CLIMAVENETA

TECHNICAL SELECTION

Engine version: 5.0.19.0
User: Robert Kozłowski
Database version: 1.9.20.0
Print data:01/10/2026 14:54
ApplyME Version: 3.6.0

HEATING

TECHNICAL SELECTION

NECS-WQ-Y 0904

INTEGRA unit for 4-pipe systems, water source



R HFC R-410A

SCROLL

Code		NECS-WQ-Y 0904
Version		-
Size		0904
Power supply	V/ph/Hz	400/3/50
Project - Selection Code		P5CE4DA5-S01

MITSUBISHI ELECTRIC
Changes for the Better

1 TECHNICAL SELECTION pg.3

1.1 Summary pg.3

1.2 Performance pg.3

1.3 Part load data pg.5

1.4 Scop pg.6

1.5 Main components pg.7

1.6 Other data pg.8

1.7 Accessory list pg.12

1.1 SUMMARY

SUMMARY		
UNIT DESCRIPTION		
Code		NECS-WQ-Y 0904
Version		
Size		0904
UNIT DESCRIPTION [General descriptions and images of the range, not specific to the choice of model]		INTEGRA unit for 4-pipe systems, water source
Power supply	V/ph/Hz	400/3/50
Production Plant		EUROPE

1.2 PERFORMANCE

COOLING		
CHILLED WATER HEAT EX. USER SIDE		
Fluid type		WATER
Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (cooling mode)	°C	12.00
Fluid outlet temperature (cooling mode)	°C	7.00
Water flow user side heat ex (cooling mode)	l/s	12.52
Pressure drop at the user side heat ex (cooling mode)	kPa	36.6
Available unit head	kPa	0.00
HEAT EXCHANGER SOURCE SIDE		
Fluid		ETHYLENE GLYCOL
Glycol	%	25
Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (cooling mode)	°C	30.00
Fluid outlet temperature (cooling mode)	°C	35.00
Water flow source side heat ex (cooling mode)	l/s	16.26
Pressure drop at the source side heat ex (cooling mode)	kPa	71.7
Available unit head	kPa	0.00
COOLING (Gross value)		
Cooling capacity	kW	261.9
Compressor power input	kW	57.71
Total power input (cooling mode)	kW	57.71
EER	kW/kW	4.539
Heat rejection capacity	kW	316.1
COOLING (EN 14511)		
Cooling capacity	kW	261.0
Effective power input	kW	60.60
EER	kW/kW	4.310
Heat rejection capacity	kW	317

The performance shown are obtained from theoretical calculations and tolerances will apply.Rpt.version:2.0.0.0

HEATING		
WARM WATER HEAT EX. USER SIDE		
Fluid type		WATER
Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (heating mode)	°C	40.00
Fluid outlet temperature (heating mode)	°C	45.00
Water flow	l/s	12.08
Pressure drop at the heat exchanger	kPa	34.0
Available unit head	kPa	0.00
HEAT EXCHANGER SOURCE SIDE		
Fluid		ETHYLENE GLYCOL
Glycol	%	25
Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (heating mode)	°C	5.00
Fluid outlet temperature (heating mode)	°C	1.00
Water flow source side heat ex (heating mode)	l/s	12.23
Pressure drop at the heat ex 2 (heating mode)	kPa	40.5
Available unit head	kPa	0.00
HEATING (Gross value)		
Total heating capacity	kW	250.2
Compressors power input (heating mode)	kW	66.83
Total power input (heating mode)	kW	66.83
COP	kW/kW	3.746
HEATING (EN14511)		
Total heating capacity	kW	251.0
Effective power input	kW	68.60
COP	kW/kW	3.660

COOLING + HEAT RECOVERY		
CHILLED WATER HEAT EX. USER SIDE		
Fluid type		WATER
Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (cooling + heat recovery)	°C	12.00
Fluid outlet temperature (cooling + heat recovery)	°C	7.00
Water flow	l/s	11.39
Pressure drop at the heat exchanger	kPa	30.3
WARM WATER HEAT EX. USER SIDE		
Fluid type		WATER

Fouling factor	m²K/kW	0.0180
Fluid inlet temperature (cooling + heat recovery mode)	°C	40.00
Fluid outlet temperature (cooling + heat recovery mode)	°C	45.00
Water flow	l/s	14.64
Pressure drop at the heat exchanger	kPa	50.0
COOLING WITH HEAT RECOVERY		
Cooling capacity (CH + REC)	kW	238.2
Recovery heat exchanger capacity	kW	303.3
Total power input (cooling + heat recovery mode)	kW	69.22
TER	kW/kW	7.825
COOLING WITH HEAT RECOVERY (EN 14511 VALUE)		
Cooling capacity (CH + REC)	kW	237.4
Recovery heat exchanger capacity	kW	304.1
Effective power input	kW	70.94
TER	kW/kW	7.633

1.3 PART LOAD DATA

COOLING PARTIAL LOADS											
INPUT											
Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	10.0
Condenser output temperature	°C	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00
Condenser fluid flow	l/s	16.26	16.26	16.26	16.26	16.26	16.26	16.26	16.26	16.26	16.26
OUTPUT											
Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	*20.0*	*10.0*
Temp. evaporator inlet	°C	12.00	11.50	11.00	10.50	10.00	9.50	9.00	8.50	*8.15*	*8.15*
Temp. evaporator outlet	°C	7.00	7.00	7.00	7.00	7.00	7.00	7.00	7.00	*7.00*	*7.00*
Evaporator water flow	l/s	12.52	12.52	12.52	12.52	12.52	12.52	12.52	12.52	*12.52*	*12.52*
Pressure drop	kPa	36.6	36.6	36.6	36.6	36.6	36.6	36.6	36.6	*36.6*	*36.6*
Condenser input temperature	°C	30.00	30.51	31.01	31.52	32.03	32.54	33.03	33.52	*33.86*	*33.86*
Condenser output temperature	°C	35.00	35.00	35.00	35.00	35.00	35.00	35.00	35.00	*35.00*	*35.00*
Condenser fluid flow	l/s	16.26	16.26	16.26	16.26	16.26	16.26	16.26	16.26	*16.26*	*16.26*
Pressure drop	kPa	71.7	71.7	71.7	71.7	71.7	71.7	71.7	71.7	*71.7*	*71.7*
Cooling load	kW	261.9	235.7	209.5	183.3	157.1	130.9	104.8	78.60	*52.40*	*26.20*
Total power input	kW	57.70	51.50	45.30	39.10	32.60	26.20	21.00	16.10	*11.10*	*6.200*
EER	kW/kW	4.539	4.575	4.620	4.692	4.817	5.004	4.995	4.895	*4.708*	*4.229*
Note		Note: italics texts mean integrated values under minimum step. For these operating points, the fluid temperatures and flow rate at the heat exchanger(s) correspond to those calculated at the minimum capacity step.									

HEATING PART LOAD											
INPUT											
Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	10.0
Temp evaporator outlet	°C	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

The performance shown are obtained from theoretical calculations and tolerances will apply.Rpt.version:2.0.0.0

Evaporator fluid flow	l/s	12.23	12.23	12.23	12.23	12.23	12.23	12.23	12.23	12.23	12.23
OUTPUT											
Load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	*20.0*	*10.0*
Condenser input temperature	°C	40.00	40.50	41.00	41.50	42.00	42.50	43.00	43.50	*43.88*	*43.88*
Condenser output temperature	°C	45.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	*45.00*	*45.00*
Condenser fluid flow	l/s	12.08	12.08	12.08	12.08	12.08	12.07	12.07	12.07	*12.08*	*12.08*
Pressure drop	kPa	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	*34.0*	*34.0*
Temp. evaporator inlet	°C	5.00	4.60	4.21	3.82	3.43	3.04	2.63	2.22	*1.91*	*1.91*
Temp evaporator outlet	°C	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	*1.00*	*1.00*
Evaporator fluid flow	l/s	12.23	12.23	12.23	12.23	12.23	12.23	12.23	12.23	*12.23*	*12.23*
Pressure drop	kPa	40.5	40.5	40.5	40.5	40.5	40.5	40.5	40.5	*40.5*	*40.5*
Heating load	kW	250	225	200	175	150	125	100	75	*50*	*25*
Total power input	kW	66.80	59.80	52.80	45.80	38.60	31.50	25.00	19.00	*13.10*	*7.270*
COP	kW/kW	3.746	3.764	3.786	3.822	3.884	3.975	3.998	3.942	*3.822*	*3.441*
Note		Note: italics texts mean integrated values under minimum step. For these operating points, the fluid temperatures and flow rate at the heat exchanger(s) correspond to those calculated at the minimum capacity step.									

PART LOAD DATA INTEGRA											
INPUT											
Refrigeration load	%	0.0	10.0	20.0	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0
Heating load	%	100.0	90.0	80.0	70.0	60.0	50.0	40.0	30.0	20.0	10.0	0.0
Source (side) exchanger inlet temp.	°C	5.00	5.00	5.00	5.00	5.00	5.00	30.00	30.00	30.00	30.00	30.00
Fluid flow hot exchanger user side	l/s	12.23	12.23	12.23	12.23	12.23	12.23	16.26	16.26	16.26	16.26	16.26
OUTPUT											
Cooling capacity	kW	0.000	26.20	52.40	78.60	104.8	130.9	157.1	183.3	209.5	235.7	261.9
Heating capacity	kW	250.2	225.1	200.1	175.1	150.1	125.1	100.1	75.00	50.00	25.00	0.000
Total power input	kW	66.80	58.30	49.90	41.50	33.30	32.50	37.80	42.40	47.20	52.40	57.70
TER	kW/kW	3.745	4.308	5.059	6.108	7.653	7.866	6.806	6.094	5.497	4.978	4.539
Note		Note: italics texts mean integrated values under minimum step. For these operating points, the fluid temperatures and flow rate at the heat exchanger(s) correspond to those calculated at the minimum capacity step.										

1.4 SCOP

SCOP Official (Reg. 813/2013 EU)		
LOW TEMPERATURE		
Type climate		Average
Temperature application	°C	35
Type flow		fixed
Type Temperature		variable
Bivalent temperature	°C	-7.0
PDesign	kW	360
Qhe	kWh	125406
SCOP on		5.96
SCOP net		6.01
SCOP low temperature		5.93
Performance ηs	%	229
Seasonal efficiency class (from D to A+++)		-
Note		Any SCOP values different from what is reported in commercial documentations are due to the different configuration of the unit and/or different calculation parameters input by the user.

SCOP Editable (EN 14825)	
Code	NECS-WQ-Y 0904
Note	Any SCOP values different from what is reported in commercial documentations are due to the different configuration of the unit and/or different calculation parameters input by the user.

1.5 MAIN COMPONENTS

EXCHANGERS		
CHILLED WATER HEAT EX. USER SIDE		
Typology		PLATE
Quantity	N°	1
Type of connections		[A] - Grooved pipe
Diameter of connections		3"
Min flow	l/s	7.972
Max flow	l/s	17.22
Heat exchanger water content	l	14.6
Minimum water content admitted in the plant	l	1920
HEAT EXCHANGER SOURCE SIDE		
Typology		PLATE
Quantity	N°	1
Type of connections		[A] - Grooved pipe
Diameter of connections		3"
Min flow	l/s	4.778
Max flow	l/s	17.22
Water content	l	14.6

WARM WATER HEAT EX. USER SIDE		
Typology		PLATE
Quantity	N°	1
Type of connections		[A] - Grooved pipe
Diameter of connections		3"
Min flow	l/s	9.028
Max flow	l/s	17.22
Water content	l	14.6

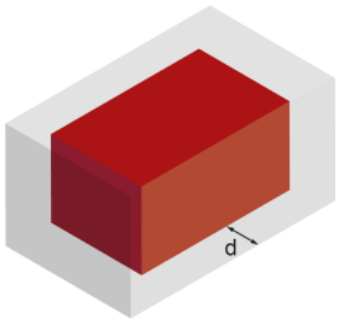
COMPRESSORS		
COMPRESSORS		
Compressor type		SCROLL
Compressors nr.	N°	4
No. Circuits	N°	2
Number of capacity steps	N°	4
Min. capacity step	%	25
Regulation		STEPS
Oil charge	kg	23.0
F.L.I. - Max absorbed power	kW	2x22.3+2x27.4
F.L.A. - Max absorbed current	A	2x36.1+2x45.8
L.R.A. - Locked rotor amperes for single compressor	A	2x225+2x272

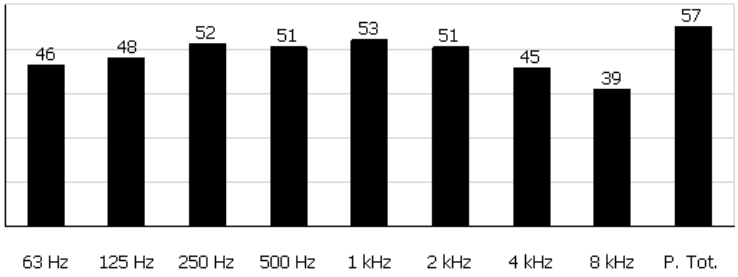
REFRIGERANT		
REFRIGERANT		
Refrigerant		R410A
Theoretical refrigerant charge	kg	29.6
GWP100 value (from IPCC AR5)		1924
CO2 equivalent	t	57.0
ASHRAE Safety Classification		A1

1.6 OTHER DATA

NOISE DATA									
SOUND DATA COLD									
Frequencies	Hz	63	125	250	500	1000	2000	4000	8000
Sound power (spectrum)	dB	78	80	84	83	85	83	77	71
Total sound power level in cooling	dB(A)				89				
Sound pressure level (spectrum)	dB	46	48	52	51	53	51	45	39
Total sound Pressure	dB(A)				57				

The performance shown are obtained from theoretical calculations and tolerances will apply.Rpt.version:2.0.0.0





SOUND DATA INDOOR HOT		
Sound power level in heating	dB(A)	89
Note		
Distance	m	10
Note		Average sound pressure level at 10 m distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level. Sound power on the basis of measurements taken in compliance with ISO 9614.

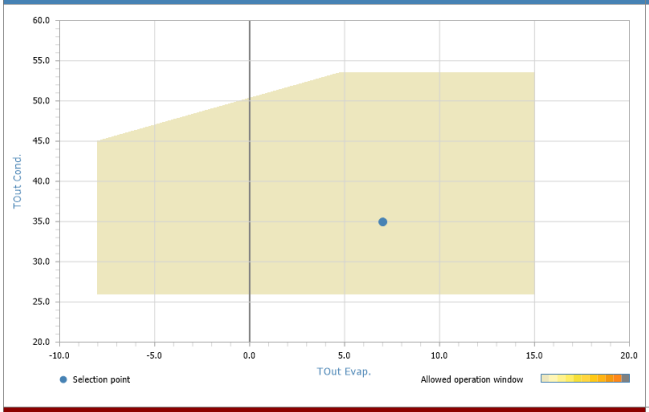
ELECTRICAL DATA

ELECTRICAL DATA		
Power supply	V/ph/Hz	400/3/50
F.L.I. - Max absorbed power	kW	99.40
F.L.A. - Max absorbed current	A	164
S.A. - Inrush current	A	390

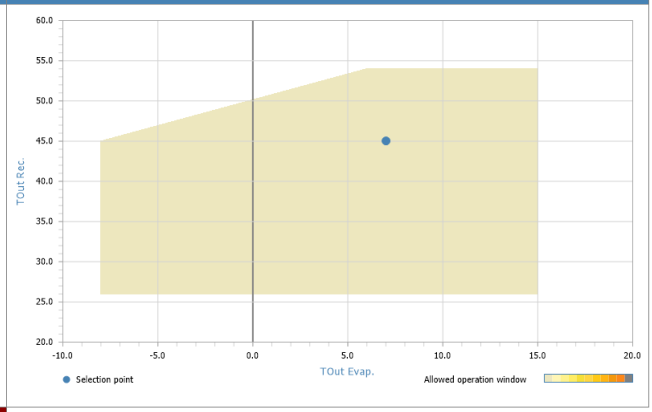
OPERATING LIMITS

OPERATING LIMITS

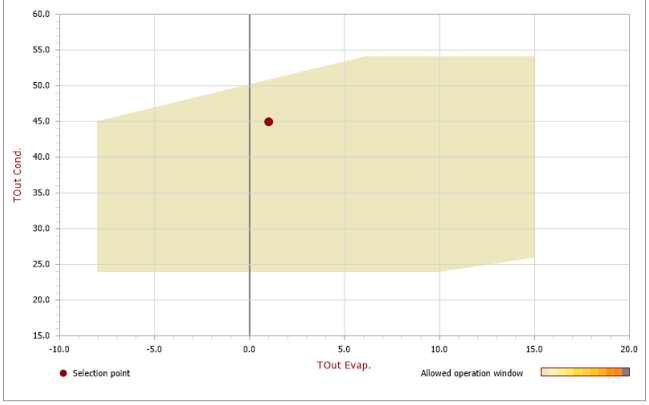
COOLING LIMITS



COOLING WITH HEATING RECOVERY LIMITS



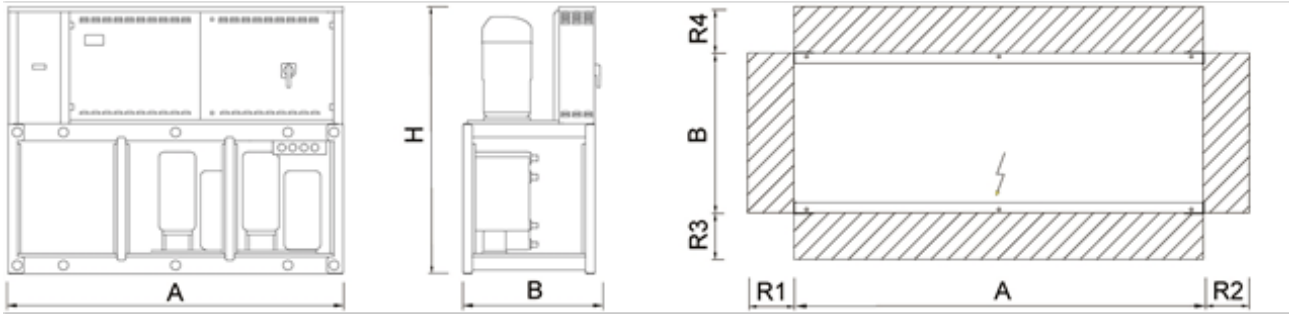
HEATING LIMITS



WEIGHT & DIMENSIONS

WEIGHT & DIMENSIONS

A	mm	2560
B	mm	891
H	mm	1810
Operating weight	kg	1445
R1	mm	800
R2	mm	800
R3	mm	1000
R4	mm	1000



1.7 Accessory List

Accessory	Code	Description
MULTI-PURPOSE NECS-WQ	5241	-
Reg.2013/813 SCOP compliant	0111	-
Power supply 400V/3ph/50Hz + PE	321	-
AUTOM. CIRCUIT BREAK. ON LOADS	3412	In case of overcurrent allows resetting of the switch without the replacement of relative fuses.
AUXILIARY SIGNAL 4-20mA	6161	Allows to change the operating set-point according to the value of current applied to the analogue input.
LARGE KEYBOARD	6194	-
WITH 2 WAY MODULATING VALVE	1242	It's recommended in case of inverter pumps and water flow modulation.
PAINTED STEEL PANELS	2042	-
ITALIAN USER INTERFACE	1181	-
PALLET + NYLON PACKING	9976	-