.2 MPa	LD LE L
FRZ-0056-0		Positive Pressure Standard Spec.		0.05～0.85 MPa	LF MC
FRZ-0057-0		Positive Pressure Precision Spec.		0.01～0.8 MPa	LF MC
FRZ-0058-0		Positive Pressure Precision Spec. and High Performance Spec.		0.01～0.8 MPa	LF MC
FRZ-0059-0		Positive Pressure Standard Spec.		0.1～1.6 MPa	HC
FRZ-0060-0		Positive Pressure Standard Spec.		0.05～1.7 MPa	HC HD
FRZ-0061-0		Negative Pressure Standard Spec.		-100.0～-1.3 kPa	VB
FRZ-0062-0	Negative Pressure Precision Spec.	P-200-8	-80.0～-10.0 kPa	VB	

● 本体 Main Body

Figure 1 Main Body Dimensions

162

39.5

145

162

344

388

237

103

74

27.15

33

40

Rc1/8

Rc1/4

Rc1/8

Rc1/4

75.2

12

8.5

8.5

256

Approx. 53

Mounting Hole Pitch

Mounting Hole Pitch

Mounting Hole Pitch

规格 Specifications

测定方式	被测物/被测物差压比较 被测物/基准物差压比较 被测物/固定基准物差压比较（无基准被测物） 差压式气密检漏仪（Fitting检测）		
容积测定	使用定流量发生器或者手动校正器进行容积测定和校准 *选择高压规格（HD、HE范围）时，无法根据定流量发生器测量容器的容积		
差压传感器	VRZ-5500 ±2 kPa 精度±0.5%F.S. ±10 kPa 精度±0.5%F.S.		
直压传感器	VB型	-101 kPa	精度 ±2% F.S.
	LC型	50 kPa	
	LJ型	50 kPa	
	LD型	100 kPa	
	LE型	100 kPa	
	LF型	300 kPa	
	MC型	1 MPa	
	HC型	1 MPa	
	HD型	2 MPa	
	HE型	5 MPa	
被测物侧容积	约4.1ml(HD, HE除外)/ 约3.6ml（HD, HE型）		
基准物侧容积	约3.8ml(HD, HE除外)/ 约3.2ml（HD, HE型）		
基准罐容积	约28ml ※标准配件，可拆卸		
测定精度	50ml标准被测物在1ml/min的测试条件下，测定误差在±5%以内		
推荐驱动压	驱动压300—400kPa		
显示	5.7英寸LCD显示（320XR.G.B）TFT 色彩		
组号设定	0~31（共32组）		
显示单位	检测结果单位：Pa, kPa, Pa/s, kPa/s, Pa/min, kPa/min, mL/s, mL/min, Pam³/s, Pa/DET, kPa/DET, mmH₂O		
	测试压单位：kPa, MPa, kgf/cm², psi, mbar, bar, mmHg, cmHg, inHg		
外部输入/输出	REMOTE 50P（外部控制信号）接点NPN/PNP		
	APU SIGNAL 8P（APU控制信号）		
	EXT VALVE SIGNAL 34P（外部选购阀信号）		
	RS-232C D-SUB 9P(数据输出信号)		
	ANALOG IN 15P（外部模拟信号）		
	USB主机 接口A		
	USB功能 接口B		
使用温度/湿度范围	0~40℃ 45~85%RH（无结露）		
电源电压	AC100—240V		
耗电量	约100VA		
重量	约12 kg		
语言	日语/英语		
使用气体	使用清洁稳定的气源 推荐使用符合JISB8392—1:2000标准的气体 压缩空气品质等级1,3,1		
	等级	项目	基准值
	1	最大颗粒直径	0.1 μm
	3	最低结露点	-20℃
	1	最大油分子浓度	0.01 mg/m³

Testing Method	Work/ Work Comparison, Work/ Master Comparison, Work/ Fixed Master Comparison (Without Master Work) Differential Pressure Method Air Leak Tester (Fitting)		
Volume Testing	By employing a flow standard, Volume testing and calibration can be done according to actual leak standards. ※For high-pressure spec (HD, HE ranges), it is not possible to attach and use the high pressure type flow standard.		
Differential Pressure Sensor	VRZ-5500 ±2 kPa Accuracy ±0.5%F.S. ±10 kPa Accuracy ±0.5%F.S.		
Gauge Pressure Sensor	VB型	-101 kPa	Accuracy ±2% F.S.
	LC型	50 kPa	
	LJ型	50 kPa	
	LD型	100 kPa	
	LE型	100 kPa	
	LF型	300 kPa	
	MC型	1 MPa	
	HC型	1 MPa	
	HD型	2 MPa	
HE型	5 MPa		
Work Side Volume	Approx. 4.1mL(except HD, HE)/ Approx. 3.6mL (HD, HE)		
Master Side Volume	Approx. 3.8mL(except HD, HE)/ Approx. 3.2mL (HD, HE)		
Master Tank Volume	Approx. 28mL ※Standard fittings, removable.		
Testing Sensitivity	Standard work of 50mL Used for Leak Experiment ±5% 1mL/min		
Recommended Pilot Pressure	Driving pressure 300~400 kPa		
Display	5.7 Inch、LCD(320×R.G.B)×240 dot、Color TFT		
Group Setting	0~31 group (32 Total)		
Display Unit	Testing Unit : Pa, kPa, Pa/s, kPa/s, Pa/min, kPa/min, mL/s, mL/min, Pam³/s, Pa/DET, kPa/DET, mmH₂O		
	Test Pressure Unit : kPa, MPa, kgf/cm², psi, mbar, bar, mmHg, cmHg, inHg		
External Input/ Output	REMOTE 50P (External Connection Signal) Point of Contact: NPN/PNP		
	APU SIGNAL 8P (APU Connection Signal)		
	EXT VALVE SIGNAL 34P (Externally Mounted Option Signal)		
	RS-232C D-SUB 9P (Data Output Signal)		
	ANALOG IN 15P (External Analog Signal)		
	USB Host A connector		
	USB Function B connector		
Operation Temperature/ Humidity Range	0~40℃ 45~85%RH (With no Precipitation)		
Power Source	AC100-240V		
Applied Current	Approx. 100 VA		
Weight	Approx. 12 kg		
Language	Japanese/English		
Test Air Supply	Use clean and stable air pressure Recommended conditions according to JISB8392-1 : 2000 Compressed air quality class 1, 3, 1		
	Class	Items	Criteria
	1	Maximum particle diameter	0.1 μm
	3	Minimum pressure dew point	-20℃
	1	Maximum oil concentration	0.01 mg/m³

● 主要产品

● 气密检漏仪

● 数字压力表

● 流量计

● 自动压力、流量控制器

● 密封性能检测专用设备



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