k-con®

Bespoke Solutions for Air Conditioning and Heat Pumps

Premium products for a changing world

kooltech

Manufactured & Engineered in the UK by Kooltech

k-con®

Energy, efficiency, environment

It's all under control

We understand the value of keeping ahead of the industry. That means our technical experts are continually researching and developing new products and solutions, helping you stay ahead of your competition.

It's all about you
When we work together, we don't just offer a one-size-fits-all solution. We get to know you, understanding your drivers and project requirements so we can offer you the best bespoke solution.

Our project sales and applications engineers relish a challenge, too – we take every opportunity to innovate, adding real value to the mechanics of a building any way we can. Our innovations are developed and honed by listening to you and using our experience and expertise to solve your application challenges.

It's all in the teamwork
Our engineers communicate and work closely with our design and project teams to make sure we meet your exact specifications.

We offer an end-to-end service, from the start of the project through to final commissioning.

We're experienced in a variety of products and unusual applications – from applying K-con products to meet EN378 or BREEAM requirements, future extension plans of a hotel through to providing weatherproof housings so air conditioning equipment can be installed externally. Our engineers and the K-con products work alongside Mitsubishi Electric to maximise the potential of the installation, so you can rest assured that you're getting the best value and quality at every level.

Design, manufacturing and distribution

Taking pride in our products

Our solutions are second to none, with our bespoke offerings carefully crafted to bring maximum benefits to your business.

A heritage of experience and expertise
K-con's bespoke solutions are manufactured in the UK by Kooltech, from our purpose-built, state-of-the-art facility in Glasgow. Kooltech is one of the UK's largest and most trusted distributors of air conditioning, refrigeration and heat pump equipment.

In 1994, Kooltech began distributing Mitsubishi Electric's full range of air conditioning products and we are proud to now be branded Mitsubishi Electric's exclusive UK distributor. The K-con range of bespoke solutions work in conjunction with and offer enhancements to the Mitsubishi Electric products.

Innovation and inspiration
The first K-con product was developed in 2013, when we learnt how to fit isolation valves to Mitsubishi Electric's BC Box Controllers. This meant they could isolate specific branches on the controller, enabling service and maintenance to progress without shutting down the full system.

We discovered the requirement through listening to our customers, understanding their specific issues and innovating a solution through our R&D team and the K-con factory.

This approved solution was installed on one of the largest Mitsubishi Electric jobs in the UK to date. Simple, but highly effective.

MITSUBISHI ELECTRIC

BREEAM®

EN378

Our services

Bringing our expertise to your business

Our teams of specialists are on hand to support, train and advise you every step of the way.

Kooltech: the industry experts
Bringing experience and technical expertise, our Kooltech team offers a wealth of knowledge and support right across the UK. Trusted by the industry to provide cost-effective solutions, the team works on all aspects of your project. From design and quotation through to delivery, commissioning and after-sales support, they will be there for you at all times. The team welcome a challenge, as they embrace innovation and enjoy developing new solutions.

Our bespoke technical services
Not only do we design, specify and deliver but we also have a range of excellent technical services.

These include commissioning equipment so it works exactly as it should, and offering you extensive training so you are comfortable using the controls.

Our team of experienced engineers also provide an array of services on site, providing invaluable troubleshooting for contractors and consultants alike.

On-site services for K-con, Mitsubishi Electric equipment and controls include:

- Stripping down and rebuilding P-Series and VRF
- Commissioning (including controls)
- Fault finding
- Diagnostic health checks

We build trust by engaging with our customers, so that their beliefs become our business.

Our premium products

Superior quality with a name you can trust

Our products are made with you in mind, designed and manufactured to the highest specifications. These special products work in conjunction with and offer enhancements to the Mitsubishi Electric range of air conditioning products.

"The K-con solutions from Kooltech provide its customers with enhanced adaptability for unique building designs."

Spencer Maynard, Divisional Manager – Mitsubishi Electric

Mitsubishi Electric Modifications

KS8-CMB BC Box with Port Isolation

Quick and easy maintenance with uninterrupted cooling and heating

Kooltech supply the Mitsubishi Electric Branch Controller (BC) Box with factory-fitted isolation valves on each port. By isolating individual ports, and therefore fan coils, this product enables the VRF system to still operate whilst installation or maintenance is carried out in individual rooms.

- Cat A to Cat B Fit Out without other clients services being interrupted.
- Suitable for Office Development & Refurbishment.
- Ideal for Hotel or Retail & Residential applications.
- Allows quick & easy maintenance.
- Ensures uninterrupted cooling & heating.
- Fully approved by Mitsubishi Electric UK Living Environmental Systems.

The addition of port isolation to the BC Box is designed specifically to suit applications where any downtime can adversely affect profit, such as hotel or retail application.
The isolation valves on the BC Box are perfect for use in applications where uninterrupted air conditioning is essential. This enables quick and easy installation or maintenance to be carried out on individual rooms without affecting the rest of the system. Additionally each isolation valve is fitted with a R410A / R32 compliant schrader valve to facilitate access to field pipe work.

This provides the added benefit of assisting to reduce the annual leakage rate as maintenance of individually isolated units would not require recovery of 100% of the system refrigerant volume. A system cost saving calculator is available.

Mitsubishi Electric BC Controller Model No.	K-con KS8 Port Isolation Model	Modification Description	Length (mm)	Height (mm)	Depth (mm) Box + valves	Weight (kg) Box + valves	K-con Mod Code
CMB-M104V-J	KS8-CMB-M104V-J	Standard bc 4 way ≤350	596	256	476 + 270	29.7	10101770
CMB-M106V-J	KS8-CMB-M106V-J	Standard bc 6 way	596	256	476 + 270	34.1	10101771
CMB-M108V-JA	KS8-CMB-M108V-JA	Master bc 8 way	911	258	622 + 270	54.9	10101772
CMB-M1012V-JA	KS8-CMB-M1012V-JA	Master bc 12 way	1135	258	622 + 270	70.1	10101773
CMB-M1016V-JA	KS8-CMB-M1016V-JA	Master bc 16 way ≥ 900	1135	258	622 + 270	81	10101774
CMB-P1016V-KA	KS8-CMB-P1016V-KA	Master bc 16 way 950 ≤	1135	258	622 + 270	82	10101775
CMB-M104V-KB	KS8-CMB-M104V-KB	Sub bc 4 way	596	256	476 + 270	26.7	10101776
CMB-M108V-KB	KS8-CMB-M108V-KB	Sub bc 8 way	596	256	476 + 270	37.6	10101777

KS5 BC Box Acoustic Lining

Shush…! Accomplish noise level reduction.
K-con now provide an acoustic lining to reduce the noise levels of the Mitsubishi Electric BC Box branch controllers on VRF installations to ensure specific acoustic standards.

- Jackets are available in Silver finish
- Typical noise reduction of up to 5dBA on standard CMB-M controllers
- Factory fitted to ensure correct fitting and best acoustic results

Secondary site fitting is only available via Kooltech Technical. However performance cannot be guaranteed, this is dependant upon access to the BC Box controller. Typical sound power level reduction using KS5 acoustic lining in typical installation conditions.

CMB-M BC Controller	Typical sound power reduction
Standard model	As per data book
Using K-con KS5 acoustic lining	*Up to 5dBA reduction

*BS EN ISO 3746:2010
Tested using CMB-P1016V-JA and PURY-EP500YLM

Mitsubishi Electric BC Controller Model No.	K-con Model*	Length (mm)	Height (mm)	Depth (mm)	Weight (kg)		K-con Code
					Inc BC Box (Kg)	Inc BC Box & Port Isolation (Kg)	
CMB-M104V-J1 BC CONTROLLER R410A - R32	KS5-CMBM104V-J1	596	280	500	34.35	38.45	10071048
CMB-M104V-KB1 BC CONTROLLER R410A - R32	KS5-CMBM104V-KB1	596	280	500	34.35	36.45	10071054
CMB-M106V-J1 BC CONTROLLER R410A - R32	KS5-CMBM106V-J1	596	280	500	38.25	44.15	10071049
CMB-M108V-JA1 BC CONTROLLER R410A - R32	KS5-CMBM108V-JA1	911	280	650	58.11	66.01	10071050
CMB-M108V-KB1 BC CONTROLLER R410A - R32	KS5-CMBM108V-KB1	596	280	500	42.25	50.15	10071055
CMB-M1012V-JA1 BC CONTROLLER R410A - R32	KS5-CMBM1012V-JA1	1135	280	650	82	93.10	10071051
CMB-M1016V-JA1 BC CONTROLLER R410A - R32	KS5-CMBM1016V-JA1	1135	280	650	90	104.50	10071052
CMB-P1016V-KA1 BC CONTROLLER R410A - R32	KS5-CMBM1016V-KA1	1135	280	650	92	106.50	10071053

K-con R32/Hybrid VRF System Solution

Hybrid VRF is a 2-pipe heat recovery VRF with water between the Hybrid Branch Controller (HBC) and the indoor units. With water at the indoor units, Hybrid VRF gives comfortable and stable air temperatures without the need for refrigerant in occupied spaces, meaning simple compliance to EN378 and removing the need for refrigerant leak detection.

KS8 HBC (Hybrid Branch Controller) Valve Modification

K-con offer a factory fitted and tested port isolation valve modification to the Mitsubishi Electric HBC and indoor ports. Isolation of individual ports and indoor units enables uninterrupted cooling and heating of the system whilst individual indoor units are serviced or maintained.

- Suitable for office developments or refurbishiments.
- Ideal for Hotel, retail or residential applications.
- Easy maintenance, service and future expansion without the need to shut down the whole system ensures uninterrupted cooling and heating.
- Quality assured - Factory fitted and tested valve solution.

Valves include isolation, ½" capped outlet for positioning of the Auto-Air Vent (flow), Fixed Drain-off Cock (return), 22mm capped copper stub. (Auto-Air Vents are supplied with the indoor unit valve kits).

Mitshubishi Electric BC Controller Model No.	K-con Model (box and modification)	K-con Code
CMB-WM108V-AA	KS8-CMB-WM108V-AA Master	10101004#3
CMB-WM1016V-AA	KS8-CMB-WM1016V-AA Master	10101005#3
CMB-WM108V-AB	KS8-CMB-WM108V-AB Slave	10101006#3
CMB-WM1016V-AB	KS8-CMB-WM1016V-AB Slave	10101007#3

KS8 HBC Indoor Assembled Valve Kits

Each kit includes both a flow and a return valve. Valves include isolation, 22mm capped outlet (flow) for positioning of Auto-Air Vent, fixed Drain-off Cock (return). Auto-Air Vents are included separate to position on the indoor or the HBC flow valve. Finished with ¾" or 22mm female connection to suit press-fit pipework.

Model	Full Description	K-con Code
KS8 ¾"TO 22MM HBC Valve Kit	KS8 ¾" HBC Valve Kit Assy inc. Auto-Air vent	10100978#1
KS8 1¼"TO 22MM HBC Valve Kit	KS8 1¼" HBC Valve Kit Assy inc. Auto-Air vent	10100979#1

Fast, Simple And Effective Piping Solutions

Kooltech also offer a full range of braze-free Multi-layered Composite Press-Fit pipe-work systems, expansion vessels and water filling components designed to meet Mitsubishi Electric specifications. Traditional brazing of copper pipework and fittings is not recommended for this application due to the risk of system contamination.

MLC Press Fit-Multi Layered Composite Pipe With Aluminium Barrier (BSEN/ISO 21003)

System benefits:

- Available in 50m coils reducing the number of joints and improving productivity.
- Press-fit, no hot works or brazing required.
- Inspection windows on fittings – visual check to ensure correct application.
- Light weight for easy handling and transportation.
- Formstable pipework – holds its shape once formed.
- Full training with certification will be provided nationally.
- 25 year guarantee (50 years on application).

For more information on Hybrid VRF installation materials contact us.

All available at kooltech.co.uk

kooltech

KVA-PEFY-P Vertical Alteration Of Horizontal Ducted Indoor Units

K-con now offer vertical conversions to a range of Mitsubishi Electric Ducted Units. These have their place in multi residency applications where noise reduction, space and capacity are factors that standard floor standing concealed indoor units cannot achieve.

- Narrower and quieter horizontal ducted indoor units are adapted to be installed vertically.
- Suitable for multi-residency applications.
- Alterations to a wide range of Mitsubishi Electric ducted indoor units with high stactic pressures allowing longer ductwork runs and higher capacities.

K-con offer alterations to the following models;
City Multi Range-PEFY-P VMS & VMA units (fitted with condensate pump and float switch)

Model Vertical Alteration	Code
KVA PEFY-P15VMS1-E	10100870
KVA PEFY-P20VMS1-E	10100871
KVA PEFY-P25VMS1-E	10100872
KVA PEFY-P32VMS1-E	10100873
KVA PEFY-P40VMS1-E	10100874
KVA PEFY-P50VMS1-E	10100875
KVA PEFY-P63VMS1-E	10100876

Model Vertical Alteration	Code
KVA PEFY-M20VMA-A1	10100877
KVA PEFY-M25VMA-A1	10100878
KVA PEFY-M32VMA-A1	10100879
KVA PEFY-M40VMA-A1	10100880
KVA PEFY-M50VMA-A1	10100881
KVA PEFY-M63VMA-A1	10100882
KVA PEFY-M80VMA-A1	10100883
KVA PEFY-M100VMA-A1	10100884
KVA PEFY-M125VMA-A1	10100885

When using PEAD and SEZ units with R32 refrigerant, it is the contractors responsibility ensure your gas charge is within safety limits according to EN378.

*fitted with condensate pump and float switch. (SEZ-M does not include condensate pump and/or float switch)

Case Study

Leopold Hotel, Sheffield

Client:
The Prem Hotel Group

Consultant:
Shearstone Mechanical, Rotherham Air conditioning

Contractor:
Greenhill Air conditioning, Dronfield, Derbyshire

Project Description: The Prem Hotel Group needed to replace their existing Samsung VRF system which had reached the end of its working life with a new Mitsubishi Electric VRF system to improve efficiencies and their Guest's experience.

The Leopold Hotel went through a refurbishment to 100 bedrooms including seven newMitsubishi Electric VRF systems with R2 Heat Recovery to improve efficiencies, with the added benefit that each room can be controlled independently for guest comfort.

All bedrooms include a Mitsubishi Electric PEFY-P VMS Slimline Ducted Indoor Unit enclosed in a bulkhead which links back to a Branch Controller with factory fitted K-con Port Isolation valves, making future service and maintenance to individual rooms easy without the need to shut down a complete system. Kooltech also supplied the K-con ECP Control Panel that links the Air conditioning system with a Hotel Interface.

Guests can also be reassured that their safety is paramount, you will find Mitsubishi Electric Plasma Quadtechnology in each bedroom, this innovation improves air quality by neutralising common airborne pollutants as well as inhibiting SARS-CoV-2.

K-con products used

KS8 BC Box modification including port isolation valves.
K-con ECP Control Panel.

Environmental controls

Kooltech's Technical Experts Create Bespoke K-con Panel Solutions For Your Needs.

The panels are delivered pre-wired, tested within a Form 4 panel enclosure ready to install. Once installed our approved K-con Engineer will commission on site with pre-determined, addressed software ready to run. The panels offer peace of mind, time saving installation and commissioning and will provide optimum control and efficiency for your client. Our bespoke service sets us apart from other suppliers and compliments the high quality air conditioning products distributed by Kooltech with complete manufacturers warranty.

A 10 inch colour touch screen display controller is housed in the front of the panel, which is compatible with Mitsubishi Electric City Multi, Mr Slim and M series units.

KS-ECP panels are connected to the Outdoor units via the M-net and offer display, control and monitoring of the following functions on up to 200 indoor units:

- On/Off.
- Louver position (if applicable).
- Operating mode.
- Timer settings (7-day schedule).
- Set point.
- Test run.
- Fan speed.
- Fault diagnosis.
- Return air temperature.
- Energy consumption.

Local remote controller functions can be locked:

- On/Off.
- Set point.
- Mode.
- Filter reset.

A daily, weekly and annual schedule is available. This option also allows to set-up night set back (fabric protection, HEAT 12°C). For example units can be set-up to AUTO, 23°C during the day and HEAT, 12°C during the night.

Remote Connection

KS-ECP panels are fitted with a 100 Base T Ethernet port enabling it to be connected directly to a computer via an 8 port network hub fitted within the panel. It is then possible to control and monitor all the functionality listed above. Local controller set point range can be restricted through the Centralised controller (for instance 22°C to 24°C). BacNet Via LAN 2 & PIN Code.

External Connections / Fire shut down

Indoor units will be turned off and the local remote controllers will be locked under fire alarm conditions. The panel will also display common run and fault via red and green Led lights mounted on the panel door. Additional control options available via interface.

*Full specification available upon request

Expandable Control Input / Outputs

Utilising Mitsubishi Electric Interface Modules we can expand control system

- Monitor Pulse Meter inputs .
- Measure Humidity and Temperature.
- Control 3rd Party Equipment.

KS-ECP Environmental Control Panels

Complete control - Mitsubishi Electric Air Conditioning equipment with a complete pre-wired control panel and commissioned from a single provider. Kooltech offers a new range of pre-wired touch screen display control panels fully compatible with Mitsubishi Electric City Multi, Mr Slim and M series units.

- 5 different specifications controlling up to 200 indoor units.
- Daily, weekly & annual schedules with 'Night Set Back'.
- Controlled remotely, via LAN or Wi-fi.
- Centralised and localised control options.
- Energy monitoring.
- Built in Fire Shutdown feature.
- Fully commissioned by an approved K-con Engineer.

Model	Indoor units / addresses controlled and monitored	Code
KS-ECP-01	Up to 50	10100319
KS-ECP-02	50 - 100	10100320
KS-ECP-03	100 - 150	10100321
KS-ECP-04	150 - 200	10100322
KS-ECP-05	200	10100323

KSP-ACP-IFM Auto Changeover And Fault Run Communication Panels For Server Rooms

K-con provide an Auto change over, run and fault panel specifically designed for use with Mitsubishi Electric air conditioning units serving computer rooms (N+1 communications room application) where emergency backup and rota is required. The panel runs the indoor units alternately so that the cooling load is evenly distributed over a weekly period.

- If there is a power loss or a system fault occurs, the panel will initiate the standby unit to give seamless operation and maintain room temperature conditions.
- Panels can control up to 8 air conditioning units.
- The KTR-53 interface is required to connect each indoor unit to the KSP-ACP-IFM panel via Mitsubishi Electric 3 and 5 wire adaptor.
- Fitted with high temperature thermostat for multiple air conditioning units to run. The temperature can be adjusted at the time of programming .
- Panel displays current temperature and trend over the past 12 hours.
- SMS text / Email alert option for up to 5 recipients (KSP-ACP SMS option).
- Flashing amber xenon beacon with alarm option available (KSP-ACP BEACON option).

KSP-ACP-IFM Panel
Optional display / alternative (if required)

Model	Product Code	Description
KSP-ACP-IFM2-3	10100147	Controls up to 3 indoor units
KSP-ACP-IFM4-6	10100148	Controls up to 6 indoor units
KSP-ACP-IFM7-8	10100149	Controls up to 8 indoor units Room temperature
KSP-ACP SMS / EMAIL OPTION	10100160	SMS / Email text option for up to 5 recipients
KSP-ACP BEACON ALARM OPTION	10100161	Flashing amber xenon beacon and alarm
KSP-ACP OPTIONAL DISPLAY	10100162	Configurable Optional Display
KTR-53 TRANSIT RELAY	10110349	12V-DC/24V-AC interface for

KTR-53-A Interface For Connection To Mr Slim / P Series And City Multi Systems

- Provides remote on/off enable.
- Remote contolled on/off button can be prohibited or allowed via SW1 on the KTR-53A via the 3 wire adapter, so can be used for fire shut down.
- Provides volt-free outputs for run and fault signals via 5 wire adapter.
- CE marked.

Model	Product Description	Product Code
KTR-53-A	Remote On/Off, Run / Fault Output Transit relay 12/24V AC/DC	10100335#1

KS10-RFFI-A Fire Alarm Shutdown Interface For Connection To AE-200 / EW-50 (CNS)

- Provides enable signal.
- Volt free run and fault signals via PAC-YG10 plugged into the CNS on the AE-200 / EW50 interface between the fire alarm BMS and other 3rd party control.
- Comes complete with PAC-YG10HA connection cable to AE-200 / EW-50 and power lead.
- CE marked.

PAC-YG10HA connection cable

Model	Product Description	Product Code
KS10-RFFI-A AE/EW	Fire shutdown interface Run/Fault Fire Shutdown Interlock (Requires 240V power)	10100336#1

Case Study

Hamilton Grand, St Andrews

Kooltech Revolutionises Energy Management at Hamilton Grand with Advanced VRF Control System Upgrade

Building Services Contractor: PREAH Building Services, Motherwell GLASGOW

Client: KOHLER

Project Overview: Kooltech was tasked with upgrading the obsolete control system for the existing Mitsubishi Electric VRF central control setup at Hamilton Grand, St Andrews. This system serves 26 luxury apartments across six floors and a restaurant in the basement.

Existing System: The existing setup included a Mitsubishi Electric AG-150 central controller for each floor, managing the air conditioning systems. The facilities management team, based offsite, handled issues either through routine checks or tenant reports. Daily routine checks involved visiting site and examining the AG-150 controllers and energy meter readings were also taken monthly.

Project Requirements: The primary challenge was to replace the existing AG-150 controllers and energy meters for each apartment into a single control panel for efficient billing and management.

Solution Implementation: Kooltech successfully replaced all of the old AG-150 controllers and energy meter interfaces into the K-con KS-ECP-04 control panel. This panel was configured to read the meters and relate the data to newly programmed energy management blocks for each apartment and the restaurant, providing detailed visibility of individual energy usage.

Key Features

- **Remote Access:** The K-con control panel was equipped with web access, allowing the facilities team to monitor and adjust settings remotely.
- **Quick Alerts:** Run and fault indicators on the front of the panel provide immediate alerts for any issues.
- **Fire Alarm Integration:** The panel automatically shuts down all air conditioning systems upon activation of the fire alarm,ensuring safety without manual intervention.
- **Energy Monitoring:** Energy use can be downloaded and extrapolated to provide accurate analysis on daily, monthly or annual consumption by each tenant.

Installation and Commissioning: The K-con KS-ECP-04 Control Panel was pre-configured at Kooltech's Glasgow manufacturing facility to minimise onsite labour time. After programming and testing, the panel was installed by PREAH Building Services. Kooltech then completed the setup, commissioning, and demonstration of the system to a very satisfied client.

Conclusion: The upgraded control system provides enhanced functionality, ease of use, and improved energy management for Hamilton Grand.

Refrigerant Detection

Infra-Red and Semi-Conductor Panels or Stand Alone Solutions

Legislation Met and Safety Assured

Refrigerant Detection Systems help ensure safety by detecting leaks and preventing refrigerant levels from exceeding permitted concentrations.

- Complies with EN378 for occupant safety, crucial for hotels.
- Supports BREEAM Pollution Prevention standards for sustainable building design.
- Reliable leak detection with pump-down capability.
- Flexible detection options: semi-conductor, infrared, or aspirated panel systems.
- Integrated pump-down panel and actuated ball valves for refrigerant isolation.
- Alarm system alerts occupants and staff to leaks.

Why It's Needed:

EN378 sets safety limits for refrigerant concentration, such as 0.44kg/m³ for R410A. Mitsubishi Electric's systems provide audible and visual alerts for leaks, ideal for hotel rooms and small spaces. Options range from standalone sensors to multi-point aspirated systems for various refrigerants, including R410A and R32.

KS8-RAD Multiple Digital Monitor and Alarm Display Panels

The KS8-RAD panels can connect up to 32/64 KSGD-01 Semi-conductor sensors.

RAD 32 and 64 remote interface panels for semi conductors

Model	Full Description	Code
KS8-RAD 32-B	Multiple Digital Monitor Alarm Display	10100266#2
KS8-RAD 64-B	Multiple Digital Monitoring Alarm Display	10100267#2

Summary of Refrigerant Detection Systems

Technology	Sensor	How it works	Application
Semi-conductor	Metal oxide sensor	High resistance with oxygen (air). Resistance drop occurs when the oxygen is replaced with another gas	Open, clean environments (i.e. office and hotels)
Infra-red	A gas sample tube with infra-red light emitter and sensor at opposite ends	Different gases absorb different wavelengths of infra-red light, so accurate detection is possible	Ideal for an array of applications including hotels as active detection of refrigerant sets off the alarm

KSIR-SP01 Infra-Red Sensor and Alarm

Code: 10100351#1 & 10100392#1

Standalone/Infra-red

These systems have one sensor per space which includes refrigerant sensor and visual / audible alarm. The KSIR-SP01 can be used as a standalone refrigerant leak detection sensor (24V power supply required) for EN-378 the KSIR-SP01 can be connected to a KSSP-RDU panel, up to 30 KSIR-SP01 can be connected.

- Suitable for R410A and R32 refrigerant.

Remote IR sensor

Model	Full Description	Code
KSIR-SP01 R410A	KSIR-SP01 R410A Detector 24v with remote IR sensor	10100351
KSIR-SP01 R32	KSIR-SP01 R32 Detector 24v with remote IR sensor	10100392
P-S2-D10	SPIR R32 0 - 2,000 Duct Sensor Assy	10100455
P-S2-E1	SPIR C02 0 - 10,000 15M Remote Sensor	10100442
KSTR24-J1	Transformer 24VDC - Suitable for all K-con sensors and controls	10100488

KSGD Semi Conductor Sensor with In-Built Audible and Visual Alarm

KSGD-01 can be used as a standalone refrigerant leak detection sensor (12/24 VDC power supply required) for EN-378 the KSGD-01 can be connected to either a KS8-32 RAD-A or 62 RAD-A remote display panel.

- Suitable for R410A / R32 refrigerant.

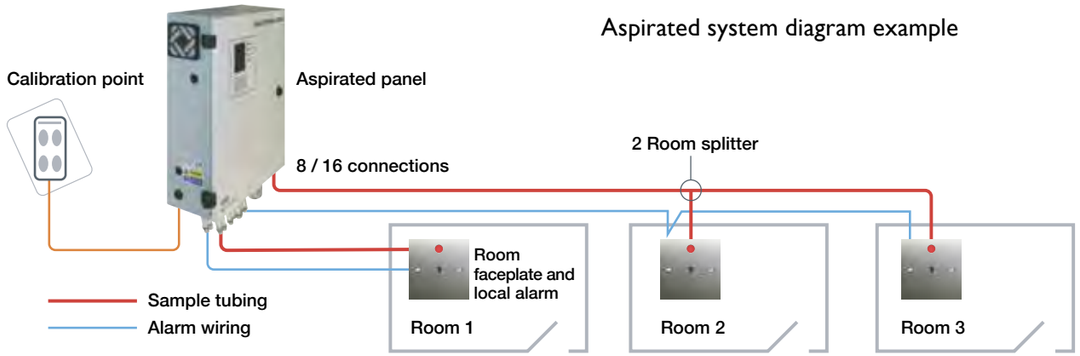
KSGD-01 semi conductor sensors (available in a range of finishes)

Model	Full Description	Code
KSGD-01W-A	White Semi-conductor sensor	10100208#1
KSGD-01S-A	Silver Semi-conductor sensor	10100207#1
KSGD-01PB-A	Brass Semi-conductor sensor	10100324
KSGD-01FLP-A	Semi-conductor sensor – ANY COLOUR	10100329
KSGD-01FLPN-A	Polished nickel Semi-conductor sensor	10100331
KSTR12-J1	KSTR12 TRANSFORMER 0.8A,12VDC	10100487
KSTR24-J1	KSTR24 TRANSFORMER 0.5A,24VDC	10100488

Aspirated Systems

These systems have one master panel sensing from multiple spaces through tubing and termination room face plates. The panels include a refrigerant sensor but require additional local visual and audible alarm for EN378 compliance. These systems can also sample two rooms per channel, enabling up to 64 rooms to be monitored. These are ideal to install with City Multi R2 heat recovery VRF systems, as the tubing and alarm wiring can be run with the refrigerant pipes.

Aspirated system diagram example



KS8-IR Aspirated Detector Packs

KS8-IR aspirated packs are of Infra-red sensing type and require a 240v AC power supply. The packs come in three different sizes which can detect a max of 16/32/64 rooms (two rooms per channel).

- Suitable for R410A and R32 refrigerant.

Refrigerant Detector	KSGD-01W	KSGD-01S	KSIR-SP	KS8-IR8C / 16C / 32C
	 Available in Brass or Chrome			
Description	Standalone white back box	Standalone silver back box	Standalone exposed	Aspirated panel
Sensing Type	Semi-conductor	Semi-conductor	Infra-red	Infra-red
Power Supply	12VDC (via KSTR12)	12VDC (via KSTR12)	24VDC (via KSTR24)	240VAC
Number of rooms	1	1	1	8 (16 max) / 16 (32 max) / 32 (64 max)
Audible alarm	✓	✓	✓	✓
Visual alarm	✓	✓	✓	✓

Additional Items For Detection Systems	Model Ref.	Code
Transformer 0.8A, 12VDC	KSTR12	10100230
Transformer 0.5A, 24VDC	KSTR24	10100231
Sampling tube 100m black	KS8-BST100	10100218
Sampling tube 250m black	KS8-BST250	10100219
Filter for aspirated detectors	KS8-IF	10100221
End of line filter	KS8-EF	10100223
Stainless faceplate C/W alarm	KS8-SSFPA	10100226
Sampling tube straight conn	KS8-STSC	10100224
Sampling tube 2 way manifold	KS8-ST2M	10100225
Brass faceplate c/w alarm	KS8-KSRA BP	10100325
Satin stainless steel faceplate c/w alarm	KS8-KSRA SS	10100337
White steel faceplate c/w alarm	KS8-KSRA WS	10100338

Remote Display Panels		
Description	Function	
KS8-IR Remote display unit	Can connect up to 6 KS8-IR aspirated panels	
KS8-RAD32 Remote display	Can connect up to 32 KSGD1 sensors	
KS8-RAD64 Remote display	Can connect up to 64 KSGD1 sensors	
KSRA1 Remote display	Can connect direct to KS8-IR aspirated panels and RAD 32/64 and KSIR-SP01	

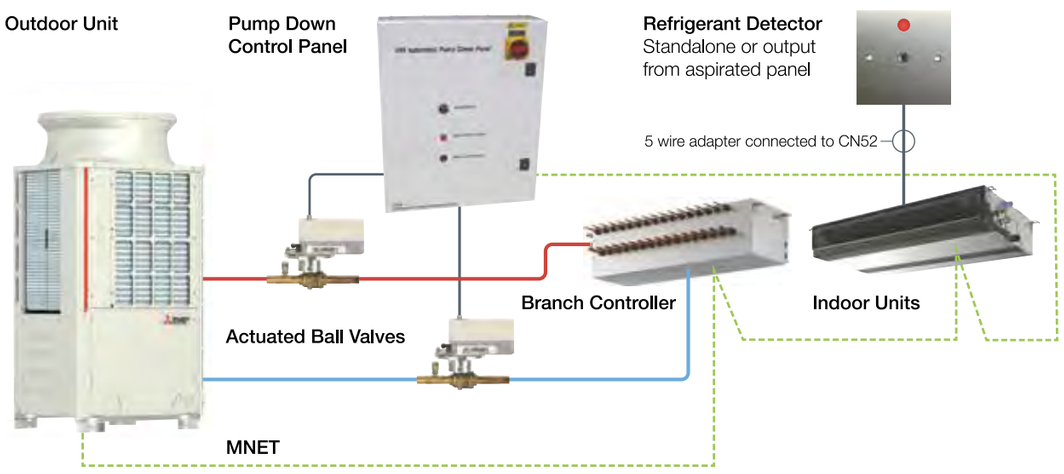
Refrigerant Pump-down Packages

Full Safety and Environmental Protection

This system provides an option to pump down and isolate the refrigerant within City Multi R2 heat recovery VRF/HVRF systems.

Components are available to work alongside any of the leak detection systems including standalone and aspirated, to provide full safety and environmental protection from refrigerant leakage.

These systems can help achieve recognition within the Pollution section of BREEAM, subject to evaluation by an accredited BREEAM assessor. Pollution Prevention within.



KS8-OC VRF Pump Down Panels

The controls panel is required to pump the refrigerant down in the system, providing the link detection system and the Mitsubishi Electric City Multi R2 heat recovery VRF system.

Panels are available to control from one to eight outdoor units.

Automatic pump down is only currently available on City Multi R2 heat recovery VRF (PURY, YHM, YJM, YKM, YNW models).

Model	Full Description	VRF units controlled	Product Code
KS8-OC1	VRF Pump down control panel	1	10100096
KS8-OC2	VRF Pump down control panel	2	10100092
KS8-OC3	VRF Pump down control panel	3	10100099
KS8-OC4	VRF Pump down control panel	4	10100098
KS8-OC5	VRF Pump down control panel	5	10100100
KS8-OC6	VRF Pump down control panel	6	10100101
KS8-OC7	VRF Pump down control panel	7	10100102
KS8-OC8	VRF Pump down control panel	8	10100097

KS8-ABV Actuated Ball Valves

The actuated ball valves enable the system to isolate refrigerant during and after pump down to minimise the effect of any refrigerant leakage should this occur, with one on the high and one on the low pressure refrigerant pipework of each system, situated between the outdoor and branch controller.

Model	Full Description	Code
KS8- 5/8ABV	5/8 Actuated ball valve	70040081
KS8-3/4ABV	3/4 Actuated ball valve	70040082
KS8-7/8ABV	7/8 Actuated ball valve	70040083
KS8-1.1/8ABV	1.1/8 Actuated ball valve	70040084
KS8-1.3/8ABV	1.3/8 Actuated ball valve	70040085
KS8-1.5/8ABV	1.5/8 Actuated ball valve	70040086

Temperature and CO_2 Sensors

Discrete, accurate and efficient

KS9-BS1 Temperature Sensors

K-con offer a remote temperature sensor designed to be a discreet means of providing accurate temperature readings. Ideal for use in hotel and residential applications where aesthetics are an important consideration.

- Low profile for discreet installation.
- Can be painted to blend into surroundings.
- Optimum room temperature control without the need for an unsightly box on the wall.

Lossnay CO_2 Control Package

Kooltech supply a range of standalone CO_2 sensors that can be used to accurately detect the presence of carbon dioxide within a room. Manufactured to the highest standard, the sensor can adjust the Lossnay speed to suit the number of people within a space and therefore improve the efficiency of an already proficient Lossnay system. By adjusting the speed of the Lossnay, the system will provide a cost-saving over a 12-month period.

KS-BA CO_2 Room Sensor

Wall mounted 0-10V Standalone sensor.

- 24Vdc stand alone CO2 detector.
- CO2 range 0-2000pm (0-10vdc).
- 3 LED CO2 level indicators on the front of the unit.
- Can control the Lossnay fan speed up to 4 steps.
- Auto adjustment of speed results in energy cost savings.
- Also available as 4-20 mA and 2 alarm relay versions.

Model	Description	Dimensions (L x W x H)	K-con Code
KS-BA/AQX-D	CO_2 Lossnay Control 0-10V	111.8 x 76.2 x 27.6mm	10100366
KSTR24-J1	24VDC Transformer	75mm x 47.5mm x 26.5 mm	10100488

CO_2 Duct and Harsh Environment Sensors

The KS-BA CO_2 Duct and Harsh Environment Sensor is an accurate and reliable way of incorporating demand-controlled ventilation for Mitsubishi Lossnay units. The Duct unit samples duct air using an aspiration tube. The Harsh Environment unit features a ventilated Box and is ideal for areas such as outdoor air plenums, equipment rooms, green houses and warehouses. The CO_2 level is indicated as 'Good, Fair or Poor' by three LED's on the front of the unit.

Harsh Environment Sensor

Duct Sensor

Model	Description	Dimensions	K-con Code
KS-BA/DCD10-D-BB	CO_2 Duct Mounted Control Sensor 0-10V	127 x 104.4 x 63.5mm Probe 132.7mm	10100367
KS-BA/DCD10-V-BB	CO_2 Harsh Env Duct Control Sensor 0-10V	127 x 104.3 x 63.5mm Probe 132.7mm	10100368
KSTR24-J1	24VDC Transformer	75 x 47.5 x 26.5 mm	10100488

Lossnay

Limited space? Put it outside.

KS4-KWH RVX Lossnay Weatherproof Housings

IP 43 Rated, weatherproof housing has been designed to enable outdoor installation of the entire Mitsubishi Electric Lossnay range to be installed either on the roof or at ground level. Ideal for any application where indoor space is limited or restrictive.

- High quality galvanised steel construction.
- Epoxy painted.
- Custom paint finishes to a RAL number available on request.

Weatherproof Lossnay Housings are manufactured from A high quality powder coated galvanised steel the housings are supplied flat-packed.

MODEL	LOSSNAY UNIT	A (mm)	B (mm)	C (mm)	Weight (kg)
KS4-KWH 25RVX3-E	LGH-25RVX(3)-E	879	798	342	23.5
KS4-KWH 35RVX3-E	LGH-35RVX(3)-E	1012	910	383	23.5
KS4-KWH 50RVX3-E	LGH-50RVX(3)-E	1160	910	367	24.5
KS4-KWH 65RVX-E	LGH-65RVX-E	1094	926	455	28.5
KS4-KWH 65RVX3-E	LGH-65RVX(3)-E	1094	926	455	28.5
KS4-KWH 80RVX3-E	LGH-80RVX(3)-E	1150	1164	454	35.5
KS4-KWH 100RVX3	LGH-100RVX(3)-E	1371	1163	454	41.88
KS4-KWH 150RVX3	LGH-150RVX-E	1150	1164	857	52
KS4-KWH 160RVX3	LGH-160RVX3-E	1150	1164	857	52
KS4-KWH 200RVX3	LGH-200RVX(3)-E	1371	1164	857	57

Lossnay Heaters

Lossnay Heaters can be positioned to be used as a preheater or after heater to the Lossnay.

After Heater

After heaters are used to prevent cold drafts when the outside ambient is at a lower temperature. This ensures full recovery from the heat exchanger core, as the heaters are thyristor control.
Only the required energy is used to bring the supply air up to the programmed set point.
The heater is also interlocked with the Lossnay for run on and control.

- Heater Capacities: 0.75Kw to 7.5Kw.
- Sizes: 100 mm - 350 mm diameter.

Preheater

Lossnay Preheaters are used to prevent condensation and freezing of the cores within the Lossnay at very low temperatures.
This can be controlled by the software within the Lossnay control. Please check what your minimum outside ambient temperature will be in operation of the Lossnay.

Model	Diameter (mm)	Back Up Heater (kW)	Code
KLH-TC15-0.75	100	0.75	10070300
KLH-TC15-1.0	100	1	10070301
KLH-TC25/35-1.0	150	1	10070305
KLH-TC25/35-1.5	150	1.5	10070306
KLH-TC25/35-2.0	200	2	10070307
KLH-TC25/35-2.5	150	2.5	10070308
KLH-TC50/65-2.0	200	2	10070310
KLH-TC50/65-2.5	200	2.5	10070311
KLH-TC50/65-3.0	200	3	10070312
KLH-TC80/100-2.5	250	2.5	10070315
KLH-TC80/100-3.0	250	3	10070316
KLH-TC80-200-4.5	250	4.5	10070320
KLH-TC80-200-6.0	250	6	10070321
KLH-TC80/200-2.5	315	2.5	10070326
KLH-TC80/200-2.5	300	2.5	10070328
KLH-TC80/200-4.0	355	4	10070327
KLH-TC80/200-5.0	400	5	10070329
KLH-TC150/200-7.5	250	7.5	10070325
KLH-TC150-2.5	350	2.5	10070333
KLH-TC250-8.0	355	8	10070332

Mitsubishi Electric PZ-62DR-EB Controller MUST be used to configure Lossnay Heater settings

Other Kw Duty and Duct Sizes are available on Request

Other Products

KSTR 12/24v Transformers

The 12/12v transformers can be used with Mitsubishi Electric products that require 12/24v power supply.

- Used to power up KSGD-01 semi-conductor sensors.
- Used with Mitsubishi Electric products that require 12/24v power supply including PAC YG66/63 interfaces.

Model	Full Description	Code
KSTR12	KSTR12 Transformer 0.8A,12VDC	10100487
KSTR24	KSTR24 Transformer 0.5A,24VDC	10100488

DTS-541 Energy Meter

Code: 90014944

The DTS-541 is a current transformer-operated 5 amp Multifunction electronic kWh meter.
The meter is set up as standard to show on the fixed register, Import Kwh on the Manual register Amps per phase, Volts per phase, Import kWh, Export kWh, Import kvarh, C.T ratio (X5), Fault screen and End. More parameters can be added if required.

- Four-rate fully programmable with an in built time switch.
- Large easy-to-read LCD display can be programmed with automatic scroll register, fixed register or manual scroll register.
- 1 Pulse output = 1Kw

KS10 Differential Pressure Switch

Code: 10100580

The Differential pressure switch is used to monitor the difference in two pressures.

- Monitor filter, heat pump boiler, pump condition
- Signal when flow or pressure from these devices fall or rise to an alarm condition.
- For all applications where air, oil or water is to be monitored.

K-con Code	Model	Full Description
10100580	KS10-EP200S	KS10-EP200S 0.015-0.25 DIFFERENTIAL PRESSURE SWITCH External Adjust
10100257	KS10-DPS 0.07-1	KS10-DPS 0.07-1 DIFFERENTIAL PRESSURE SWITCH
10100258	KS10-DPS 0.2-4	KS10 -DPS 0.2-4 DIFFERENTIAL PRESSURE SWITCH
10100245	KS10-DPS 2-28	KS10 -DPS 2-28 DIFFERENTIAL PRESSURE SWITCH

Sustainable Heating

Hot Water Storage

Using a stainless steel hot water cylinder over a regular steel water cylinder offers several advantages, especially in areas with soft water. Stainless steel is highly resistant to corrosion and rust, making it ideal for environments where water quality might be a concern. In soft water areas, regular steel cylinders are more prone to corrosion due to the absence of protective minerals in the water.

Stainless steel does not alter the chemical composition of water. This is crucial for maintaining water purity and, essential for meeting standards required for warranty of heat pump technology. Regular steel cylinders may corrode over time, potentially introducing metallic contaminants into the water supply. Stainless steel cylinders, on the other hand, preserve the integrity of the water, ensuring it remains safe and free from any unwanted chemical changes.

The use of a stainless steel hot water cylinder offers superior durability and water purity compared to traditional steel cylinders, particularly in areas with soft water where corrosion is a concern.

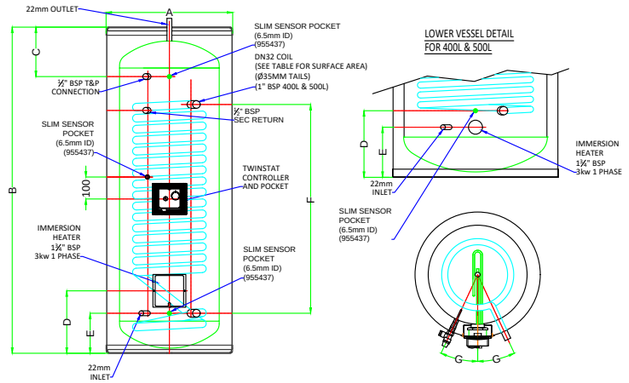
KS1-WHP-74

Precision-engineered for Ecodan, this system features high-capacity stainless steel coils (up to 40l/min) for durability and performance. Includes unvented kit, immersion for pasteurisation, and dual thermostat.

- **Optimised Design:** Designed by K-con specifically for use with Mitsubishi Electric Ecodan Cascade units.
- **Efficient Heat Transfer:** Large coil surface areas ensure the appropriate transfer of heat.
- **Versatile Application:** Ideal for larger homes and light commercial premises.
- **Pasteurisation Ready:** Includes an immersion heater for pasteurization purposes.
- **Dual Thermostat:** Comes equipped with a dual thermostat for precise temperature control.

Bespoke

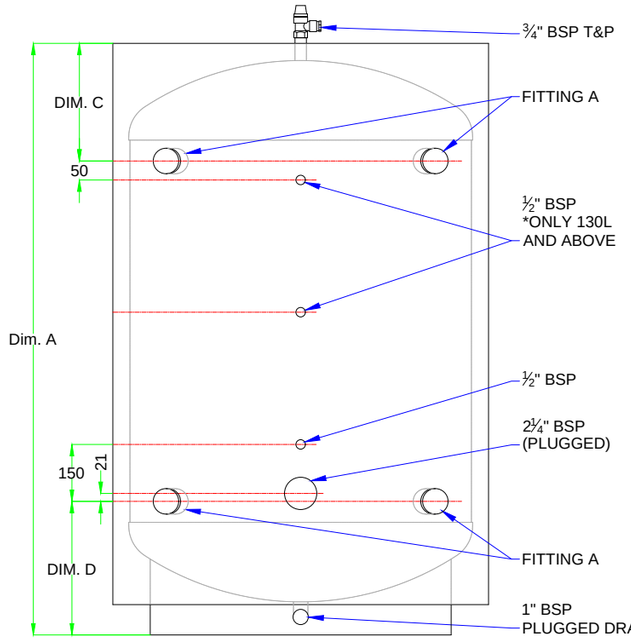
Most heat pump technology operates on a 5°C Delta T, leading to high flow rates. To ensure optimal flow velocity, vessel connections should be tailored to suit system demands. Whether you require additional ports, larger bore coils for DHW generation, or customised features, we can provide a solution built to your exact specifications.

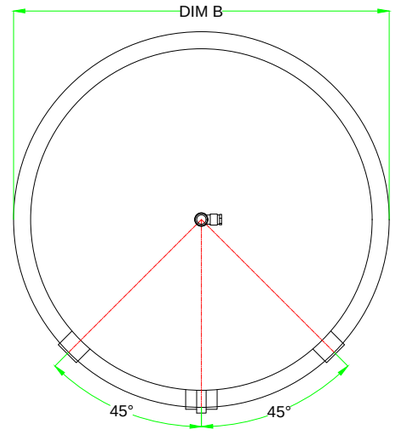


K-con code	Volume (L)	Coil size	A	B	C	D	E	F	G	Expansion Vessel
10102125	150	(2m²)	575	1085	225	284	182	650	25°	18l
10102126	175	(2m²)	575	1242	225	284	182	650	25°	18l
10102127	215	(2m²)	575	1485	225	284	182	950	25°	24l
10102128	255	(2m²)	575	1752	225	284	182	950	25°	24l
10102130	305	(2m²)	575	2028	225	284	182	950	25°	35l
10102131	400	(2m²)	750	1405	262	303	228	400	18°	35l
10102132	500	(2m²)	750	1690	262	303	228	400	18°	50l
*1" Unvented kit supplied with all vessels										

KS1-WB-71

Designed for heat pump compatibility. Featuring large tappings and minimal pressure drop, they maximise efficiency and adaptability for various heating needs.





K-Con Code	Volume (L)	Dim A (mm)	Dim B (mm)	Dim C mm)	Dim D (mm)	Fitting A
10102155	80	645	575	222	205	2" BSP FEMALE
10102156	100	791	575	222	205	2" BSP FEMALE
10102157	130	958	575	222	205	2" BSP FEMALE
10102158	150	1086	575	222	205	2" BSP FEMALE
10102159	175	1242	575	222	205	2" BSP FEMALE
10102160	215	1484	575	222	205	2" BSP FEMALE
10102161	255	1753	575	222	205	2" BSP FEMALE
10102162	305	2029	575	222	205	2" BSP FEMALE
10102163	400	1430	750	254	295	2" BSP FEMALE
10102164	500	1715	750	254	295	2" BSP FEMALE
10102165	800	1547	990	310	355	2" BSP FEMALE
10102167	1000	1850	990	310	355	2" BSP FEMALE
10102168	1500	2187	1090	350	395	2½" BSP FEMALE
10102169	2000	2117	1290	458	509	2½" BSP FEMALE
10102170	2500	2547	1290	458	509	3" BSP FEMALE
10102171	3000	2960	1290	458	509	3" BSP FEMALE
*Lifting lugs option will add 150mm to dim. A skirt and drain only fitted to 400L and above						

Key Features:

- Optimised Design: Designed by K-con specifically for use with Mitsubishi Electric and Climaveneta Heat Pumps and Chillers.
- Flexibility: Range from 80 – 3000L.
- Versatile Application: Ideal for commercial and industrial premises.
- Durability: Maximum working pressure of 6 bar.
- Customisable: Through our modifications process, we can alter this vessel in a significant number of ways.

GENERAL NOTES:
SIDE VIEW TO BE USED IN CONJUNCTION WITH PLAN VIEW.

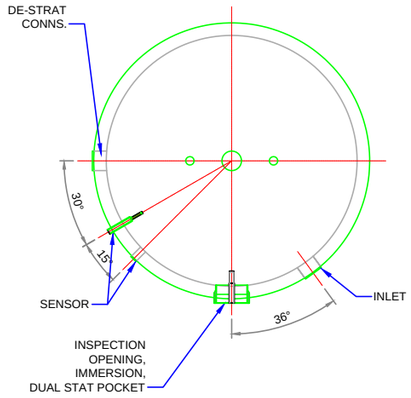
CONSTRUCTION:
INNER VESSEL MATERIAL: LDX 2101
OUTER CLADDING MATERIAL: PLASTISOL
UNIT THERMALLY INSULATED WITH POLYURETHANE
CONNECTIONS: LDX 2101

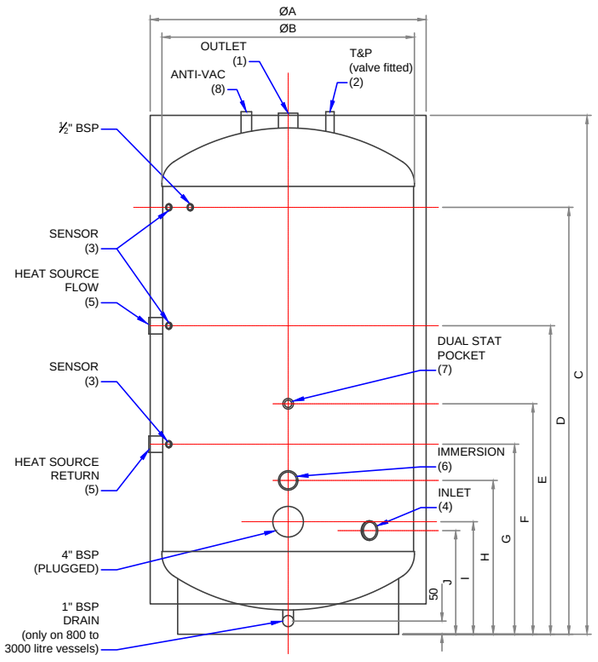
CONNECTION BOSSES TO PROJECT APPROX 5MM FROM CLADDING. T & P VALVE & DRAIN BOSSES TO BE BS21 TAPER FEMALE THREADS. SHELLS & ENDS DESIGNED TO GOOD ENGINEERING PRACTICE.

DESIGN LIMITATIONS:
MAX WORKING PRESSURE: 6 BAR
DESIGN TEMPERATURE: 100°C
HYDRAULIC TEST PRESSURE: 9 BAR

KS1-WH-35

Designed for high performance. With large flow and return connections to manage high flow rates and maintain low delta T's, they feature matched cold feed and hot outlet for seamless integration with K-con's commercial heat pump solutions.





Key Features:

- Design: Flow and Return tapings located to optimise recovery from heat pump technology.
- Maintenance-Free: No sacrificial anodes required.
- Vessel Warranty: Enjoy peace of mind with a 5-year warranty on the vessel.
- Premium Material: Crafted from Duplex stainless steel for durability.
- Craftsmanship: Designed and manufactured in the UK.
- Application: Can be used in both hard and soft water areas.

GENERAL NOTES:
Side view to be used in Conjunction with plan view.

DESIGN LIMITATIONS:
Max working pressure: 6 bar
Design temperature: 100°C
Hydraulic test pressure: 10 bar

CONSTRUCTION:
Inner vessel material: duplex st/st 3mm dished ends, 1.5mm wrapper outer cladding material: plastisol (white) Unit thermally insulated with polyurethane Connections: LDX 2101 (en 1.4162) Threaded connections to project approx 5mm from cladding. Slim sensor pockets to project approx 15mm from cladding. T&P valve boss to be BS21 taper female thread. Shells & ends designed to good engineering practice.

K-con code	Dimensions										
	Volume (L)	A	B	C	D	E	F	G	H	I	J
10102140	500	750	650	1690	1393	1018	793	643	440	290	258
10102141	800	990	900	1627	1232	952	727	672	554	404	372
10102142	1000	990	900	1887	1532	1152	927	772	554	404	372
10102143	1500	1090	1000	2187	1845	1365	1140	885	567	417	385
10102144	2000	1290	1200	2117	1670	1280	1155	890	677	527	495
10102145	2500	1290	1200	2547	2109	1499	1274	890	677	527	495
10102146	3000	1290	1200	2960	2522	1706	1481	890	677	527	495

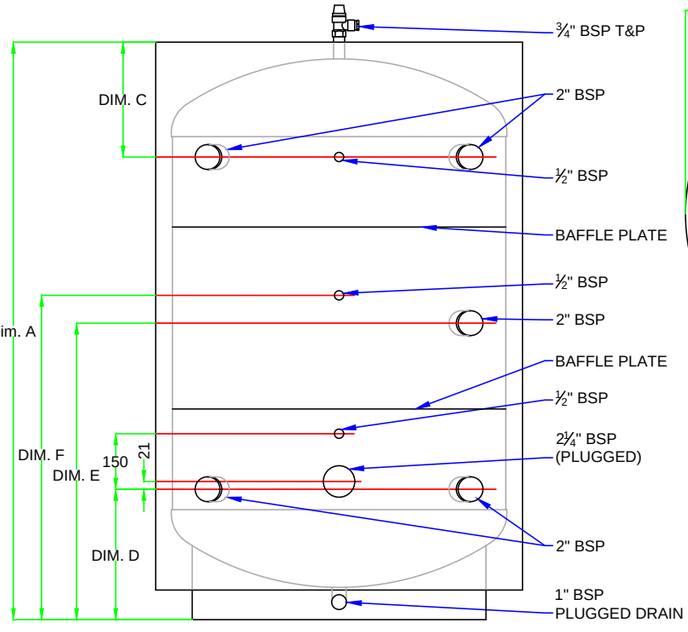
Vessel Volume (l)	Conn. Sizes (female bsp thread)								T&P Rating
	1	2	3	4	5	6	7	8	
500	2"	¾"	Sensor pocket	2"	2"	2¼"	Dual stat	N/a	25kw
800/1000	2"	¾"	Sensor pocket	2"	2"	2¼"	Dual stat	1"	25kw
1500/2000	2½"	1"	Sensor pocket	2½"	2"	2¼"	Dual stat	1"	50kw
2500/3000	3"	1"	Sensor pocket	3"	2"	2¼"	Dual stat	1"	50kw

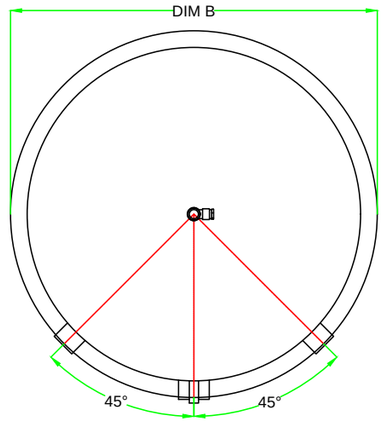
KS1-WH-72

Designed for the QAHV CO2 heat pump, this system features five large ports for flexibility in the potable store method. Baffle plates enhance stratification, reducing return temperatures to optimise performance and efficiency.

Key Features:

- Optimised Design: Designed by K-con specifically for use with Mitsubishi Electric QAHV Potable Store method.
- Enhanced Stratification: Includes two diffusers to encourage stratification.
- Versatile Application: Ideal for commercial and industrial premises.
- Durability: Maximum working pressure of 6 bar.
- 2" Flow /Return: Large ports to reduce flow velocity under high load.



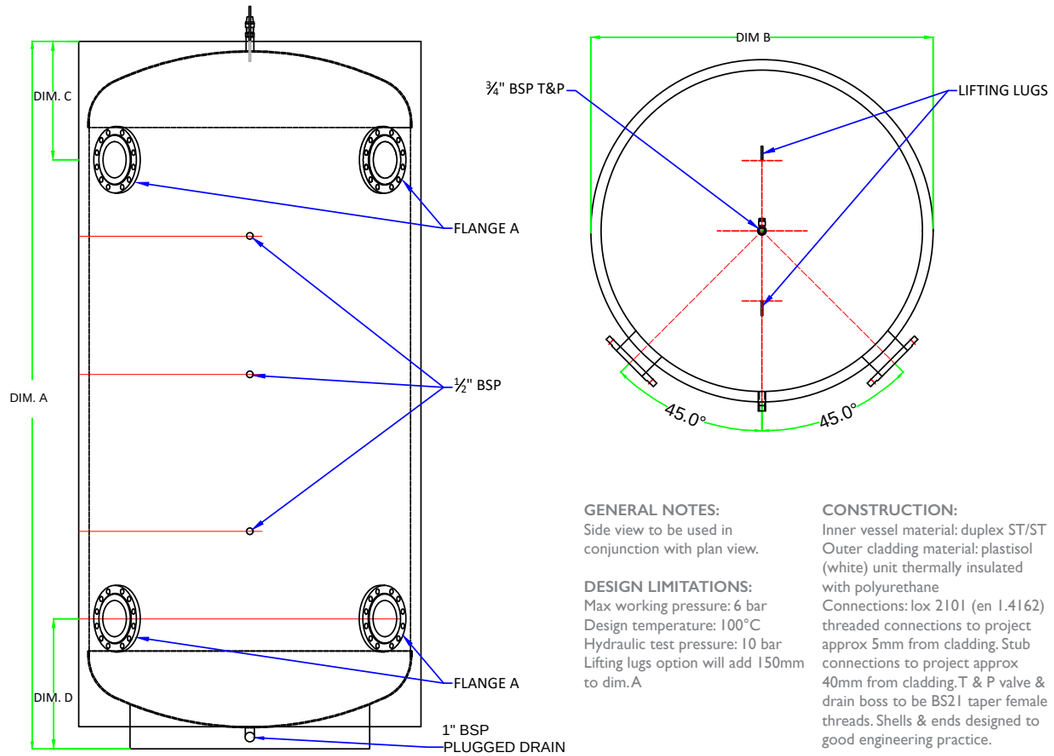


K-con code	Volume (L)	Dim A (mm)	Dim B (mm)	Dim C (mm)	Dim D (mm)	Dim E (mm)	Dim F (mm)
10102180	500	1715	750	254	295	879	953
10102181	800	1547	990	310	355	800	871
10102182	1000	1850	990	310	355	952	1022
10102183	1500	2187	1090	350	395	1150	1190
10102184	2000	2117	1090	350	395	1081	1156
10102185	2500	2547	1290	458	509	1301	1376
10102186	3000	2960	1290	458	509	1521	1596
*Lifting lugs option will add 150mm to dim. A							

GENERAL NOTES:
Side view to be used in conjunction with plan view.

CONSTRUCTION:
Inner vessel material: LDX 2101
Outer cladding material: plastisol
Unit thermally insulated with polyurethane
Connections: XLDX 2101
Connection bosses to project approx 5mm from cladding.
T & P valve & drain bosses to be BS21 taper female threads.
Shells & ends designed to good engineering practice.

DESIGN LIMITATIONS:
Max working pressure: 6 bar
Design temperature: 100°C
Hydraulic test pressure: 9 bar



GENERAL NOTES:
Side view to be used in conjunction with plan view.

DESIGN LIMITATIONS:
Max working pressure: 6 bar
Design temperature: 100°C
Hydraulic test pressure: 10 bar
Lifting lugs option will add 150mm to dim. A

CONSTRUCTION:
Inner vessel material: duplex ST/ST
Outer cladding material: plastisol (white) unit thermally insulated with polyurethane
Connections: Iox 2101 (en 1.4162) threaded connections to project approx 5mm from cladding. Stub connections to project approx 40mm from cladding. T & P valve & drain boss to be BS21 taper female threads. Shells & ends designed to good engineering practice.

K-con Code	Volume (L)	Dim A (mm)	Dim B (mm)	Dim C (mm)	Dim D (mm)	Flange A
10102189	1000	1850	990	320	374	4"
10102190	1500	2203	1090	333	387	4"
10102191	2000	2145	1290	440	496	4"
10102192	2500	2547	1290	453	509	5"
10102193	3000	2960	1290	453	509	5"
10102194	3500	2787	1480	517	597	6"
10102195	4000	3124	1480	517	597	6"
10102196	4500	3461	1480	517	597	6"
10102197	5000	2974	1690	550	630	8"
10102198	5500	3226	1690	550	630	8"
10102199	6000	3478	1690	550	630	8"

KS1-WB-41

Ranging from 1000 to 6000 litres, these thermal stores are crafted specifically for medium to large scale commercial heating and cooling applications. The thermal stores feature flanged connection points which accommodate for the large mass flow rates of industrial heat pumps.

Key Features

- Optimised Design: Designed by K-con specifically for use with Mitsubishi Electric and Climaveneta Heat Pumps and Chillers
- Versatility: Strategically designed to accommodate large mass flow rates of water from cascades or large industrial units.
- Flexibility: Range from 1000 to 6000 litres
- Bespoke Design: We can customise the design in various ways to satisfy project requirements.

Heat Exchangers

Our standard range of products are based on SWEPs Brazed Plate Heat Exchanger (BPHE). This is constructed as a plate package of corrugated channel plates with a filler material between each plate. During the vacuum brazing process, the filler material forms a brazed joint at every contact point between the plates, creating complex channels.

The BPHE allows media at different temperatures to come into close proximity, separated only by channel plates that enable heat from one media to be transferred to the other with very high efficiency. The concept is like other plate and frame technology, but without the gaskets and frame parts.

Bespoke

We are a dedicated SWEP supplier, specialising in providing quality solutions. At K-con, our team of experts are ready to assist you in tailoring your plate heat exchanger selection to meet your unique needs. Leveraging the cutting-edge SWEP Software Package, we have the in-house capability to swiftly and efficiently design, select, and price the entire product, meeting your needs with precision and excellence.

Circulation Pumps

Circulation pumps are critical to heat pump systems as they are responsible for moving the water around the system. We offer a wide range of pumps for various applications from domestic to commercial and industrial scales. In addition to having a standard range of pumps suitable for most applications, we also have an in-house team capable of sizing and selecting bespoke pumps for more complex systems.

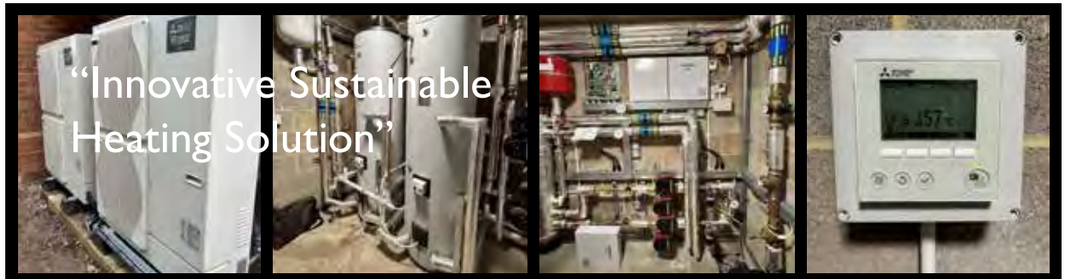
Bespoke

We are a dedicated Lowara supplier, and have an in-house team specialising in sizing and selecting pumps to meet the strict requirements of heat pump technology.

Our work

Find out what our clients have to say...

We've worked with a range of organisations to deliver bespoke solutions across a variety of locations. But what all our projects have in common is a commitment to getting it right before, during and after... here's what some of our clients say about us.



Application:
Student Accommodation Block

Solution:
Full Commercial Heating Solution Integrating Mitsubishi Electric Ecodans And High Recovery Vessels

Location
Hartpury, Gloucester

Student Accommodation Block, Hartpury, Gloucester

The student accommodation block posed several challenges, particularly regarding energy efficiency and environmental impact. The existing hot water system required an upgrade to meet modern sustainability standards while ensuring an uninterrupted supply of hot water to serve the building's needs.

Our innovative solution involved the integration of high Recovery Vessels and Mitsubishi Electric Ecodan, designed to optimise energy efficiency and minimise the environmental footprint of the hot water system.

The system features 2 High Recovery Vessels, each capable of storing 600 litres of hot water. These vessels were selected for their efficiency, recovering the full volume in under 90 minutes. The solution also includes Mitsubishi Electric Ecodan heat pumps, which use the eco-friendly R32 refrigerant, known for its lower global warming potential. These pumps deliver a 28kW output, even in extreme conditions down to -7°C, ensuring a reliable hot water supply. This solution significantly enhances sustainability, reduces environmental impact, and improves both cost savings and system reliability for the student accommodation block. The use of R32 refrigerant and lower energy consumption, thanks to high recovery vessels and energy-efficient Mitsubishi Electric Ecodan products minimises greenhouse gas emissions and contributes to a reduced carbon footprint, aligning with our commitment to environmental responsibility.

The system's efficiency leads to significant cost savings in terms of energy consumption, ultimately benefiting both the environment and the client's budget.

The 90-minute recovery time ensures a continuous supply of hot water, even during peak demand periods, enhancing the overall reliability of the system.

K-con Products used

K-con High Recovery Hot Water Storage Vessels

Application: Refurbished Victorian School

Solution: Heating and hot water solution integrated K-con thermal vessels and hot water cylinders

Location: London

Riverside Primary School, Bermondsey, London

The refurbishment and extension of this historic school required a carefully engineered heating solution to align with both spatial constraints and stringent noise regulations. Neilcott Construction Ltd awarded the mechanical package to HOB Mechanical Services who took over the design process for the pre-specified Mitsubishi Electric equipment. Collaborating closely with Kooltech, the team successfully addressed the project's unique challenges to deliver a high-performance, future-proof heating system.

The designated plantroom was too small to accommodate the originally specified four vessels, necessitating a space-efficient alternative. Stringent noise control measures were required due to the school's location within a densely populated residential area.

Recognising the spatial limitations and optimising heat pump efficiency, two thermal storage vessels from the bespoke K-con product range were selected. These tailor-made, stainless steel-clad vessels were externally mounted, maximising valuable internal space within the plantroom and allowing for two domestic hot water cylinders to be positioned internally and connected to the Mitsubishi Electric QAHV heat pump units.

To address the noise concerns, top and side acoustic enclosures were incorporated into the design, achieving an additional 8dBA reduction from the two Mitsubishi Electric CAHV air source heat pump units. This ensured minimal disturbance to the surrounding residential community. The CAHV units feature an integrated noise reduction input for additional attenuation in extreme conditions, making them highly suitable for this application.

Luke Edwards, Contracts Manager at HOB Mechanical Services "Working with Kooltech meant that we found a solution to meet the stringent needs for this project. They designed the vessels to purposely meet our space issue requirements. We look forward to working with them on future projects as we know they are able to customise their K-con products to suit."

K-con Products used

K-con High Recovery Hot Water Storage Vessels

Client:
Muse Developments

Contractor:
Richard Irvine Energy Solutions

Consulting Engineer:
Atelier Ten

The Marischal Square, Aberdeen

The Marischal Square Development is designed to transform the centre of Aberdeen. This 16,119m^2 scheme of BREEAM Excellence comprises of two buildings including Grade A office accommodation and a 4-star Residence Inn by Marriott hotel.

Our offering assisted in the development being awarded BREEAM Excellent.

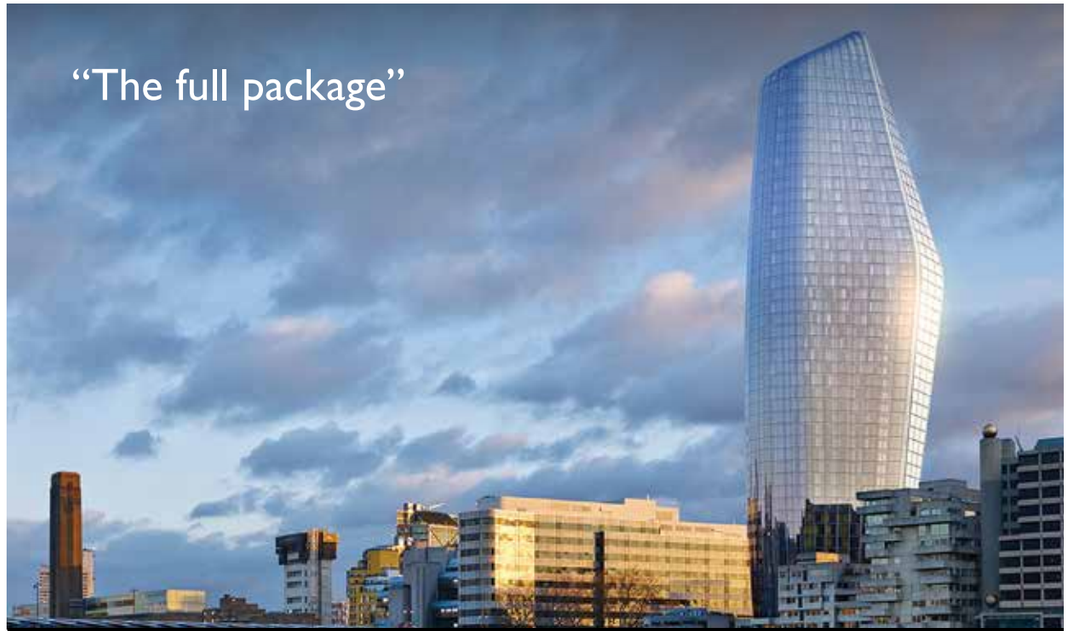
The design was based on four systems per floor plate, all capable of providing simultaneous heating and cooling with future expansion and flexibility in mind for future tenants.

K-con KS8 BC Box controllers with port isolation valves were installed to allow for future expansion and alterations. This BC box is perfect for use in any application where uninterrupted air conditioning is essential. With the constant rise of refrigerant gas prices, these systems can reduce annual leakage by isolating serviced units and not requiring recovery of 100% of the system refrigerant volume. The BC boxes are ideal for any office development or hotel/residential application.

K-con KS9 discreet button sensors were also used on this project. These sensors are designed to be a discreet means of providing accurate temperature readings. They are low profile and can be painted to blend into surroundings.

K-con products used

KS9 discreet temperature sensors.
KS8 BC box modification including port isolation valves.



Client: St George - Berkeley Group
Consulting Engineer: Hoare Lea

Mechanical & Electrical Contractor:
Designer Group (Shell & Core)
Briggs & Forrester (Fit-out)

Air Conditioning Contractor:
Atmosphere Air Conditioning

One Blackfriars, London

K-con range of BC Boxes with both Acoustic Pack treatment and port isolation valves have been utilised to enable phased installation and handover of all relevant areas. Future service and maintenance cost would be kept to a minimum and acoustic treatment to the BC box controllers. Along with the KS9 temperature sensors fitted within the rooms would ensure occupant comfort.

Having worked closely with the professional team and securing the Shell & Core package, Kooltech are naturally supplying all aspects of the VRF heating and cooling system for the Fit-Out works for each of the 900 apartments and supplementary areas.

Key aspects of Kooltech’s involvement include: Kooltech’s discreet remote temperature sensors utilised throughout. Repackaging, identification and shrink wrapping of all indoor units, together with Kooltech’s ability to supply all ancillary equipment including pipework, refrigerant, bracketry and fixings, all under our accredited FORS Delivery management, offering the client a ‘One Stop Shop’ solution for the complete VRF systems for this prestigious development.

K-con products used

KS9 discreet temperature sensors.
KS8 BC box modification including port isolation valves.

Get in touch...

We challenge ourselves to bring new ideas and innovative solutions. We constantly look forward to the next challenge. We'd love to hear from you and are always happy to help.

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"Working together delivering innovation and excellence"

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