TECHNICAL DATA

AWR318HLE	-	AER318SH3
AWR318HLE	-	AER318SH
AWR322HLE	-	AER322SH3
AWR322HLE	-	AER322SH

SPLIT SYSTEM AIR CONDITIONER

0.8180.053.0 06/99

Table of Contents

1. OPERATING RANGE

	Temperature	Indoor Air Intake Temp.	Outdoor Air Intake Temp.
Cooling	Maximum	32°C DB / 23°C WB	43°C DB
	Minimum	19°C DB / 14°C WB	19°C DB
Heating	Maximum	25°C DB	22°C DB / 17°C WB
	Minimum	/ /	– 8 °C DB / – 9°C WB

2. SPECIFICATIONS

2-1. UNIT SPECIFICATIONS

MODELS	INDOOR UNIT		AWR318HLE		
	OUTDOOR UNIT		AER318SH3		
Power source			380 - 400 V - 3N ~ 50 Hz		
Control circuit			220 - 240 V ~ 50 Hz		
PERFORMANCE			**COOLING**		**HEATING**
Capacity		W	4800		6300
		BTU/h	16400		21500
Air circulation (high)		m³/h	800		
Moisture removal (high)		l/h	2,7		//
ELECTRICAL RATING					
Voltage rating		V	400		
Available voltage range		V	342 to 440		
Running amperes		A	3,6		3,7
Power input		W	2200		2300
Power factor		%	//		//
C.O.P.		W/W	2,2		2,7
Compressor locked rotor amperes		A	22		22
FEATURES					
Controls / Temperature control			Microprocessor / I.C. thermostat		
Control unit			Wireless remote control unit		
Timer			ON/OFF 24 hours & daily program		
Fan speeds		Indoor / Outdoor	3 and Auto / 2 (Auto)		
Airflow direction (indoor)		Horizontal	Manual		
		Vertical	Auto		
Air filter			Washable, anti-mold		
Compressor			Rotary (Hermetic)		
Refrigerant / Amount charged at shipment		g	R407C / 1650		
Refrigerant control			Capillary tube		
Operation sound	Indoor Hi / Me / Lo	dB-A	45,0 / 41,0 / 36,0		
	Outdoor Hi	dB-A	51		
Refrigerant tubing connections			Flare type		
Max. allowable tubing lenght at shipment		m	10		
Refrigerant tube diameter	Narrow tube	mm (")	6,35 (1/4)		
	Wide tube	mm (")	12,7 (1/2)		
DIMENSIONS AND WEIGHT			**Indoor unit**		**Outdoor unit**
Unit dimensions	Height	mm	360		630
	Width	mm	1000		830
	Depth	mm	205		305
Package dimensions	Height	mm	282		713
	Width	mm	1080		994
	Depth	mm	443		413
Weight	Net	kg	13,5		59
	Shipping	kg	17,7		64
Shipping volume		m^3	0,13		0,29

Data subject to change without notice.

MODELS	INDOOR UNIT		AWR318HLE		
	OUTDOOR UNIT		AER318SH		
Power source			220 - 240 V ~ 50 Hz		
PERFORMANCE			**COOLING**		**HEATING**
Capacity		W	4900		6300
		BTU/h	16700		21500
Air circulation (high)		m³/h	800		
Moisture removal (high)		l/h	2,7		//
ELECTRICAL RATING					
Voltage rating		V	230		
Available voltage range		V	198 to 264		
Running amperes		A	10,5		11
Power input		W	2200		2350
Power factor		%	91		93
C.O.P.		W/W	2,2		2,7
Compressor locked rotor amperes		A	57		57
FEATURES					
Controls / Temperature control			Microprocessor / I.C. thermostat		
Control unit			Wireless remote control unit		
Timer			ON/OFF 24 hours & daily program		
Fan speeds	Indoor / Outdoor		3 and Auto / 2 (Auto)		
Airflow direction (indoor)	Horizontal		Manual		
	Vertical		Auto		
Air filter			Washable, anti-mold		
Compressor			Rotary (Hermetic)		
Refrigerant / Amount charged at shipment		g	R407C / 1660		
Refrigerant control			Capillary tube		
Operation sound	Indoor Hi / Me / Lo	dB-A	45,0 / 41,0 / 36,0		
	Outdoor Hi	dB-A	51		
Refrigerant tubing connections			Flare type		
Max. allowable tubing lenght at shipment		m	10		
Refrigerant tube diameter	Narrow tube	mm (")	6,35 (1/4)		
	Wide tube	mm (")	12,7 (1/2)		
DIMENSIONS AND WEIGHT			**Indoor unit**		**Outdoor unit**
Unit dimensions	Height	mm	360		630
	Width	mm	1000		830
	Depth	mm	205		305
Package dimensions	Height	mm	282		713
	Width	mm	1080		994
	Depth	mm	443		413
Weight	Net	kg	13,5		56,5
	Shipping	kg	17,7		61,5
Shipping volume		m^3	0,13		0,29

Data subject to change without notice.

MODELS	INDOOR UNIT		AWR322HLE		
	OUTDOOR UNIT		AER322SH3		
Power source			380 - 400 V - 3N ~ 50 Hz		
Control circuit			220 - 240 V ~ 50 Hz		
PERFORMANCE			**COOLING**		**HEATING**
Capacity		W	6200		7450
		BTU/h	21150		25400
Air circulation (high)		m³/h	900		
Moisture removal (high)		l/h	3,3		//
ELECTRICAL RATING					
Voltage rating		V	400		
Available voltage range		V	342 to 440		
Running amperes		A	4,8		5
Power input		W	2800		3000
Power factor		%	//		//
C.O.P.		W/W	2,2		2,5
Compressor locked rotor amperes		A	28		28
FEATURES					
Controls / Temperature control			Microprocessor / I.C. thermostat		
Control unit			Wireless remote control unit		
Timer			ON/OFF 24 hours & daily program		
Fan speeds		Indoor / Outdoor	3 and Auto / 2 (Auto)		
Airflow direction (indoor)		Horizontal	Manual		
		Vertical	Auto		
Air filter			Washable, anti-mold		
Compressor			Rotary (Hermetic)		
Refrigerant / Amount charged at shipment		g	R407C / 2360		
Refrigerant control			Capillary tube		
Operation sound	Indoor Hi / Me / Lo	dB-A	47,0 / 44,0 / 40,0		
	Outdoor Hi	dB-A	55		
Refrigerant tubing connections			Flare type		
Max. allowable tubing lenght at shipment		m	10		
Refrigerant tube diameter	Narrow tube	mm (")	6,35 (1/4)		
	Wide tube	mm (")	15,88 (5/8)		
DIMENSIONS AND WEIGHT			**Indoor unit**		**Outdoor unit**
Unit dimensions	Height	mm	360		835
	Width	mm	1000		850
	Depth	mm	205		305
Package dimensions	Height	mm	282		913
	Width	mm	1080		1000
	Depth	mm	443		400
Weight	Net	kg	13,5		70
	Shipping	kg	17,7		79
Shipping volume		m^3	0,13		0,37

Data subject to change without notice.

MODELS	INDOOR UNIT		AWR322HLE		
	OUTDOOR UNIT		AER322SH		
Power source			220 - 240 V ~ 50 Hz		
PERFORMANCE			**COOLING**		**HEATING**
Capacity		W	6200		7450
		BTU/h	21150		25400
Air circulation (high)		m³/h	900		
Moisture removal (high)		l/h	3,3		//
ELECTRICAL RATING					
Voltage rating		V	230		
Available voltage range		V	198 to 264		
Running amperes		A	12,8		13,8
Power input		W	2800		3000
Power factor		%	95		95
C.O.P.		W/W	2,2		2,5
Compressor locked rotor amperes		A	70		70
FEATURES					
Controls / Temperature control			Microprocessor / I.C. thermostat		
Control unit			Wireless remote control unit		
Timer			ON/OFF 24 hours & daily program		
Fan speeds	Indoor / Outdoor		3 and Auto / 2 (Auto)		
Airflow direction (indoor)	Horizontal		Manual		
	Vertical		Auto		
Air filter			Washable, anti-mold		
Compressor			Rotary (Hermetic)		
Refrigerant / Amount charged at shipment		g	R407C / 2290		
Refrigerant control			Capillary tube		
Operation sound	Indoor Hi / Me / Lo	dB-A	47,0 / 44,0 / 40,0		
	Outdoor Hi	dB-A	55		
Refrigerant tubing connections			Flare type		
Max. allowable tubing lenght at shipment		m	10		
Refrigerant tube diameter	Narrow tube	mm (")	6,35 (1/4)		
	Wide tube	mm (")	15,88 (5/8)		
DIMENSIONS AND WEIGHT			**Indoor unit**		**Outdoor unit**
Unit dimensions	Height	mm	360		835
	Width	mm	1000		850
	Depth	mm	205		305
Package dimensions	Height	mm	282		913
	Width	mm	1080		1000
	Depth	mm	443		400
Weight	Net	kg	13,5		70
	Shipping	kg	17,7		79
Shipping volume		m^3	0,13		0,37

Data subject to change without notice.

2-2. MAJOR COMPONENT SPECIFICATIONS

2-2-1. INDOOR UNIT

MODEL			**AWR318HLE**
Source			220 - 240 V ~ 50 Hz
CONTROLLER PCB			
Part No.			POW-K186GHS/E
Controls			Microprocessor
Control circuit fuse			250 V - 3 A
REMOTE CONTROL UNIT			**RCS-2SH2**
FAN AND FAN MOTOR			
Type			Cross-flow
Number ... Dia. / Leghth		mm	1 ... Ø100 / 760
Fan motor model ... Number			UF2Q-21A5PA-S ...1
No. of poles ... rpm (220 V, High)			2 ... 1,490
Nominal output		W	20
Coil resistance (Ambient temp. 20°C)	WHT - BRN	Ω	163,7
	WHT - VLT	Ω	68,8
	VLT - ORG	Ω	33,2
	ORG - YEL	Ω	73,6
	YEL - PNK	Ω	43,7
Safety devices: Type			Internal protector
Operating temp.	Open	°C	130 ± 8
	Close		Automatic reclosing
Run capacitor		µF	1,5
		VAC	440
FLAP MOTOR			
Model			M2LJ24ZE31
Rating			AC 208 / 230 V 50-60 Hz
No. of poles ... rpm			8 ... 2,5 / 3
Nominal output		W	3 / 2,5
Coil resistance (Ambient temp. 20°C)		kΩ	16,45 ± 15%
HEAT EXCH. COIL			
Coil			Aluminum plate fin / Copper tube
Rows			2
Fin pitch		mm	1,8
Face area		m^2	0,192

Data subject to change without notice.

MODEL			**AWR322HLE**
Source			220 - 240 V ~ 50 Hz
CONTROLLER PCB			
Part No.			POW-K226GHS/E
Controls			Microprocessor
Control circuit fuse			250 V - 3 A
REMOTE CONTROL UNIT			**RCS-2SH2**
FAN AND FAN MOTOR			
Type			Cross-flow
Number ... Dia. / Leghth		mm	1 ... Ø100 / 760
Fan motor model ... Number			UF2Q-31A5P-S ...1
No. of poles ... rpm (220 V, High)			2 ... 1,750
Nominal output		W	30
Coil resistance (Ambient temp. 20°C)	WHT - BRN	Ω	145,3
	WHT - VLT	Ω	53,6
	VLT - ORG	Ω	30,9
	ORG - YEL	Ω	70,4
	YEL - PNK	Ω	38,8
Safety devices: Type			Internal protector
Operating temp.	Open	°C	130 ± 5
	Close		Automatic reclosing
Run capacitor		μF	1,8
		VAC	440
FLAP MOTOR			
Model			M2LJ24ZE31
Rating			AC 208 / 230 V 50-60 Hz
No. of poles ... rpm			8 ... 2,5 / 3
Nominal output		W	3 / 2,5
Coil resistance (Ambient temp. 20°C)		kΩ	16,45 ± 15%
HEAT EXCH. COIL			
Coil			Aluminum plate fin / Copper tube
Rows			2
Fin pitch		mm	1,8
Face area		m^2	0,192

Data subject to change without notice.

2-2-2. OUTDOOR UNIT

MODEL			**AER318SH3**	
Power source			380 - 400 V - 3N ~ 50 Hz	
Control circuit			220 - 240 V ~ 50 Hz	
CONTROLLER PCB			**POW-C186GH**	
COMPRESSOR				
Type			Rotary (Hermetic)	
Compressor model			C-2RN173H8A 80242088	
Source			380 - 400 V - 3N ~ 50 Hz	
Nominal output		W	1700	
Compressor oil ... Amount		cc	FV68S ... 800	
Coil resistance (Ambient temp. 25°C)	C - R	Ω	5,62	
	C - S	Ω	5,51	
	R - S	Ω	5,62	
Safety devices: Type			Internal protector	External protector
Overload relay			//	HOE-10TB TH-7A
Operating temp.	Open	°C	120 ± 5	//
	Close	°C	Automatic reclosing	//
Operating amp. (Ambient temp. 25°C)			//	0
Run capacitor		μF	//	
		VAC	//	
Crank case heater			240 V - 30 W	
FAN AND FAN MOTOR				
Type			Propeller	
Number ... Dia.		mm	1 ... Ø400	
Fan motor model ... Number			SG6S-51B5P ... 1	
Source			220 - 240 V ~ 50 Hz	
No. of poles ... rpm (220 V)			6 ... 900	
Nominal output		W	50	
Coil resistance (Ambient temp. 20°C)	WHT - BRN	Ω	89,1	
	WHT - YEL	Ω	111,8	
	YEL - PNK	Ω	55,9	
Safety devices: Type			Internal protector	
Operating temp.	Open	°C	130 ± 8	
	Close		Automatic reclosing	
Run capacitor		μF	2	
		VAC	440	
HEAT EXCH. COIL				
Coil			Aluminum plate fin / Copper tube	
Rows			2	
Fin pitch		mm	1,6	
Face area		m^2	0,453	
EXTERNAL FINISH			Acrylic baked-on enamel finish	

Data subject to change without notice.

MODEL			AER318SH
CONTROLLER PCB			
Part No.			POW-C186GH
Control circuit fuse			//
COMPRESSOR			
Type			Rotary (Hermetic)
Compressor model			C-2RN170H5W 80807045
Nominal output		W	1700
Compressor oil ... Amount		cc	FV68S ... 800
Coil resistance (Ambient temp. 25°C)	C - R	Ω	1,353
	C - S	Ω	3,422
Safety devices: Type			Internal protector
Overload relay			//
Operating temp.	Open	°C	Automatic opening
	Close	°C	Automatic reclosing
Operating amp. (Ambient temp. 25°C)			//
Run capacitor		µF	40
		VAC	400
Crank case heater			240 V - 30 W
FAN AND FAN MOTOR			
Type			Propeller
Number ... Dia.		mm	1 ... Ø400
Fan motor model ... Number			SG6S-51B5P ... 1
No. of poles ... rpm (230 V, High)			6 ... 900
Nominal output		W	50
Coil resistance (Ambient temp. 20°C)	WHT - BRN	Ω	89,1
	WHT - YEL	Ω	111,8
	YEL - PNK	Ω	55,9
Safety devices: Type			Internal protector
Operating temp.	Open	°C	130 ± 8
	Close		Automatic reclosing
Run capacitor		µF	2
		VAC	440
HEAT EXCH. COIL			
Coil			Aluminum plate fin / Copper tube
Rows			2
Fin pitch		mm	1,6
Face area		m^2	0,453
EXTERNAL FINISH			Acrylic baked-on enamel finish

Data subject to change without notice.

MODEL			**AER322SH3**	
Power source			380 - 400 V - 3N ~ 50 Hz	
Control circuit			220 - 240 V ~ 50 Hz	
CONTROLLER PCB			**POW-C226GH**	
COMPRESSOR				
Type			Rotary (Hermetic)	
Compressor model			C-RN223H8A 80244088	
Source			380 - 400 V - 3N ~ 50 Hz	
Nominal output		W	2200	
Compressor oil ... Amount		cc	FV68S ... 1350	
Coil resistance (Ambient temp. 25°C)	C - R	Ω	4,97	
	C - S	Ω	4,64	
	R - S	Ω	4,88	
Safety devices: Type			Internal protector	External protector
Overload relay			//	HOE-10TB TH-7A
Operating temp.	Open	°C	Automatic opening	//
	Close	°C	Automatic reclosing	//
Operating amp. (Ambient temp. 25°C)			//	7A
Run capacitor		µF	//	
		VAC	//	
Crank case heater			240 V - 30 W	
FAN AND FAN MOTOR				
Type			Propeller	
Number ... Dia.		mm	1 ... Ø460	
Fan motor model ... Number			KFC6S-51B5P ... 1	
Source			220 - 240 V ~ 50 Hz	
No. of poles ... rpm (220 V)			6 ... 840	
Nominal output		W	50	
Coil resistance (Ambient temp. 20°C)	WHT - BRN	Ω	95,9	
	WHT - YEL	Ω	55,4	
	YEL - PNK	Ω	7,2	
Safety devices: Type			Internal protector	
Operating temp.	Open	°C	130 ± 8	
	Close		Automatic reclosing	
Run capacitor		µF	5	
		VAC	440	
HEAT EXCH. COIL				
Coil			Aluminum plate fin / Copper tube	
Rows			2	
Fin pitch		mm	1,9	
Face area		m^2	0,61	
EXTERNAL FINISH			Acrylic baked-on enamel finish	

Data subject to change without notice.

MODEL			AER322SH	
CONTROLLER PCB				
Part No.			POW-C226GH	
Control circuit fuse			//	
COMPRESSOR				
Type			Rotary (Hermetic)	
Compressor model			C-RN221H5A 80244035	
Source			220 - 240 V ~ 50 Hz	
Nominal output		W	2200	
Compressor oil ... Amount		cc	FV68S ... 1350	
Coil resistance (Ambient temp. 25°C)	C - R	Ω	0,777	
	C - S	Ω	2,408	
Safety devices: Type			Internal protector	External protector
Overload relay			//	OL-D24
Operating temp.	Open	°C	Automatic opening	150 ± 5
	Close	°C	Automatic reclosing	63 ± 10
Operating amp. (Ambient temp. 25°C)			//	Trip in 6 to 16 s at 59A
Run capacitor		µF	40	
		VAC	400	
Crank case heater			240 V - 30 W	
FAN AND FAN MOTOR				
Type			Propeller	
Number ... Dia.		mm	1 ... Ø460	
Fan motor model ... Number			KFC6S-51B5P ... 1	
No. of poles ... rpm (230 V, High)			6 ... 860	
Nominal output		W	50	
Coil resistance (Ambient temp. 20°C)	WHT - BRN	Ω	95,9	
	WHT - YEL	Ω	55,4	
	YEL - PNK	Ω	7,2	
Safety devices: Type			Internal protector	
Operating temp.	Open	°C	130 ± 8	
	Close		Automatic reclosing	
Run capacitor		µF	5	
		VAC	440	
HEAT EXCH. COIL				
Coil			Aluminum plate fin / Copper tube	
Rows			2	
Fin pitch		mm	1,9	
Face area		m^2	0,61	
EXTERNAL FINISH			Acrylic baked-on enamel finish	

Data subject to change without notice.

2-3. Other Component Specifications

Indoor Unit AWR318HLE, AWR322HLE

Transformer (TR)		ATR-J105
Rating	Primary	AC 230V, 50Hz
	Secondary	19V, 0.526A
	Capacity	10VA
Coil resistance	Ω (at 21°C)	Primary (WHT – WHT): 205 ± 10%
		Secondary (BRN – BRN): 2.0 ± 10%
Thermal cut-off temp.		150°C

Thermistor (Coil sensor TH1)		PBC-41E-S4			
Resistance	kΩ	–20°C	40.1 ± 5%	20°C	6.5 ± 5%
		–10°C	24.4 ± 5%	30°C	4.4 ± 5%
		0°C	15.3 ± 5%	40°C	3.0 ± 5%
		10°C	9.9 ± 5%	50°C	2.1 ± 5%

Thermistor (Room sensor TH2)		KTEC-35-S6			
Resistance	kΩ	10°C	10.0 ± 4%	30°C	4.0 ± 4%
		15°C	7.9 ± 4%	35°C	3.3 ± 4%
		20°C	6.3 ± 4%	40°C	2.7 ± 4%
		25°C	5.0 ± 4%	50°C	1.8 ± 4%

Outdoor Unit AER318SH3

Electro Magnetic Contactor (MG)		HOE-10TB TH-5A
Magnetic contactor		
Coil rating		AC 220–240V, 50Hz / AC 240–260V, 60Hz
Coil resistance	Ω (at 25°C)	1,260 ± 10%
Contact rating (Main)		AC 440V, 8A
Thermal relay (Overcurrent relay)		
Operating amperes		5A

Negative Phase Relay (47C)	RDR-S400
Rating	AC 415V, 3-phase 50Hz
Contact rating	AC 400V, 1A
Operation	Positive phase: ON
	Negative phase: OFF

Relay (PR)		MY2-TSDF
Coil rating		DC 24V
Coil resistance	Ω (at 20°C)	650 ± 10%
Contact rating		AC 200V, 5A

4-way Valve (SC)		LB60012 (Coil), V26-110B (Valve)
Coil rating		AC 220/240V, 50Hz, 6W
Coil resistance	Ω (at 20°C)	1,740 ± 7%

Thermostat (Defrost thermo. 23D)		TRS02-12MSR
Operating temp.	°C	ON 12 ± 2
		Diff. 8 deg. below

Thermostat (Fan Speed Control 23S)		MQT5S-27YZJ
Switching temp.	°C	high → LOW 23.5°C ± 1.5
		low → HIGH 27.0°C $^{+0}_{-3}$
Contact rating		AC 220V, 3A

High Pressure Switch (HPS)	ACB-IB29
Operating press. setting	OFF 25 ± 1
	ON 20 ± 1.5

Outdoor Unit AER318SH

Power Relay		DFU24D1F
Coil rating		DC 24V
Coil resistance	Ω (at 20°C)	650 ± 10%
Contact rating		AC 250V, 20A

High Pressure Switch (HPS)	ACB-IB29
Operating press. setting	OFF 25 ± 1 ON 20 ± 1.5

Thermostat (Defrost thermo. 23D)		TRS02-12MSR
Operating temp.	°C	ON 12 ± 2 Diff. 8 deg. below

Thermostat (Fan Speed Control 23S)		MQT5S-27YZJ
Switching temp.	°C	high → LOW 23.5°C ± 1.5 low → HIGH 27.0°C $^{+0}_{-3}$
Contact rating		AC 220V, 3A

4-way Valve (SC)		LB60012 (Coil), V26-110B (Valve)
Coil rating		AC 220/240V, 50Hz, 6W
Coil resistance	Ω (at 20°C)	1,740 ± 7%

Outdoor Unit AER322SH3

Electro Magnetic Contactor (MG)	HOE-10TB TH-7A
Magnetic Contactor	
Coil rating	AC 220–240V, 50Hz / AC 240–260V, 60Hz
Coil resistance Ω (at 25°C)	1,260 ± 10%
Contact rating (Main)	AC 440V, 8A
Thermal relay (Overcurrent relay)	
Operating amperes	7A

Negative Phase Relay (47C)	RDR-S400
Rating	AC 415V, 3-phase 50Hz
Contact rating	AC 400V, 1A
Operation	Positive phase: ON
	Negative phase: OFF

4-way Valve (20S)	LB60012 (Coil), V26-110D (Valve)
Coil rating	AC 220/240V, 50Hz, 6W
Coil resistance Ω (at 20°C)	1,740 ± 7%

Solenoid Valve (SV)	NEV-J041B0 (Coil), NEV202DXF (Valve)
Rating	AC 240V, 50/60Hz
	7/6W, 45/35mA

Thermostat (Defrost thermo. 23D)	TRS02-12MSR316
Operating temp. °C	ON 12 ± 2
	Diff. 8 deg. below

Thermostat (Fan Speed Control 23S)	YTB-S383
Switching temp. °C	high → LOW 28.5°C ± 1
	low → HIGH 31°C ± 1

Outdoor Unit AER322SH

Magnetic Contactor (MG)		HE-20FT31B
Coil rating		AC 220/240V, 50Hz
Coil resistance	Ω (at 25°C)	1,050 ± 15%
Contact rating (Main)		AC 220V, 20A

Thermostat (Defrost thermo. 23D)		TRS02-12MSR316
Operating temp.	°C	ON 12 ± 2
		Diff. 8 deg. below

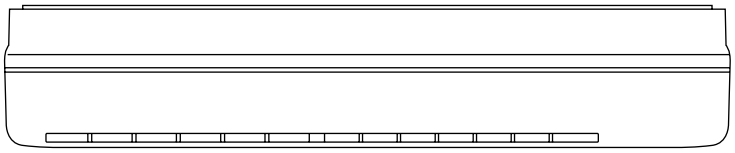
Thermostat (Fan Speed Control 23S)		YTB-S383
Switching temp.	°C	high → LOW 28.5°C ± 1
		low → HIGH 31°C ± 1

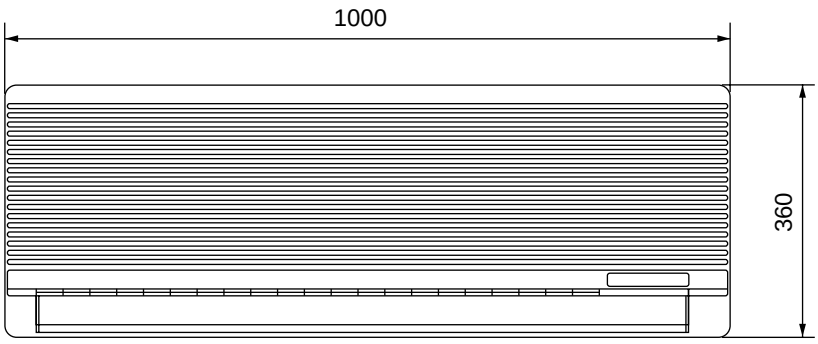
Solenoid Valve (SV)	NEV-J041B0 (Coil), NEV202DXF (Valve)
Rating	AC 240V, 50/60Hz
	7/6W, 45/35mA

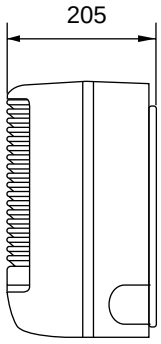
4-way Valve (SC)		LB60012 (Coil), V26-110B (Valve)
Coil rating		AC 220/240V, 50Hz, 6W
Coil resistance	Ω (at 20°C)	1,740 ± 7%

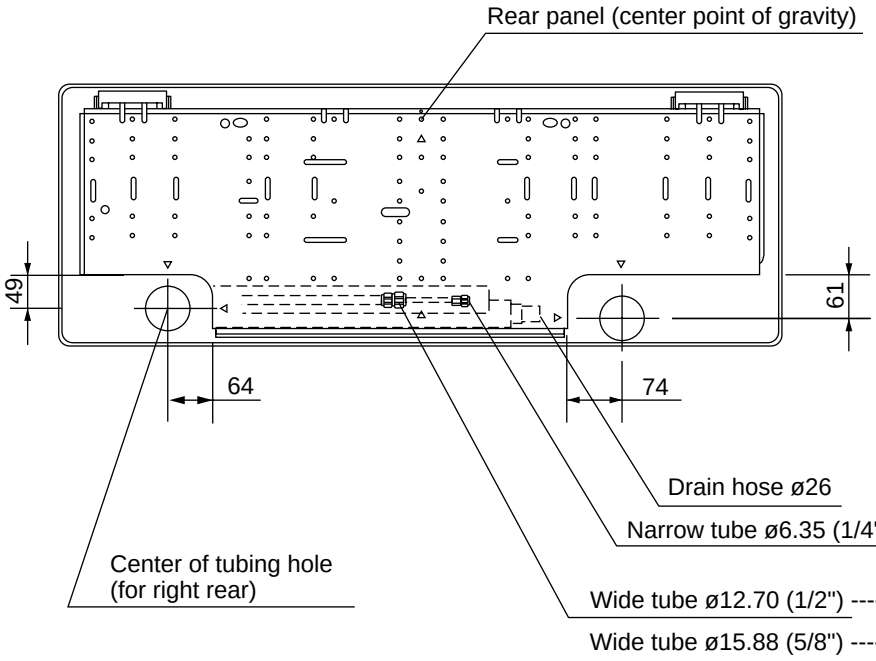
3. DIMENSIONAL DATA

Indoor Unit **AWR318HLE**
AWR322HLE

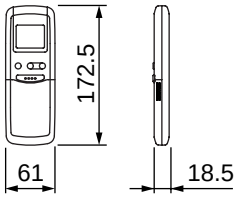






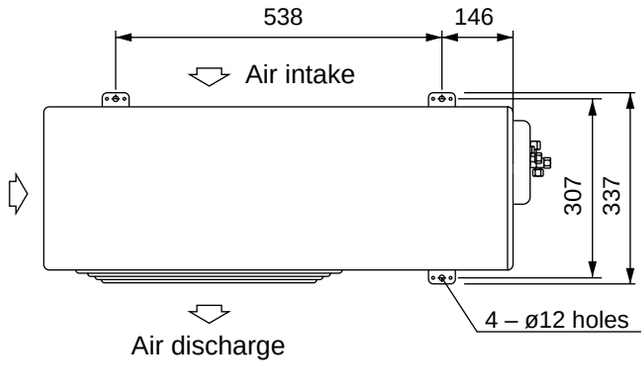


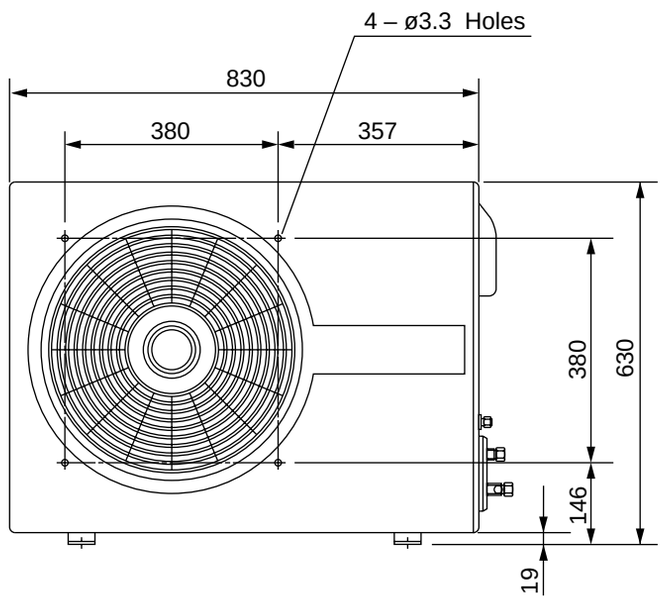
Remote control unit

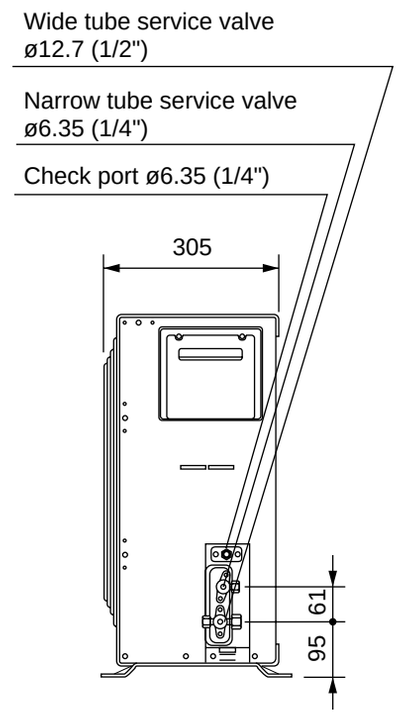


Unit : mm

Outdoor Unit **AER318SH3**

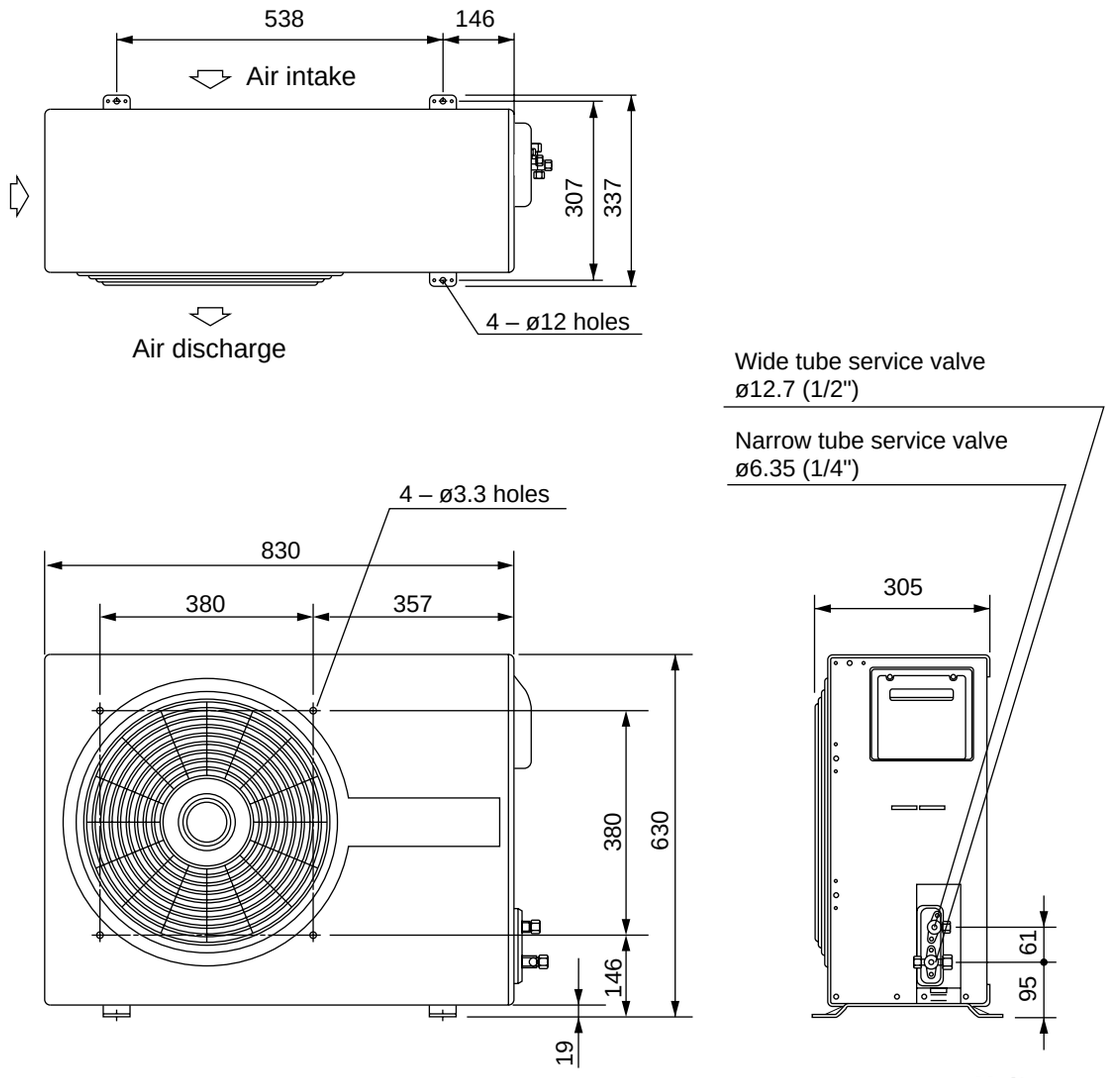






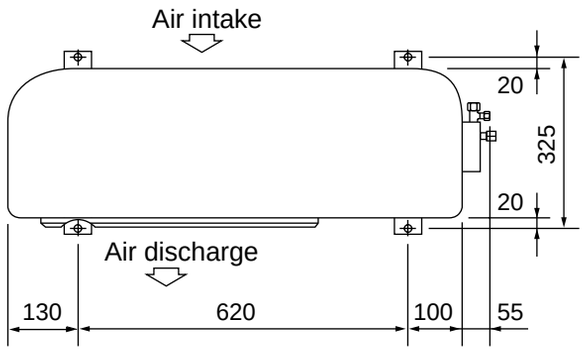
Unit : mm

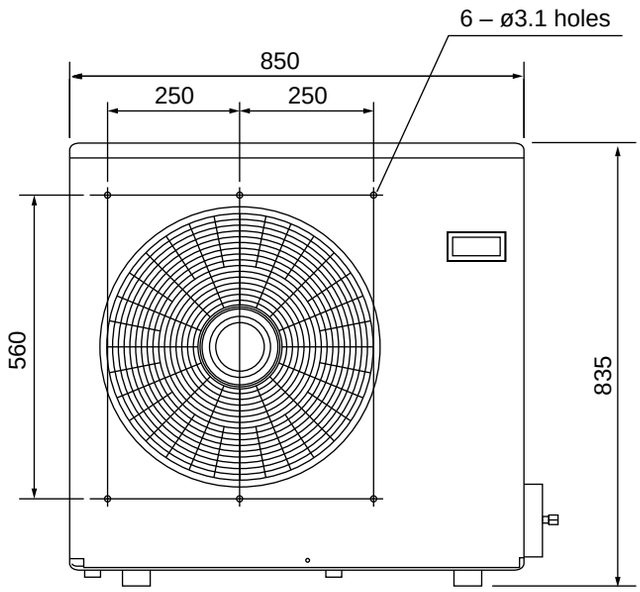
Outdoor Unit **AER318SH**

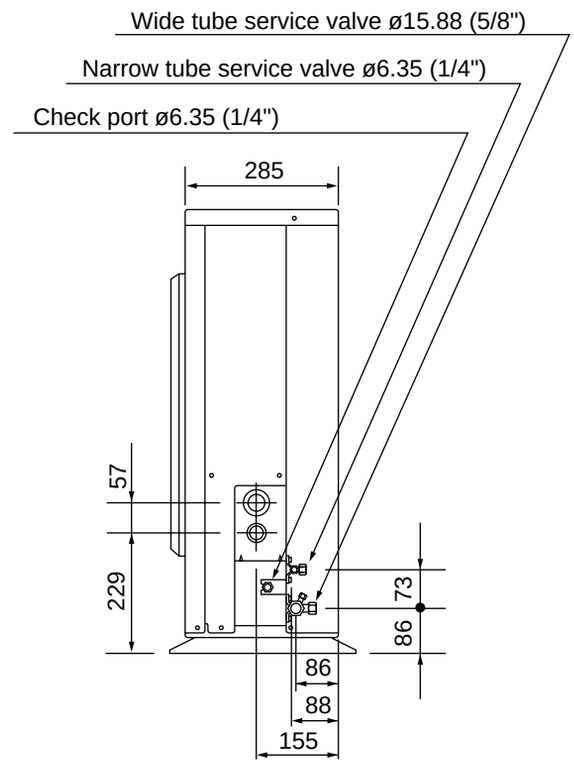


Unit : mm

Outdoor Unit **AER322SH3**
AER322SH



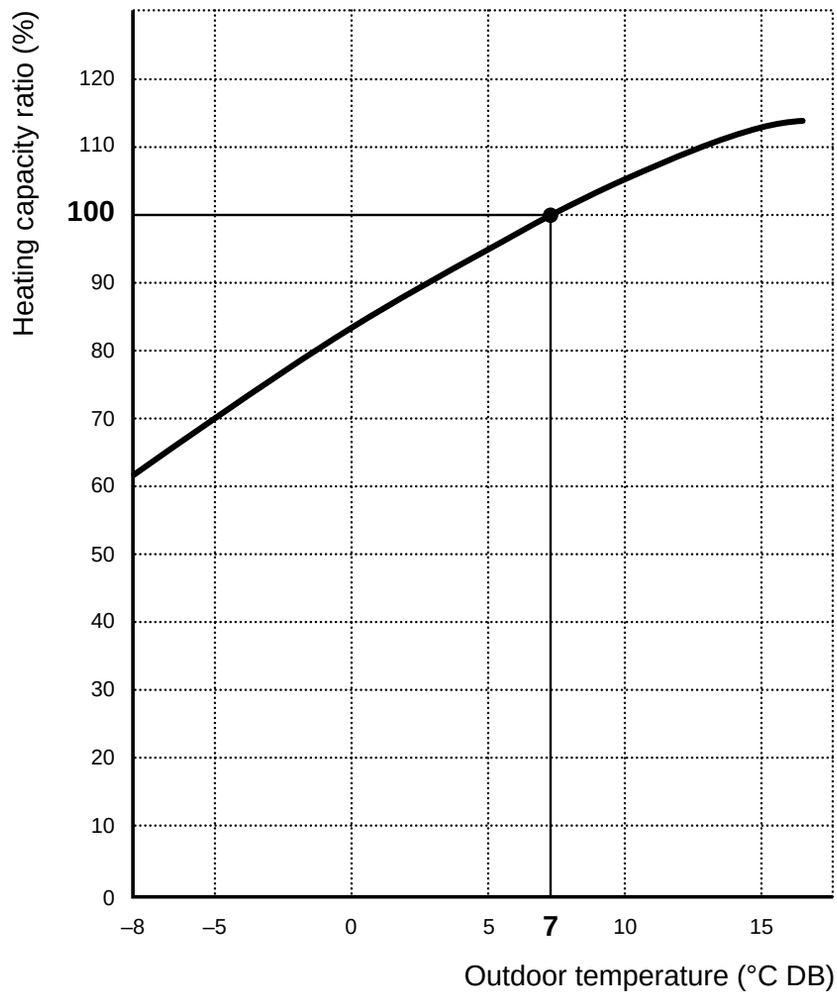




Unit : mm

4. HEATING CAPACITY

Indoor unit	Outdoor unit
AWR318HLE	AER318SH3 AER318SH
AWR322HLE	AER322SH3 AER322SH



NOTE

1) ●… Point of Rating condition
   Black dot in the chart indicate the following rating condition.
   Indoor : 20°C DB
   Outdoor : 7°C DB / 6°C WB

2) Above characteristics indicate instantaneous operation, which does not take into consideration defrost operation.

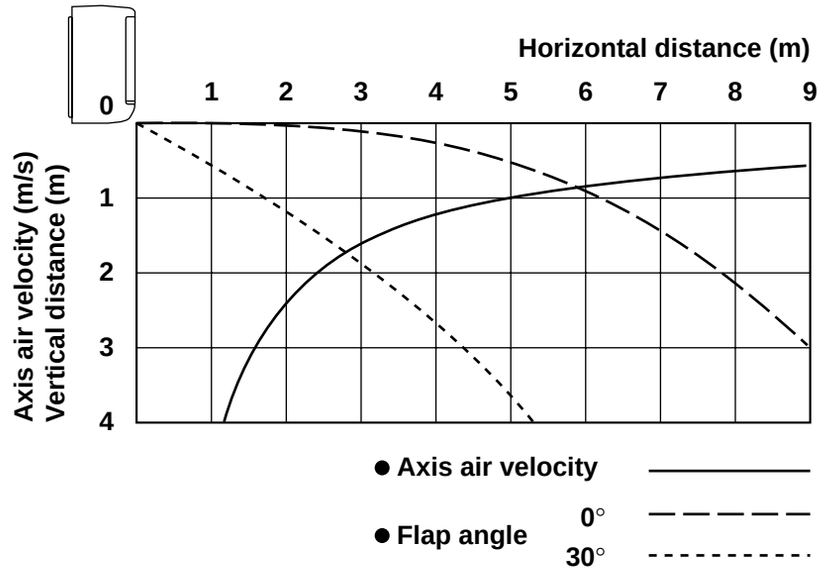
3) Fan speed : High

5. AIR THROW DISTANCE CHART

Indoor Unit **AWR318HLE**

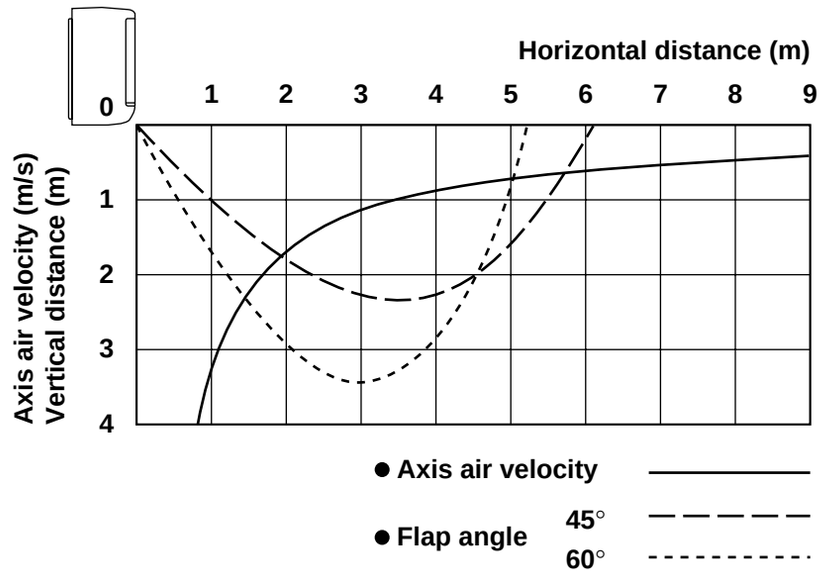
Cooling

Room air temp. : 27°C
Fan speed : High



Heating

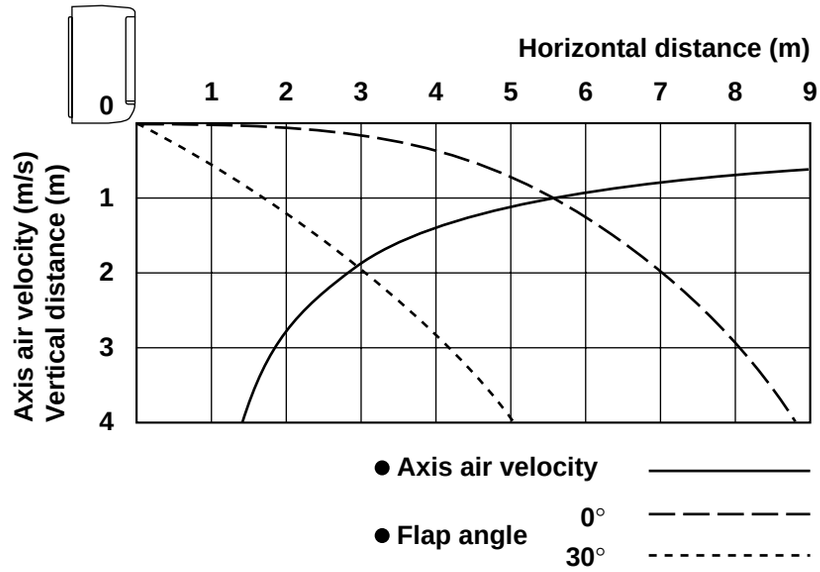
Room air temp. : 20°C
Fan speed : High



Indoor Unit **AWR322HLE**

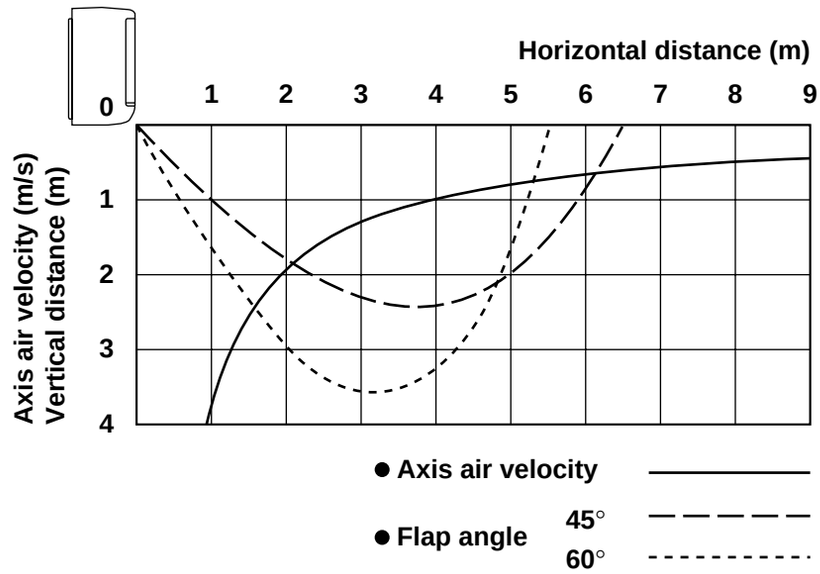
Cooling

Room air temp. : 27°C
Fan speed : High



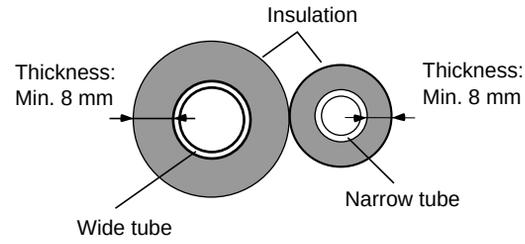
Heating

Room air temp. : 20°C
Fan speed : High



6. REFRIGERANT FLOW DIAGRAM

Insulation of Refrigerant Tubing



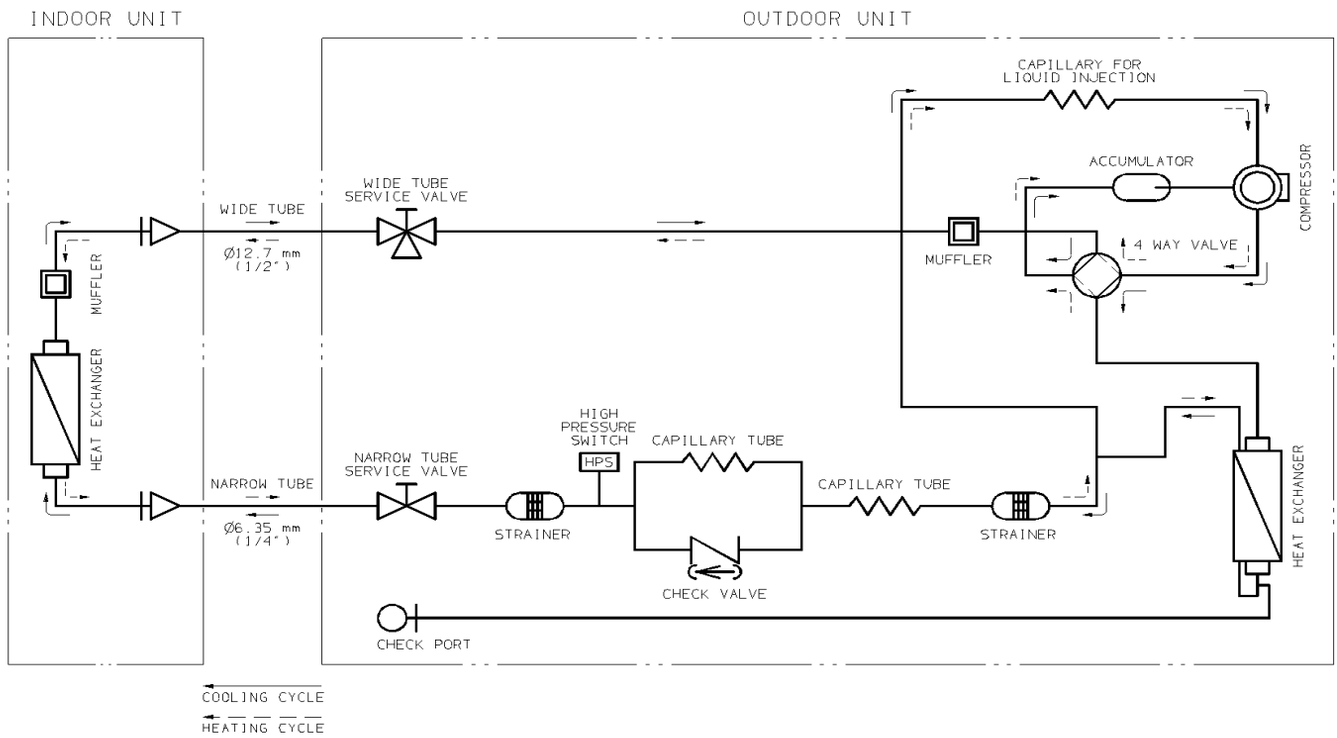
IMPORTANT

Because capillary tubing is used in the outdoor unit, both the wide and narrow tubes of this air conditioner become cold. To prevent heat loss and wet floors due to dripping of condensation, both tubes must be well insulated with a proper insulation material. The thickness of the insulation should be a min. 8 mm.

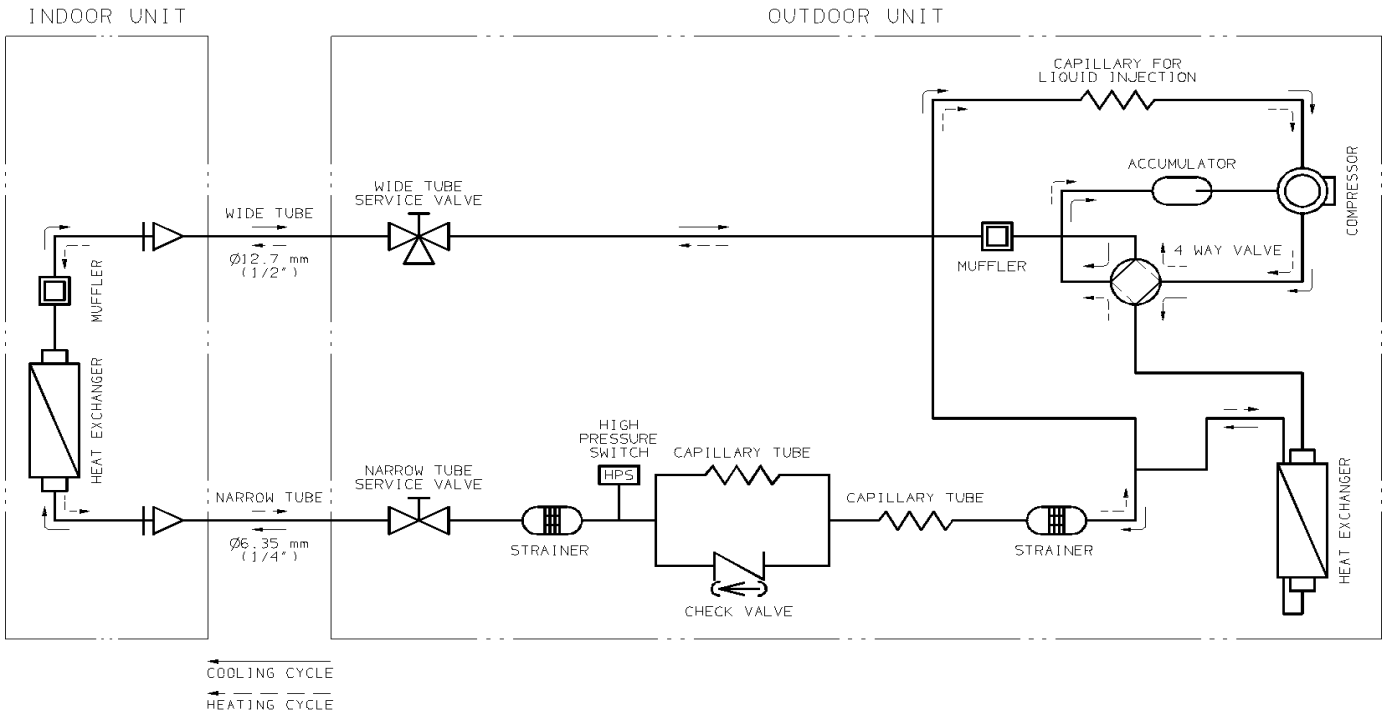
CAUTION

After a tube has been insulated, never try to bend it into a narrow curve because it can cause the tube to break or crack.

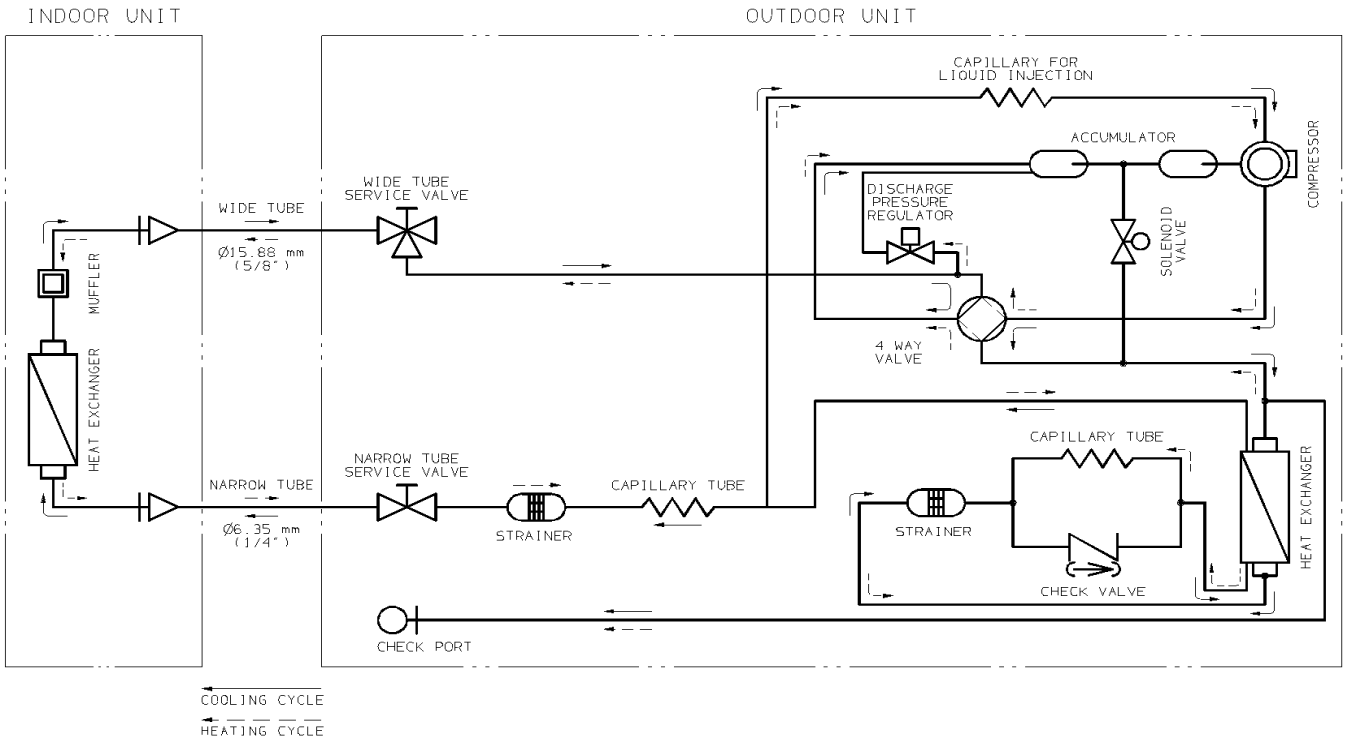
INDOOR UNIT **AWR318HLE**
OUTDOOR UNIT **AER318SH3**



INDOOR UNIT **AWR318HLE**
OUTDOOR UNIT **AER318SH**



INDOOR UNIT **AWR322HLE**
OUTDOOR UNIT **AER322SH3**
AER322SH



7. ELECTRICAL DATA

● Electrical Characteristics

Indoor Unit **AWR318HLE**
Outdoor Unit **AER318SH3**

■ Cooling

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50 Hz		400 V – 3N ~ 50 Hz	
Rating Conditions	Running Amps.	A	0.29	0.42	2.89	3.60
	Power Input	kW	0.067	0.085	2.05	2.20
Full Load Conditions	Running Amps.	A	0.29	0.42	4.29	5.00
	Power Input	kW	0.067	0.085	2.85	3.00

Rating Conditions: Indoor Air Temperature 27°C DB / 19°C WB
Outdoor Air Temperature 35°C DB
Full Load Conditions: Indoor Air Temperature 32°C DB / 23°C WB
Outdoor Air Temperature 43°C DB

■ Heating

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50 Hz		400 V – 3N ~ 50 Hz	
Rating Conditions	Running Amps.	A	0.29	0.42	2.99	3.70
	Power Input	kW	0.067	0.085	2.15	2.30
Full Load Conditions	Running Amps.	A	0.29	0.42	4.33	5.04
	Power Input	kW	0.067	0.085	3.10	3.25

Rating Conditions: Indoor Air Temperature 20°C DB
Outdoor Air Temperature 7°C DB / 6°C WB
Full Load Conditions: Indoor Air Temperature 25°C DB
Outdoor Air Temperature 22°C DB / 17°C WB

Indoor Unit **AWR318HLE**
Outdoor Unit **AER318SH**

■ Cooling

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50 Hz			
Rating Conditions	Running Amps.	A	0.29	0.42	9.79	10.5
	Power Input	kW	0.067	0.085	2.05	2.20
Full Load Conditions	Running Amps.	A	0.29	0.42	11.9	12.6
	Power Input	kW	0.067	0.085	2.50	2.65

Rating Conditions: Indoor Air Temperature 27°C DB / 19°C WB
Outdoor Air Temperature 35°C DB
Full Load Conditions: Indoor Air Temperature 32°C DB / 23°C WB
Outdoor Air Temperature 43°C DB

■ Heating

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50 Hz			
Rating Conditions	Running Amps.	A	0.29	0.42	10.3	11.0
	Power Input	kW	0.067	0.085	2.20	2.35
Full Load Conditions	Running Amps.	A	0.29	0.42	13.4	14.1
	Power Input	kW	0.067	0.085	2.85	3.00

Rating Conditions: Indoor Air Temperature 20°C DB
Outdoor Air Temperature 7°C DB / 6°C WB
Full Load Conditions: Indoor Air Temperature 25°C DB
Outdoor Air Temperature 22°C DB / 17°C WB

Indoor Unit **AWR322HLE**
Outdoor Unit **AER322SH3**

■ Cooling

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50 Hz		400 V – 3N ~ 50 Hz	
Rating Conditions	Running Amps.	A	0.36	0.52	3.92	4.80
	Power Input	kW	0.083	0.117	2.60	2.80
Full Load Conditions	Running Amps.	A	0.36	0.52	6.22	7.10
	Power Input	kW	0.083	0.117	3.97	4.17

Rating Conditions: Indoor Air Temperature 27°C DB / 19°C WB
Outdoor Air Temperature 35°C DB
Full Load Conditions: Indoor Air Temperature 32°C DB / 23°C WB
Outdoor Air Temperature 43°C DB

■ Heating

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50 Hz		400 V – 3N ~ 50 Hz	
Rating Conditions	Running Amps.	A	0.36	0.52	4.12	5.00
	Power Input	kW	0.083	0.117	2.80	3.00
Full Load Conditions	Running Amps.	A	0.36	0.52	6.30	7.18
	Power Input	kW	0.083	0.117	4.00	4.20

Rating Conditions: Indoor Air Temperature 20°C DB
Outdoor Air Temperature 7°C DB / 6°C WB
Full Load Conditions: Indoor Air Temperature 25°C DB
Outdoor Air Temperature 22°C DB / 17°C WB

Indoor Unit **AWR322HLE**
Outdoor Unit **AER322SH**

■ Cooling

			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50 Hz			
Rating Conditions	Running Amps.	A	0.36	0.52	11.9	12.8
	Power Input	kW	0.083	0.117	2.60	2.80
Full Load Conditions	Running Amps.	A	0.36	0.52	15.0	15.9
	Power Input	kW	0.083	0.117	3.28	3.48

Rating Conditions: Indoor Air Temperature 27°C DB / 19°C WB
Outdoor Air Temperature 35°C DB
Full Load Conditions: Indoor Air Temperature 32°C DB / 23°C WB
Outdoor Air Temperature 43°C DB

■ Heating

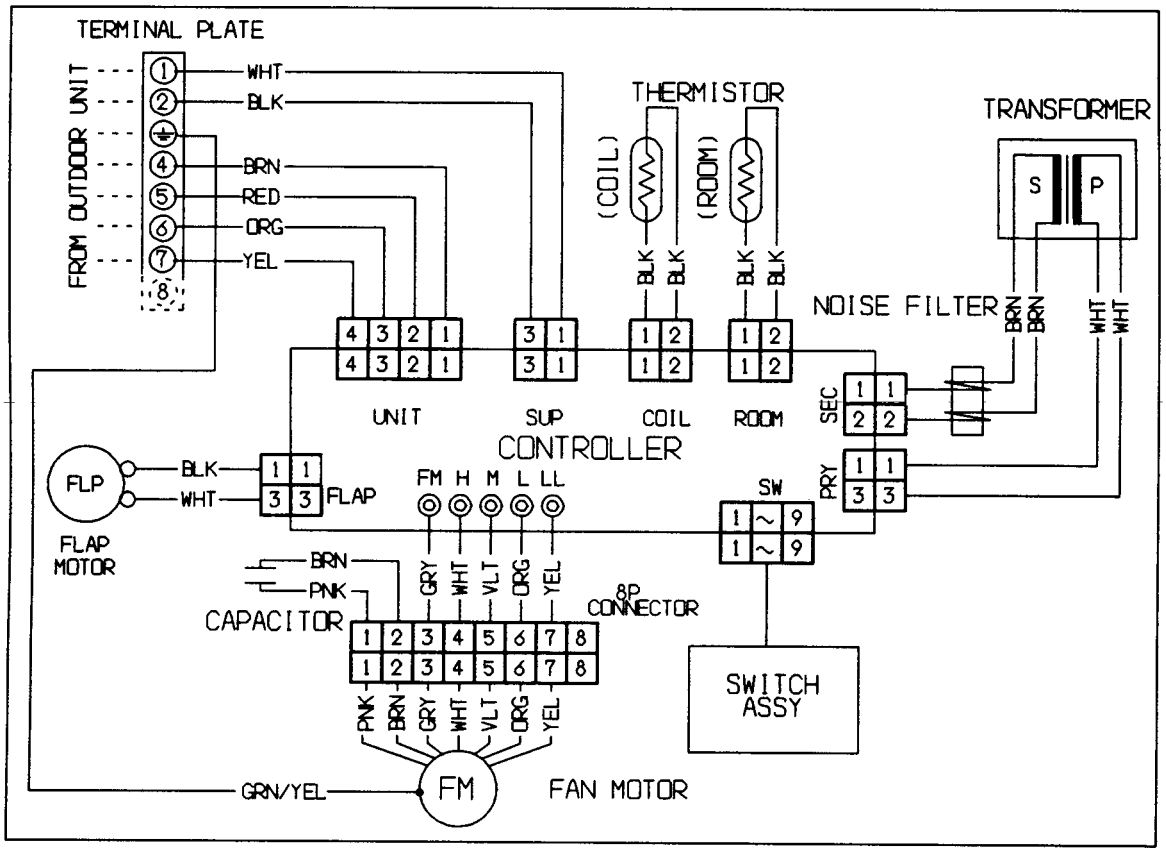
			Indoor Unit	Outdoor Unit		Complete Unit
			Fan Motor	Fan Motor	Compressor	
Performance at			230 V ~ 50 Hz			
Rating Conditions	Running Amps.	A	0.36	0.52	12.9	13.8
	Power Input	kW	0.083	0.117	2.80	3.00
Full Load Conditions	Running Amps.	A	0.36	0.52	15.7	16.6
	Power Input	kW	0.083	0.117	3.38	3.58

Rating Conditions: Indoor Air Temperature 20°C DB
Outdoor Air Temperature 7°C DB / 6°C WB
Full Load Conditions: Indoor Air Temperature 25°C DB
Outdoor Air Temperature 22°C DB / 17°C WB

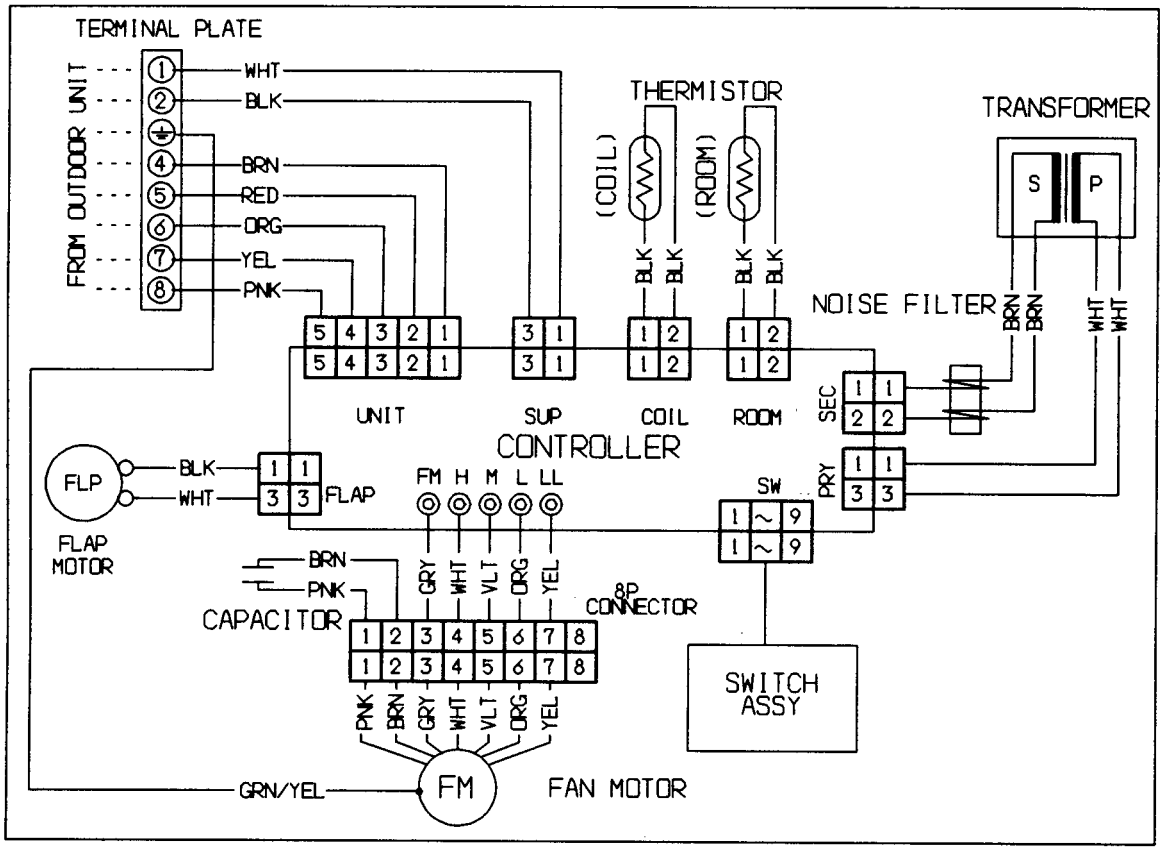
8. ELECTRIC WIRING DIAGRAMS

WARNING ***To avoid electrical shock hazard, be sure to disconnect power before checking, servicing and/or cleaning any electrical parts.***

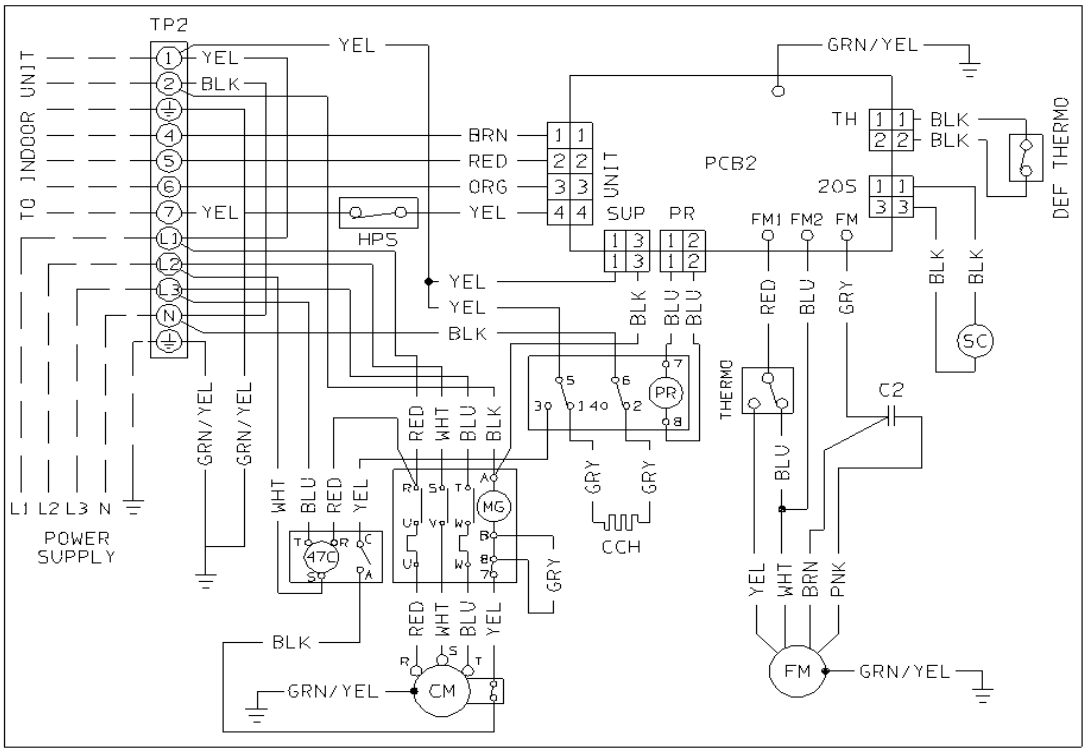
Indoor unit : AWR318HLE



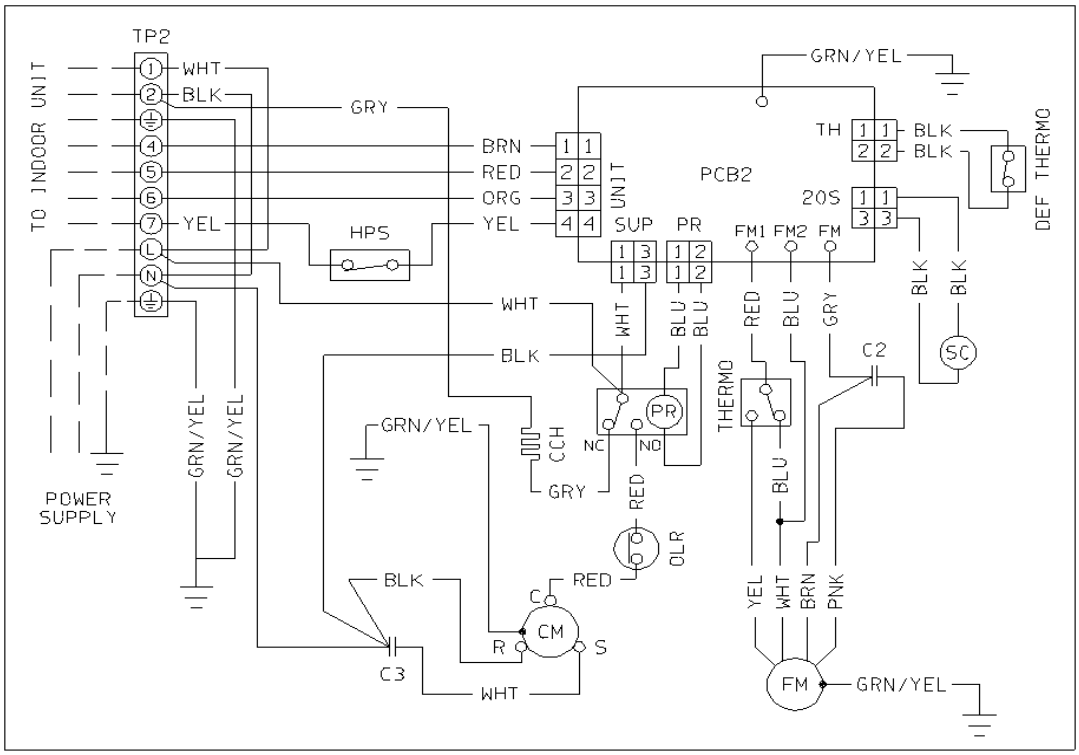
Indoor unit : AWR322HLE



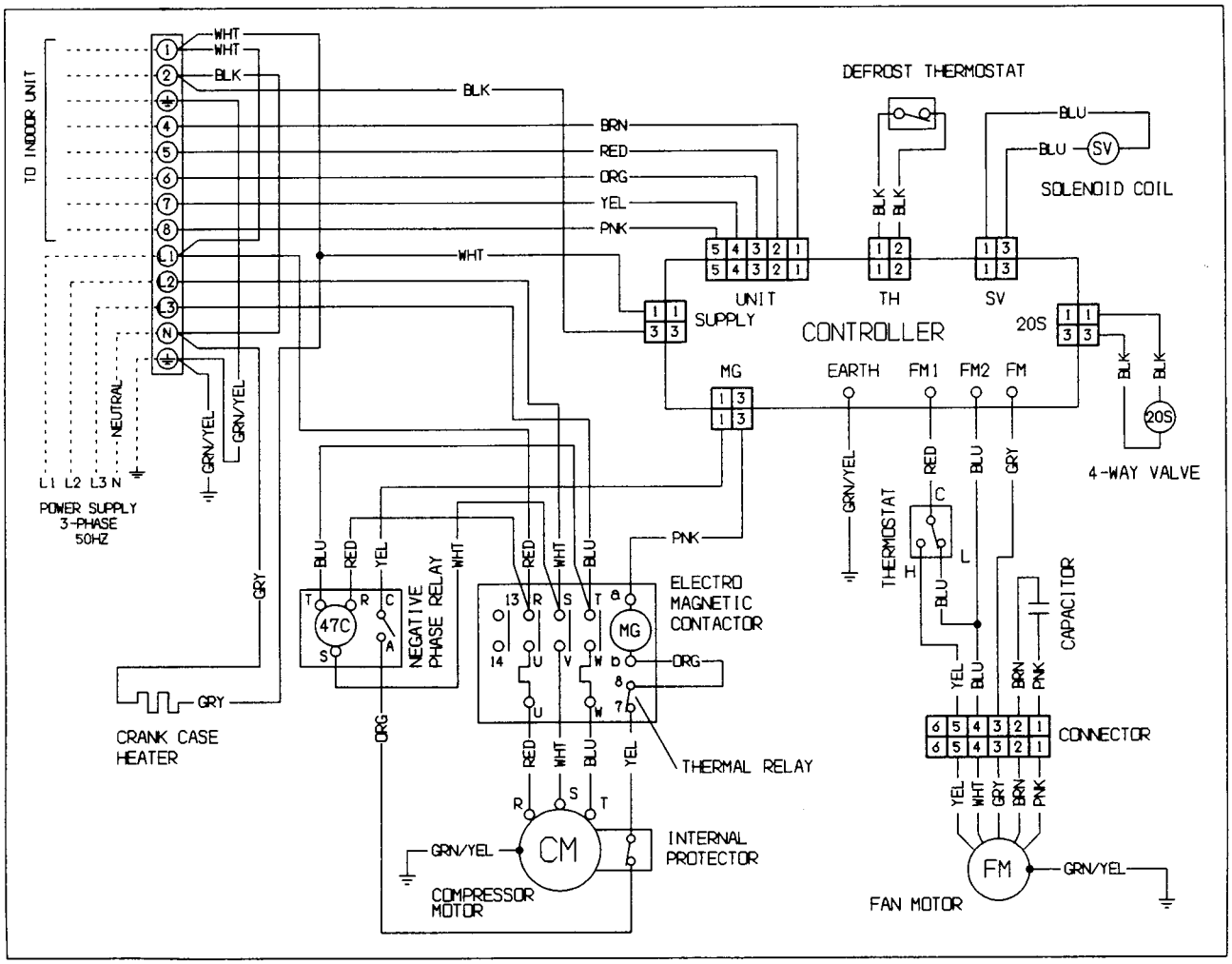
Outdoor unit: AER318SH3



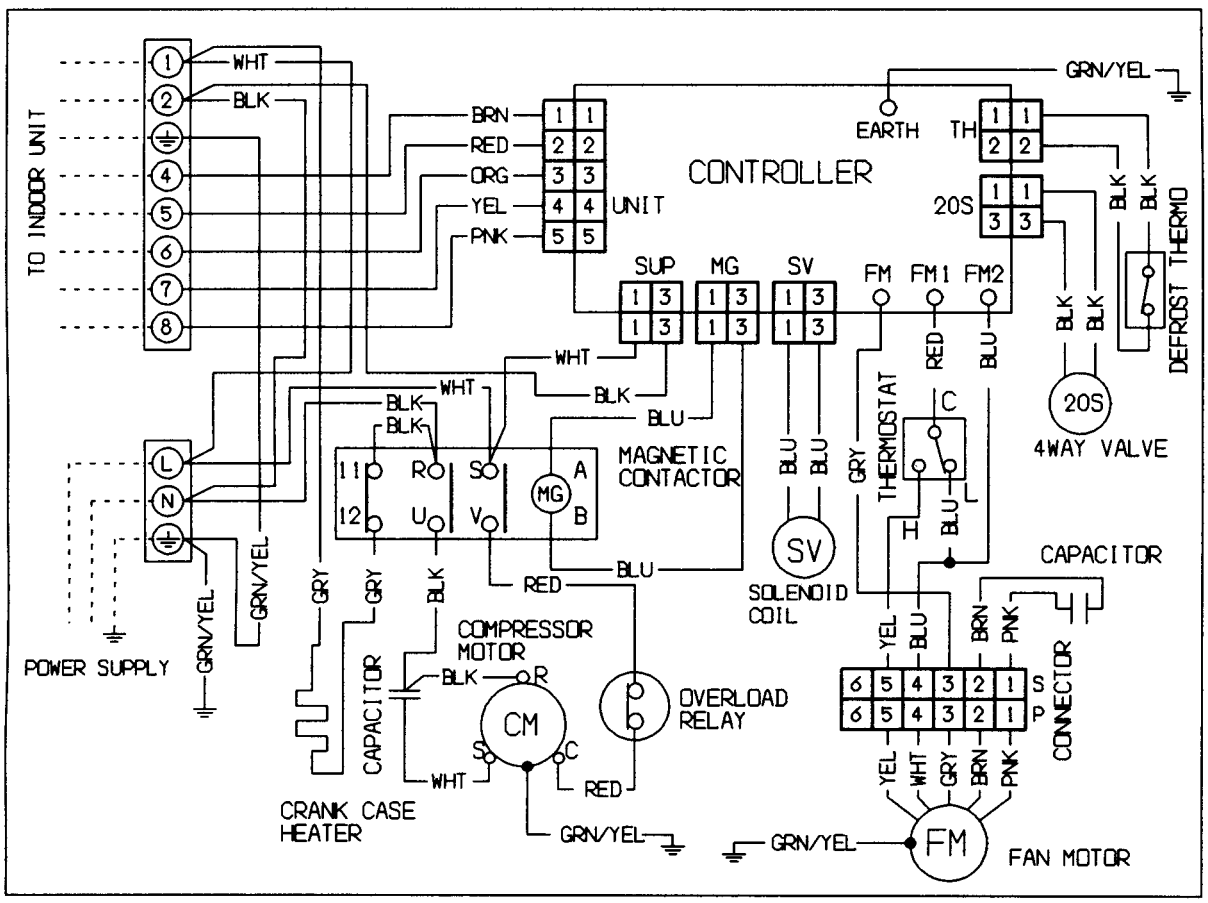
Outdoor unit: AER318SH



Outdoor unit: AER322SH3



Outdoor unit: AER322SH



9. REFRIGERANT R407C : SPECIAL PRECAUTIONS WHEN SERVICING UNIT

9-1. Characteristics of new refrigerant R407C

9-1-1. What is new refrigerant R407C

R407C is a new refrigerant that contains three types of non-azeotropy-type mixed refrigerant which does not adversely affect the Earth's ozone layer. Its refrigeration capacity and energy efficiency are about the same level as the conventional refrigerant R22

9-1-2. Components (mixing proportions)

HFC32 (23%) / HFC125 (25%) / HFC134a (52%)

9-1-3. Characteristics

- Less toxic, more chemically stable refrigerant.
- Composition of refrigerant R407C changes whether it is in gaseous phase or liquid phase. Thus, when there is a refrigerant leak the basic performance of the air conditioner may be degraded because of a change in composition of the remaining refrigerant. ***Therefore, do not add new refrigerant.*** Instead, recover the remaining refrigerant with the refrigerant recovery unit. Then, after evacuation, totally recharge the specified amount of refrigerant with the new refrigerant at its normal mixed composition state (liquid phase).
- When refrigerant R407C is used, the composition will differ depending on whether it is in gaseous or liquid phase, and the basic performance of the air conditioner will be degraded if it is charged while the refrigerant is in gaseous state. ***Thus, always charge the refrigerant while it is in the liquid phase.***

- **Ether-type oil is used for the compressor oil for R407C-type units, which is different from the mineral oil used for R22. Thus more attention to moisture prevention and faster replacement work compared with conventional models are required.**

9-2. Checklist before servicing

- **Tubing precautions**
  Refrigerant R407C is more easily affected by dust or moisture compared with R22, thus be sure to temporarily cover the ends of the tubing with caps or tape prior to installation.

- **No addition of compressor oil for R407C**
  No additional charge of compressor oil is permitted.

- **No use of refrigerant other than R407C**
  Never use a refrigerant other than R407C.

- **If refrigerant R407C is exposed to fire**
  Through welding, etc., toxic gas may be released when R407C refrigerant is exposed to fire. Therefore, be sure to provide ample ventilation during installation work.

- **Caution in case of R407C leak**
  Check for possible leak points with the special leak detector for R407C. If a leak occurs inside the room, immediately provide thorough ventilation.

9-3. Tools specifically for R407C

● **For servicing, use the following tools for R407C**

Tool Distinction	Tool Name
Tools specifically for R407C	• Gauge manifold • Charging hose • Gas leak detector • Refrigerant cylinder • Charging cylinder • Refrigerant recovery unit • Vacuum pump with anti-reverse flow **(✻1)** (Solenoid valve-installed type, which prevents oil from flowing back into the unit when the power is off, is recommended.) • Vacuum pump **(✻2)** ..... can be used if the following adapter is attached. • Vacuum pump adapter (reverse-flow prevention adapter) **(✻3)**. (Solenoid valve-installed adapter attached to a conventional vacuum pump.) • Electronic scale for charging refrigerant • Flare tool
Tools which can be commonly used for R22 and R407C	• Bender • Torque wrench • Cutter, Reamer • Welding machine, nitrogen gas cylinder

CAUTION

● **The above tools specifically for R407C must not be used for R22. Doing so will cause malfunction of the unit.**

● **For the above vacuum pump (✻1, ✻2) and vacuum pump adapter (✻3) , those for R22-type units can be used for R407C-type. However, they must be used exclusively for R407C and never alternately with R22.**

9-4. For tubing installation procedures

● When the tubes are connected, ***always apply HAB oil on the flare portions to improve the sealing of tubing.***

The following is the **HAB oil** generally used:
Esso: ZERICE S32

NOTE For details on tubing installation procedures, refer to the installation manuals attached to the indoor unit and outdoor unit.

argo

FILIBERTI S.P.A.

21040 Oggiona con S. Stefano (VA) - Via Per Solbiate, 49 - Italy

Direzione e Uffici: Via Varese, 90 - 21013 GALLARATE (VA)

Tel. 0331/755.111 - Telex. 331060 ARGO I - FAX 0331/776.240