KYODO

®

FAN FILTER UNIT

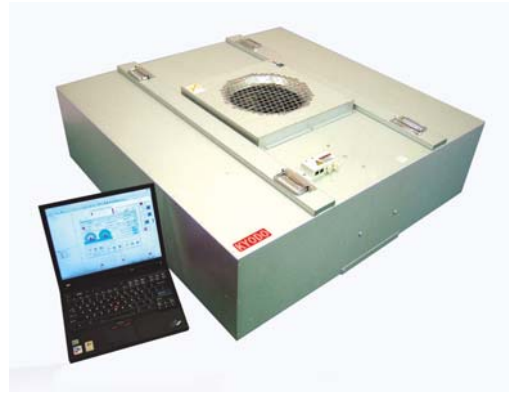# FAN FILTER UNIT

FEATURES
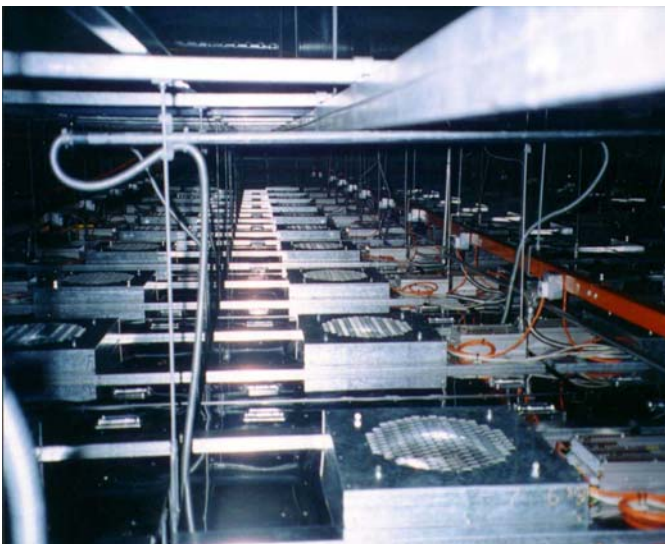
* High performance and excellent quality
* Low energy consumption reduces operating cost
* Advanced and reliable control system
* Easy installation in cleanroom grids

APPLICATIONS

* Semiconductor
* Electronics
* TFT LCD
* Optical Industries

* Biological industries
* Pharmaceutical
* Food Industries
* Laboratory Environment

KYODO Fan Filter Unit (FFU) is a self-contained ceiling unit for use in turbulent mixing and laminar flow cleanroom applications. The unit is designed with total flexibility for use with the ceiling grids. It can also be used in many other applications, such as clean booths, clean workbenches, and Clean Room tunnels. When the filter is equipped with a knife-edge interface, the unit can also be utilized in the liquid-sealed ceiling grid. It can be easily upgraded and integrated into any ceiling configuration in accordance with design specification to achieve cleanroom Class 100 (ISO Class 5), Class 10 (ISO Class 4) and Class 1 (ISO Class 3).
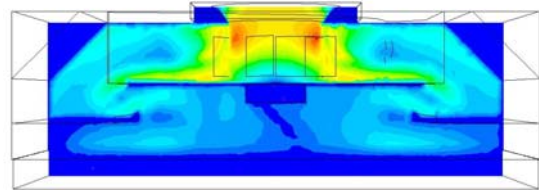

KYODO FFU is one of the quietest and cost effective units on the market, delivering high quality air filtration and air movement performance in cleanroom. From simple speed controller for a single standalone FFU to complex controlling and monitoring system for large cleanroom, we offer a vast range of designs and configuration in our standard product range. Kyodo-Allied's high tech customized computer software system is capable of monitoring and controlling more than 10,000 FFUs through a single central computer monitoring system. Custom-built systems are also available upon request.

FFU

FAN FILTER UNIT

PATENTS

Inline with our mission to enable our customers to enjoy customer-driven R&D and innovation, Kyodo-Allied invest a significant percentage of our effort and resources for Research and Development purposes.

Our Research and Development team works closely with our strategic partners to truly understand our customer requirement and continuously improve our products according with market-driven requirements.

List of Patent:

China : ZL 98106068.4, ZL01104287.7, ZL99813881.9, ZL02122661.X

Indonesia : D 0007780

Singapore : 71388, 100104, 85932, 103888, 115492

Taiwan : 109586, 194851, 128592, 194113, 17756

Malaysia : MY-111326-A,MY-126815-A,MY-111326-A,MY-123023-A,MY-128429-A

USA : 6,030,186, 6,444,004 B1, 6,592,451 B2, 6,641,364 B1

UK : GB2354802

Europe : 1364169, 1019659, 1216360

Hong Kong : HK1050563, HK1019629, HK1034302

Japan : 3357377, 3798981

Korea : 453851

Vietnam : 4079, 8513

Thailand : 17756

FAN FILTER UNIT

SPECIFICATION

Size	600x600; 600x1200; 900x1200; 1200x1200; 750x1500 (mm), etc			
Casing	Galvalume			Standard
	Aluminum, SUS 430, Powder Coated Steel			Optional
Electrical	Terminal Block			Standard
	Male-Female Connector with Pins			Optional
	3-Pin Plug for Single Phase			Optional
Power Input	1 Φ: 100~110V, 200~230V, 277V (50~60Hz)			
	3 Φ: 200V, 220V, 380V, 415V, 480V (50~60Hz)			
Mounting	Horizontal			Standard
	Vertical (Wall Mounting)			Optional
Filter Access	Top Access			Standard
	Room Access			Optional
Step Supporter	Up to 80 kg load			Optional
Control & Monitoring	DC Type	AIBS Complete with Software		Standard
		LonWorks Complete with Software		Optional
	AC Type	1 Φ	Local Speed Controller	Standard
			RS485 Complete with Software	Optional
		3 Φ	Motor Circuit Breaker or Relay	Optional
			Transformer	Optional
			Thermal Contact	Optional

*Custom-built dimensions & specifications are also acceptable.

KYODO ®

FAN FILTER UNIT

DC TYPE FFU

- ➲ Electronically commutated DC motor (External rotor motor type)
- ➲ Higher efficiency: motor require less power to operate
- ➲ Aluminum backward-curved fan blades
- ➲ Dynamically balanced: maximum vibration level to ISO 1940 G2.5 standard
- ➲ Locked rotor and reverse polarity protection
- ➲ Maintenance free ball bearings
- ➲ DC brushless motor therefore maintenance free
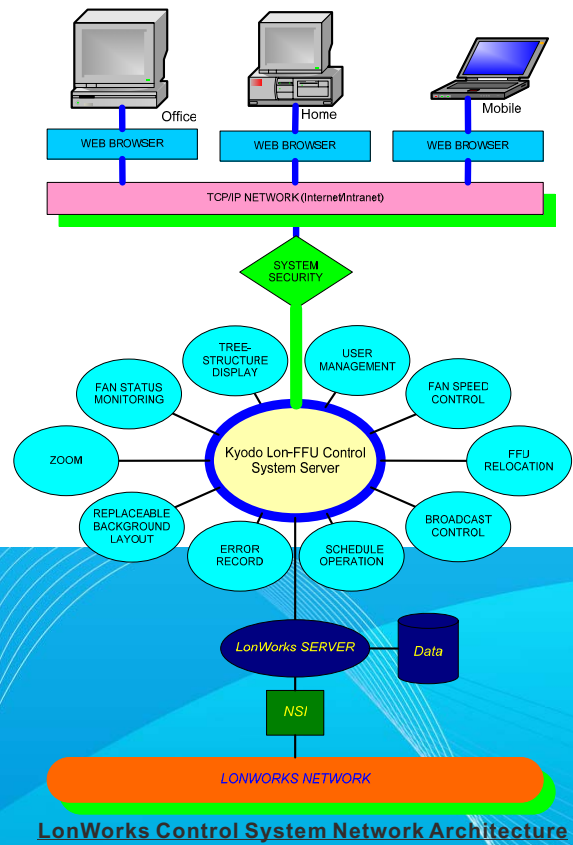- ➲ Soft start: no high current peaks when starting the motor

DC FFU Control & Monitoring system

- ✪ Windows environment, friendly graphical user interface
- ✪ Open system, compatible with other BAS system
- ✪ Actual FFU layout
- ✪ Precisely controlling & monitoring FFU
- ✪ Multi-level password for different access rights
- ✪ Automatic operation with programmable "time-switch"
- ✪ Easy group operation
- ✪ 2-level control through broadcasting mode
- ✪ Complete on-line control & configuration

- ✪ Audit Log
- ✪ Advanced error alarm system
  - ✓ Printing
  - ✓ SMS (Optional)
  - ✓ Paging (Optional)
  - ✓ E-mail
  - ✓ Sound
  - ✓ Screen Indication

We are one of the pioneers in Asia to develop Kyodo LonWorks & AIBS Fan Filter Units control. Both control system are able to control up to one million Fan Filter Units through internet and intranet.

Our software offers optional features such as data backup and integration with fire alarm system. We are able to customize the software to suit specific requirement.
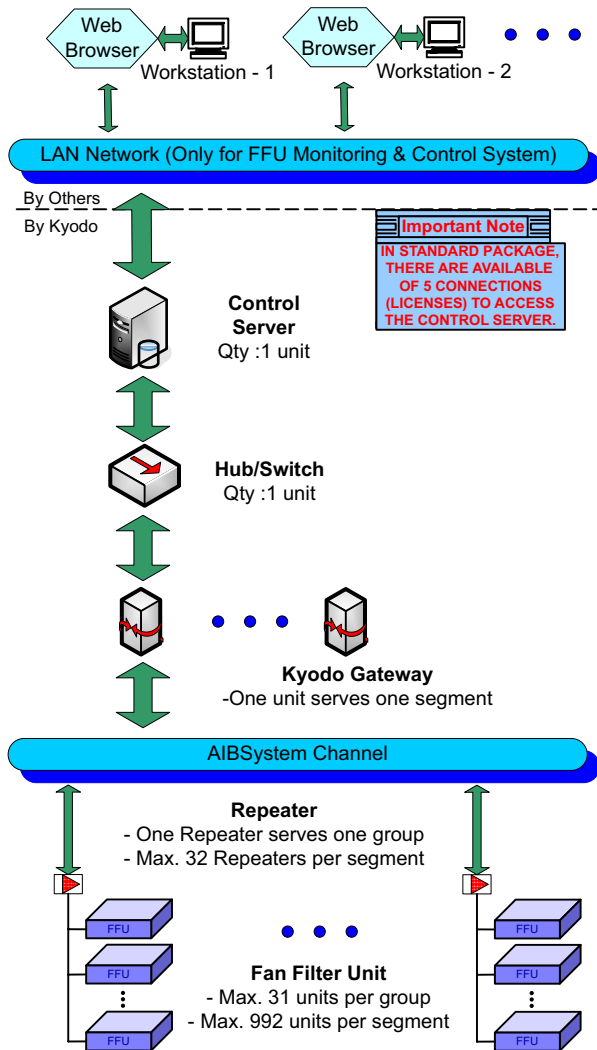

LonWorks Control System Network Architecture

FAN FILTER UNIT

DC TYPE FFU CONTROL SYSTEM

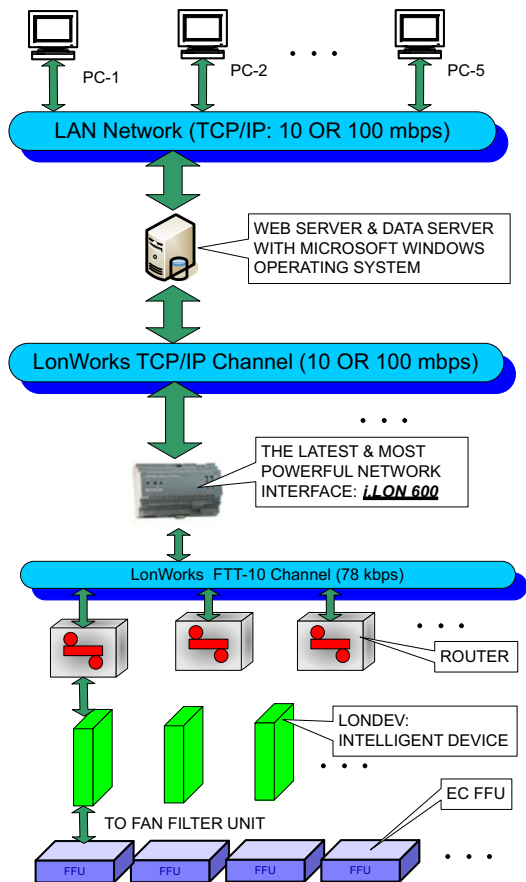### Control System Based on Advanced Internet Based System (AIBS)

- Only 2 wires needed for connection in series from PC to all FFUs.
- 2 ways communication for control & monitoring speed feedback.
- Control capacity exceed 10,000 FFUs.
- Colour changes for group / individual FFU displayed on PC in case of malfunctioning.
- Error message can be sent out automatically to inform the maintenance staff.
- Active contact provided for alarm signal.

LonWorks Control System

- Open Lontalk protocol.
- Control capacity exceed 10,000 FFUs.
- Bus topology with double terminator.
- Acquisition of real-time data.
- Advanced error signal handling configuration.
- Windows style, friendly graphical user interface.
- 2-level control through broadcasting mode.
- Precisely controlling & monitoring FFU.
- Multi-level password for different access rights.
- Automatic operation with programmable "time-switch".
- Complete on-line control & configuration.

Web Browser — Workstation - 1
Web Browser — Workstation - 2

LAN Network (Only for FFU Monitoring & Control System)

By Others
By Kyodo

Important Note
IN STANDARD PACKAGE, THERE ARE AVAILABLE OF 5 CONNECTIONS (LICENSES) TO ACCESS THE CONTROL SERVER.

Control Server
Qty :1 unit

Hub/Switch
Qty :1 unit

Kyodo Gateway
-One unit serves one segment

AIBSystem Channel

Repeater
- One Repeater serves one group
- Max. 32 Repeaters per segment

Fan Filter Unit
- Max. 31 units per group
- Max. 992 units per segment

FFU

AIBSystem Network Architecture

PC-1   PC-2 . . .   PC-5

LAN Network (TCP/IP: 10 OR 100 mbps)

WEB SERVER & DATA SERVER WITH MICROSOFT WINDOWS OPERATING SYSTEM

LonWorks TCP/IP Channel (10 OR 100 mbps)

THE LATEST & MOST POWERFUL NETWORK INTERFACE: *i.LON 600*

LonWorks FTT-10 Channel (78 kbps)

ROUTER

LONDEV: INTELLIGENT DEVICE

EC FFU

TO FAN FILTER UNIT

FFU   FFU   FFU   FFU

LonWorks System Network Architecture

FAN FILTER UNIT

FFU CONTROL SYSTEM SOFTWARE SCREEN SHOTS

FFU_DC

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