



TECHNICAL SUBMITTAL SHEET

TS No:	KH-TS-004	Revision:	02
Date:	22/05/2014	Project No:	KH0153
To:	Andy Jarvis David Laing	Project:	The Royal College of Ophthalmologists
Of:	E3 Consulting Engineers Bennetts Associates		
Copy to:	Andy Worsick – E3 Declan Douglas – BA Claudine O’Sullivan - BA Ian Henderson (JC) Knight Harwood Team	Address:	18 Stephenson way London NW1 2HD
		From:	Gary Sumsion
		Of:	Knight Harwood

Title:	VRF SYSTEM		
<p>Please find attached our VRF system selection and technical data for information and comments. Included attachments: - VRF Selection schedule dated 15.5.14 Panasonic Royal College of Ophthalmologists Rev 7 selection data dated 20.5.14 Data sheet for a Time Remote Controller CZ-RTC2</p>			
Date Response Required by:	29/05/2014		
Comments:			
Status:			
Date:	Company:	Name:	Signature:

KH-TS-004 REV. 02

Panasonic

James Chaplen BEng (Hons)

Number of Systems 2

Royal College of Ophthalmologists Rev 7 19052014.pva

20 May 2014

VRF v 7.14.0


Royal College of Ophthalmologists





PG 1.

Contents
















COND AC01	3
Selection.....	3
Principle Piping Diagram.....	7
Principle Wiring Diagram.....	8
System Power Wiring.....	9
COND AC02	10
Selection.....	10
Principle Piping Diagram.....	11
Principle Wiring Diagram.....	12
System Power Wiring.....	13
Equipment List	14

U-16MF2E8		Correction Factors
	Capacity Ratio:	114.7 %
	Input Power:	18.5 kW
	Corrected Cooling:	49.7 kW
	EER (cooling):	2.18
	Corrected Heating:	35.2 kW
	COP (heating):	2.29
	Voltage:	400V/3Ph + N/50Hz
Dimensions		
Length:	1000 mm	
Height:	1758 mm	
Depth:	930 mm	
		Temperature
		<u>Cooling mode</u> <u>Heating mode</u>
		Inside (WB): 21.50 °C Inside (DB): 20.00 °C
		Outside (DB): 35.00 °C Outside (WB): -4.00 °C
		Length and height
		Max length: Max height:
		225.12 m +0.00 m / -0.00 m
		Correction factor for defrosting included
















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Type	Model	Corrected cooling (kW)	Corrected heating (kW)	Control system				Accessories		
				RC	T10	RS	IA	Panel	Off Coil Temperature Control (°C)	External Expansion Valve
	S-45MM1E51	2.8	3.4	CZ-RTC2						
	S-56MM1E51	4.2	5.2							
	S-71MP1E5	4.7	5.9	CZ-RTC2						
	S-56MM1E51	4.2	5.2	CZ-RTC2						
	S-56MM1E51	4.3	5.2							
	S-56MM1E51	4.2	5.2	CZ-RTC2						
	S-56MM1E51	4.2	5.2							
	S-56MM1E51	4.6	5.6							
	S-71MP1E5	4.1	5.0	CZ-RTC2						
	S-71MP1E5	4.1	5.0							
	S-36MP1E5	2.2	2.9	CZ-RTC2						
	S-36MP1E5	2.3	2.9							
	S-36MM1E51	2.6	3.3							
	S-36MM1E51	2.7	3.3	CZ-RTC2						
	S-28MP1E5	2.2	2.8	CZ-RTC2						

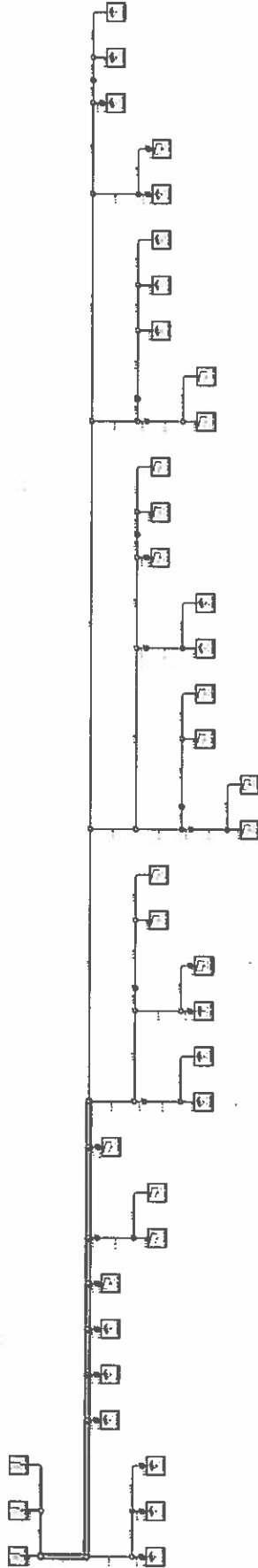
Panasonic

Type	Model	Corrected cooling (kW)	Corrected heating (kW)	Control system				Accessories		
				RC	T10	RS	IA	Panel	Off Coil Temperature Control (°C)	External Expansion Valve
	S-28MP1E5	2.3	2.8							
	S-28MP1E5	1.9	2.4	CZ-RTC2						
	S-45MP1E5	2.4	3.0							
	S-45MP1E5	2.5	3.0	CZ-RTC2						
	S-28MP1E5	2.3	2.8	CZ-RTC2						
	S-28MP1E5	2.3	2.8	CZ-RTC2						
	S-28MP1E5	2.0	2.4	CZ-RTC2						
	S-36MP1E5	2.9	3.7	CZ-RTC2						
	S-28MP1E5	2.3	2.8							
	S-36MM1E51	2.7	3.3	CZ-RTC2						
	S-36MM1E51	2.6	3.3							
	S-36MP1E5	2.9	3.7							
	S-36MP1E5	2.3	2.9	CZ-RTC2						
	S-36MM1E51	3.7	3.3	CZ-RTC2						
	S-56MM1E51	4.8	4.5	CZ-RTC2						

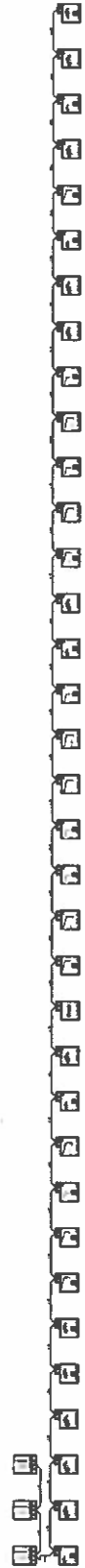
Panasonic

Type	Model	Corrected cooling (kW)	Corrected heating (kW)	Control system				Accessories		
				RC	T10	RS	IA	Panel	Off Coil Temperature Control (°C)	External Expansion Valve
	S-45MM1E51	3.7	3.4							
	S-45MM1E51	3.7	3.4							
	S-45MM1E51	3.7	3.4	CZ-RTC2						
	S-45MM1E51	3.7	3.4							
	S-73MK1E51	6.9	5.7							

Principle Piping Diagram - COND AC01



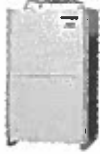
Principle Wiring Diagram - COND AC01




- Legend**
- | | | |
|--|---------------------------------------|-------------------------------------|
| R Timer Remote Controller (Wired) | S Simplified Remote Controller | W Wireless Remote Controller |
| SP Mini Seri-Para I/O Unit | RS Remote Sensor | IA Interface Adaptor |

System Power Wiring


U-16MF2E8	
Connections:	L1 L2 L3 N
Voltage:	400V/3Ph + N/50Hz
Maximum Running Current:	29.3 A
Maximum Input Power:	18.5 kW
Fused Isolator:	50 A




S-45MM1E51	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	0.32 A
Maximum Input Power:	37.00 W
Fused Isolator:	5 A




S-56MM1E51	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	0.41 A
Maximum Input Power:	52.00 W
Fused Isolator:	5 A




S-71MP1E5	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	0.72 A
Maximum Input Power:	160.00 W
Fused Isolator:	5 A




S-36MP1E5	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	0.38 A
Maximum Input Power:	85.00 W
Fused Isolator:	5 A




S-36MM1E51	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	0.25 A
Maximum Input Power:	28.00 W
Fused Isolator:	5 A




S-28MP1E5	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	0.25 A
Maximum Input Power:	56.00 W
Fused Isolator:	5 A

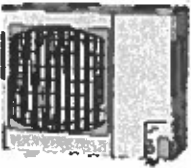



S-45MP1E5	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	0.56 A
Maximum Input Power:	126.00 W
Fused Isolator:	5 A



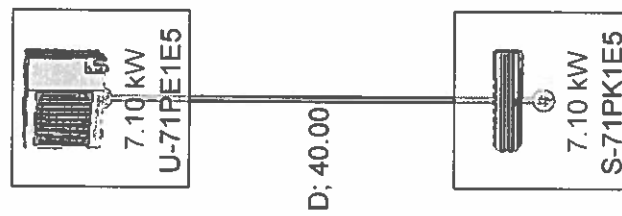
S-73MK1E51	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	0.58 A
Maximum Input Power:	57.00 W
Fused Isolator:	10-16 A

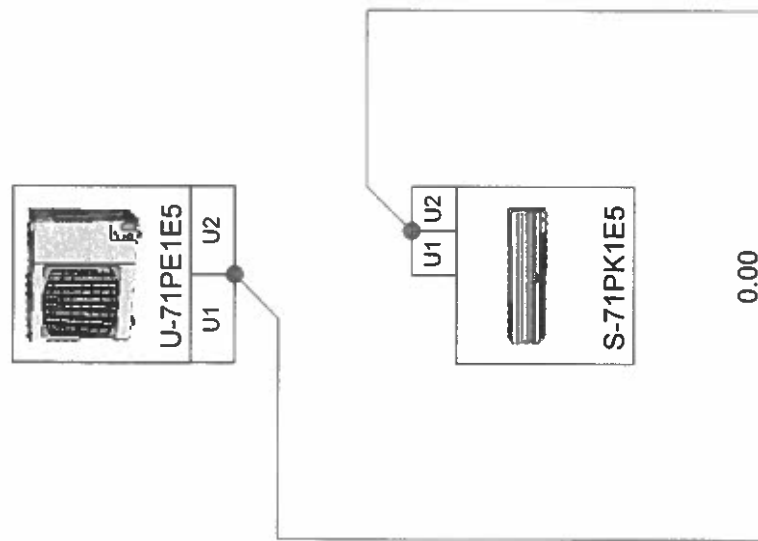


U-71PE1E5		Correction Factors	
	Input Power:	1.96 kW	Temperature Cooling mode Heating mode Inside (WB): 17.20 °C Inside (DB): 20.00 °C Outside (DB): 35.00 °C Outside (WB): 6.00 °C
	Corrected Cooling:	7.1 kW	
	Corrected Heating:	8.0 kW	
	Voltage:	230V/1Ph/50Hz	
	Dimensions		Length and height
	Length:	940 mm	Max length: 40.00 m
	Height:	996 mm	Max height: +0.00 m / -0.00 m
	Depth:	340 mm	
			Correction factor for defrosting included

Type	Model	Corrected cooling (kW)	Corrected heating (kW)	Control system				Accessories		
				RC	T10	RS	IA	Panel	Off Coil Temperature Control (°C)	External Expansion Valve
	S-71PK1E5	7.1	8.0							

Principle Piping Diagram - COND AC02

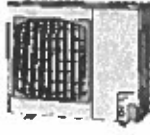





- Legend**
- | | | |
|--|---------------------------------------|-------------------------------------|
| R Timer Remote Controller (Wired) | S Simplified Remote Controller | W Wireless Remote Controller |
| SP Mini Seri-Para I/O Unit | RS Remote Sensor | IA Interface Adaptor |

System Power Wiring

U-71PE1E5	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	9 A
Maximum Input Power:	1.96 kW
Fused Isolator:	25 A



S-71PK1E5	
Connections:	L N
Voltage:	230V/1Ph/50Hz
Maximum Running Current:	0.58 A
Maximum Input Power:	57.00 W
Fused Isolator:	5 A



Equipment Items			
Model	Type	Code	Qty
COND AC01			
U-16MF2E8	Outdoor Unit		3
S-45MM1E51	Slim Low Static Ducted (MM1)		5
S-56MM1E51	Slim Low Static Ducted (MM1)		7
S-71MP1E5	Floor Standing (MP1)		3
S-36MP1E5	Floor Standing (MP1)		5
S-36MM1E51	Slim Low Static Ducted (MM1)		5
S-28MP1E5	Floor Standing (MP1)		7
S-45MP1E5	Floor Standing (MP1)		2
S-73MK1E51	Wall Mounted (MK1)		1
CZ-RTC2	Timer Remote Controller (Wired)		19
CZ-P1350PJ2BM	Branch	16	2
CZ-P1350BH2BM	Branch	19	9
CZ-P224BH2BM	Branch	17	10
CZ-P224BK2BM	Branch	12	12
CZ-P680BH2BM	Branch	18	5
CZ-P56HR3	Solenoid Valve Kit	56	13
CZ-P160HR3	Solenoid Valve Kit	160	12
CZ-CAPEK2	SVK connection board		1
CZ-CAPE2	SVK connection board		23
3/8" x 5/8" x 1/2"	Pipework	a	31.49 (m)
1/4" x 1/2"	Pipework	A	69.05 (m)
3/8" x 3/4" x 5/8"	Pipework	b	30.73 (m)
3/8" x 1/2"	Pipework	B	26.35 (m)
3/8" x 7/8" x 3/4"	Pipework	d	0.23 (m)
3/8" x 5/8"	Pipework	D	36.42 (m)
3/8" x 3/4"	Pipework	E	0.46 (m)
1/2" x 1 1/8" x 3/4"	Pipework	f	0.50 (m)
1/2" x 1 1/8" x 7/8"	Pipework	h	3.76 (m)
5/8" x 1 1/8" x 7/8"	Pipework	i	0.14 (m)
3/4" x 1 3/8" x 1 1/8"	Pipework	o	2.12 (m)
3/4" x 1 5/8" x 1 3/8"	Pipework	r	23.86 (m)
1/4"	Oil Pipe		5.34 m
	Control Wires		197.36 m
	Group Wires		55.93 m
	Additional Charge		46.14 kg
	Limit Density		0.000 kg/m3
COND AC02			
U-71PE1E5	Outdoor Unit		1
S-71PK1E5	Wall Mounted (PK1)		1
3/8" x 5/8"	Pipework	D	40.00 (m)
	Control Wires		0.00 m
	Additional Charge		0.50 kg
	Limit Density		0.000 kg/m3
Project controllers			

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Equipment Items			
Model	Type	Code	Qty
CZ-256ESMC2	Intelligent Controller		1

