

Ducted Split System Air Conditioners

Product Review ISD-K Series



R410A

Extra Long Life
Epoxy Coated Outdoor Coil

Nominal Cooling Capacity
5.2 – 95 kW



Now Including



ISD-K SERIES - DUCTED SPLIT SYSTEM AIR CONDITIONERS

GENERAL

The ISD-K Indoor Units, together with their associated OSA-RK Outdoor Units, have been conceived from the start as reverse cycle (heat pump) split systems – designed to be efficient both when heating and cooling.

TEMPERZONE LIMITED

temperzone is one of Australasia's largest manufacturers of reverse cycle split system air conditioners. The company has been supplying units to the residential, commercial and industrial markets for over 40 years. Manufacturing facilities are located in New Zealand and Australia.

temperzone's mission is to provide the most competitively priced, reliable and efficient air conditioning equipment available to the international market.

APPLICATIONS

Ducted split systems are unobtrusive, quiet, and designed to provide year round comfort – warming in Winter and cooling in Summer. **temperzone**'s wide product range offers a unit of performance capacity to suit small to large split system air conditioner applications, e.g. homes, apartments, offices, shops, restaurants, motels, hotels, open plan office and work spaces, supermarkets, shopping malls and auditoriums.

temperzone ducted systems are particularly suitable for rooms with suspended tile ceilings. Not only is valuable wall space preserved, but also the conditioned air can be ducted to the parts of the room where it is most needed.

ISD units are suited to applications where large volume spaces are to be air conditioned. Medium to long pipe and duct runs are possible enabling greater installation flexibility.

A low profile version of the ISD, named ISDL, is available for applications where ceiling space is limited and only short duct lengths are required, e.g. apartments, hotel rooms. These units are small, lightweight, very quiet and easy to install.

This range of units have been developed to meet the needs of typical applications. Should you have special requirements, such as higher air flows, heating in low/high ambients, or greater sensible duty units contact your nearest **temperzone** representative. **temperzone** engineers have extensive experience in designing air conditioning equipment for specific applications.

FEATURES

Refrigerant R410A. Each complete system uses refrigerant R410A which is deemed to have zero ozone depletion potential, and is supplied precharged for a 10 m line length (systems up to 27 kW).

Digital Scroll Compressor. 'Digital' systems include a digital scroll compressor, plus a conventional scroll compressor on twin systems. Each digital model/version provides a variable capacity ability that enables closer control of room temperature. This is achieved by avoiding on/off cycling of the compressor. These compressors have proven very reliable because of their design simplicity. Electrical harmonic noise is very low.

Efficient. These reverse cycle (heat pump) air conditioners provide one of the most efficient forms of heating you can invest in. For every 1 kW of power consumed, up to 3 kW of heat is generated. Each outdoor unit incorporates high efficiency scroll or rotary compressor/s. Heat exchange coils use inner grooved (rifled) tube for better heat transfer. High efficiency EC motors are used in some models.

Economical. Some ISD/OSA systems (refer table) have two independent refrigeration circuits to provide the flexibility and economy of two stage operation, i.e. utilising one or two circuits as conditions vary, plus the advantage of staggered starting.

Performance. These systems have been designed and tested to perform in ambient conditions as low as –5°C and as high as 46°C (52°C on some models). Multi-speed fan motors are used to match the supply air requirements. Models with EC motors can be controlled by either a 0-10V DC signal or High/Med/Low fan speed. EC Plug fan models have high static performance. The larger indoor units have belt driven fans for even finer tuning.

Quiet. Most models have their compressor/s isolated in built-in, insulated compartments to minimise noise. The indoor units are insulated for noise attenuation.

Slimline. The compact upright design of most of the smaller outdoor units requires only a 100 mm gap on the coil side where installation is against a wall. Their slimline cabinet is particularly practical where there is restricted space, e.g. side access pathways, balconies, narrow ledges, etc.

Durable. **temperzone** split systems are built tough to withstand all weathers. Their durable construction ensures a long life and excellent return on your investment. The outdoor coil's aluminium fins are epoxy coated for extra protection in corrosive environments, e.g. salt laden sea air. Outdoor unit cabinets are constructed from high grade galvanised steel (not plastic) - polyester powder coated (grey) for all weather protection. External fasteners are stainless steel. Indoor unit cabinets are constructed from high grade galvanised steel and also include corrosion resistant drain trays.

Service Access. Most indoor units have built-in drain trays that can be removed for ease of cleaning and service accessibility.

Insulation. Indoor unit cabinets are generously insulated to reduce condensation and contain noise.

Self Diagnostics. Outdoor Units include a controller (OUC) that has a display of LEDs to indicate faults and running conditions. A general fault indicator is included for interface to external systems.

Safety. The refrigeration systems includes a number of protection facilities, including: HP and loss of refrigerant indication, anti rapid cycle timers, frost protection, circuit breaker control circuits, electronic de-ice switch, crankcase heaters and 24 V control (larger systems). An externally attached safety drain tray is available for clients who require added peace of mind re condensate drainage.

User Friendly. ISD/L non-digital models up to 27 kW can be supplied with a **temperzone** SAT Controller. This controller has been designed to maintain a high level of comfort for room occupants. Emphasis has been placed on providing controls that are easy to use — despite the sophisticated microprocessor system that runs it. Use of the Auto and Timer function settings allows you to "set it and forget it".

Peace of Mind. The manufacturer operates a quality management system that conforms to AS/NZS **ISO 9001:2008**. **temperzone** products have been chosen, against worldwide competition, for use in some of the most exclusive projects — chosen because of their proven efficiency, durability, performance, reliability and value.

OPTIONS

- Filter box c/w washable polypropylene net filter (refer table)
- Pleated filters, 50mm thick, on belt drive indoor units
- Indoor unit spring mounting kit (ISDL 56K - ISD 380K)
- SAT Wall t/stat and safety drain tray on non-digital models up to 27kW
- Electric heater box for boost heat
- Soft starter (OSA 83–140RKS; standard on OSA 156RKS)
- Outdoor unit wall mounting brackets (OSA 55-182RK)
- TZ-701 Wall thermostat on models with 24V control
- SAT Controller kit (230 or 24V) for retrofit to all non-digital models

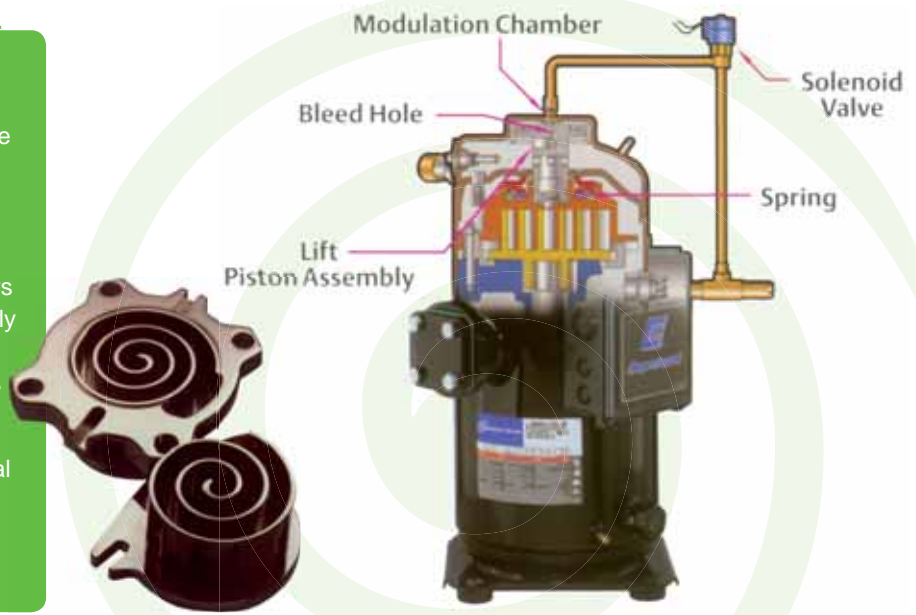
new diGital models!

SECRETS OF THE SCROLL

Introducing one of the first compressors to deliver a capacity range from 10% to 100% without the use of inverters.

Digital compressors ensure high efficiency through a unique feature termed axial compliance. This allows the fixed scroll to move incrementally in the axial direction to ensure that fixed and orbiting scrolls are always loaded together with optimal force.

With 70% fewer moving parts, digital compressors deliver enhanced performance with reliable and uncomplicated design.



Extended Capability. Digitals are particularly suitable for applications requiring full or high proportions of fresh air, VAV, close control and supply air temperature control.

Control Option. The compressor is controlled variably by a 0–10 volt DC signal that can be supplied either by a BMS system, a sophisticated controller or temperzone's optional TZT-701 Controller.



DIGITAL MODELS

Power Supply: 400 - 415 V a.c. 50Hz						
Indoor Unit		ISD 135K	ISD 176K	ISD 230K	ISD 298KB	
Outdoor Unit		OSA 135RKTGH	OSA 176RKVG	OSA 230RKTGH	OSA 298RKTBG	
Nominal Cooling Capacity *1	kW	13.5	17.7	23.0	31.0	
Net Cooling Capacity	kW	13.00	17.10	21.73	30.05	
E.E.R. (cooling)		2.96	2.93	3.31	3.05	
Heating Capacity *2 (Rev. Cycle versions)	kW	12.4	16.8	22.2	30.9	
Indoor Air Flow (nominal)	l/s	820	1030	1200	1570	
Sound Pressure Level (Indoor/Outdoor) *3	dB(A)	64 / 51	60 / 54	66 / 54	74 / 76	
Maximum Vertical Separation	m	20	20	20	20	
Maximum Standard Line Length	m	30	30	30	30	
Maximum Extended Line Length (with extra protection) *4	m	60	60	60	60	
Running Amps (Total System)	A/ph.	6 / 7 / 7	8 / 8 / 10	14 / 14 / 16	15 / 15 / 22	
Dimensions (Indoor/ Outdoor)	Width	mm	1140 / 1075	1495 / 1210	1655 / 1250	1675 / 1460
	Height	mm	420 / 865	420 / 1130	420 / 1380	565 / 990
	Depth	mm	630 / 420	650 / 630	650 / 450	655 / 1180
Recommended Pipe Sizes (Suction/Liquid)	mm dia	19 / 10	22 / 13	22 / 13	19 / 13 (x2)	
Weight (Indoor/Outdoor)	kg	50 / 116	61 / 146	74 / 179	116 / 285	
Features *5		c d f g h p s w	c d f g h p s w	c f g h p s w	c f g s u v w	

*See page 6 for Notes and Key to Features.

ISD-K SERIES - SINGLE PHASE SYSTEMS (NON-DIGITAL)




Power Supply: 220—240 V a.c. 50 Hz			ISDL 56K	ISDL 83K	ISDL 96K	ISDL 110K
Indoor Unit						
Outdoor Unit						
Nominal Cooling Capacity * ¹	kW		5.4	7.7	9.5	11.2
Net Cooling Capacity	kW		5.38	8.04	9.26	10.90
E.E.R. (cooling)			2.91	2.99	2.91	2.98
Heating Capacity * ² (Rev. Cycle versions)	kW		4.7	7.6	8.6	10.0
Indoor Air Flow (nominal)	l/s		280	340	500	500
Sound Pressure Level (Indoor/Outdoor) * ³	dB(A)		50 / 47	50 / 48	49 / 50	49 / 50
Maximum Vertical Separation	m		12	16	16	16
Maximum Standard Line Length	m		30	30	30	30
Maximum Extended Line Length (with extra protection) * ⁴	m		—	40	40	40
Running Amps (Total System)	A/ph.		11.5	11.5	16.4	16.3
Dimensions (Indoor/ Outdoor)	Width	mm	1040 / 890	1040 / 1040	1430 / 1040	1430 / 1040
	Height	mm	260 / 660	260 / 660	260 / 660	260 / 765
	Depth	mm	780 / 375	780 / 395	780 / 395	780 / 395
Recommended Pipe Sizes (Suction/Liquid)	mm dia.		16 / 6	16 / 10	16 / 10	19 / 10
Weight (Indoor/Outdoor)	kg		30 / 57	30 / 85	42 / 86	42 / 91
Features * ⁵			f h p s t	a f h p s t	a f h p s t	a f h p s t









Power Supply: 220—240 V a.c. 50 Hz			Standard Profile Indoor Units					
Indoor Unit								
Outdoor Unit								
Nominal Cooling Capacity * ¹	kW		7.7	9.3	11.0	13.5	15.2	15.4
Net Cooling Capacity	kW		8.46	9.35	10.60	12.95	14.76	14.95
E.E.R. (cooling)			2.90	2.92	2.90	3.05	2.96	2.96
Heating Capacity * ² (Rev. Cycle versions)	kW		8.0	8.4	10.3	13.0	13.6	14.8
Indoor Air Flow (nominal)	l/s		460	500	560	780	900	900
Sound Pressure Level (Indoor/Outdoor) * ³	dB(A)		56 / 48	59 / 50	59 / 50	64 / 51	63 / 52	63 / 54
Maximum Vertical Separation	m		16	16	16	20	20	20
Maximum Standard Line Length	m		30	30	30	30	30	30
Maximum Extended Line Length (with extra protection) * ⁴	m		40	40	40	60	60	60
Running Amps (Total System)	A/ph.		12.0	16.5	16.7	20	24	25
Dimensions (Indoor/ Outdoor)	Width	mm	835 / 1040	1050 / 1040	1050 / 1035	1140 / 1075	1655 / 1200	1655 / 1125
	Height	mm	420 / 660	420 / 660	420 / 765	420 / 865	420 / 975	420 / 970
	Depth	mm	650 / 395	650 / 395	650 / 400	630 / 420	630 / 630	630 / 420
Recommended Pipe Sizes (Suction/Liquid)	mm dia.		16 / 10	16 / 10	19 / 10	19 / 10	22 / 13	22 / 13
Weight (Indoor/Outdoor)	kg		36 / 85	40 / 85	40 / 91	50 / 116	74 / 141	74 / 133
Features * ⁵			a f h p s t	a f h p s t	a f h p s t	a f h p s t	f h p s t u	f h p s t

*See page 6 for Notes and Key to Features.

ISD-K SERIES - THREE PHASE SYSTEMS (NON-DIGITAL)



Power Supply: 400 - 415 V a.c. 50Hz			Low Profile	Standard Profile			
Indoor Unit			ISDL 110K 	ISD 110K 	ISD 135K 	ISD 156K 	ISD 156K 
Outdoor Unit			OSA 110RKTH 	OSA 110RKTH 	OSA 140RKTH 	OSA 156RKTV 	OSA 156RKTH 
Nominal Cooling Capacity *1	kW		11.2	11.0	13.5	15.2	15.4
Net Cooling Capacity	kW		10.90	10.60	12.95	14.76	14.95
E.E.R. (cooling)			2.98	2.9	3.05	2.96	3.05
Heating Capacity *2 (Rev. Cycle versions)	kW		10.0	10.3	13.0	13.6	14.8
Indoor Air Flow (nominal)	l/s		500	560	780	900	900
Sound Pressure Level (Indoor/Outdoor) *3	dB(A)		49 / 50	59 / 50	64 / 51	63 / 52	63 / 54
Maximum Vertical Separation	m		20	20	20	20	20
Maximum Standard Line Length	m		30	30	30	30	30
Maximum Extended Line Length (with extra protection)*4	m		40	40	60	60	60
Running Amps (Total System)	A/ph.		6.7 / 5.3 / 5.1	8.8 / 5.5 / 5.1	12.5 / 7 / 7	8 / 8 / 11	12 / 8 / 8
Dimensions (Indoor/ Outdoor)	Width	mm	1430 / 1035	1050 / 1035	1140 / 1075	1655 / 1200	1655 / 1125
	Height	mm	260 / 765	420 / 765	420 / 865	420 / 975	420 / 970
	Depth	mm	780 / 400	650 / 400	630 / 420	630 / 630	630 / 420
Recommended Pipe Sizes (Suction/Liquid)	mm dia		19 / 10	19 / 10	19 / 10	22 / 13	22 / 13
Weight (Indoor/Outdoor)	kg		42 / 88	40 / 91	50 / 116	74 / 141	74 / 133
Features *5			f h p s t	f h p s t	f h p s t	f h p s t u	f h p s t

Power Supply: 400 - 415 V a.c. 50Hz			Standard Profile			
Indoor Unit			ISD 200K 	ISD 200K 	ISD 230K 	ISD 270K 
Outdoor Unit			OSA 200RKTH 	OSA 200RKTV 	OSA 230RKTH 	OSA 270RKTH 
Nominal Cooling Capacity *1	kW		19.3	19.3	23.0	26.8
Net Cooling Capacity	kW		18.20	18.20	22.26	25.86
E.E.R. (cooling)			2.94	2.94	3.31	3.12
Heating Capacity *2 (Rev. Cycle versions)	kW		17.3	17.3	22.2	25.3
Indoor Air Flow (nominal)	l/s		1100	1100	1200	1440
Sound Pressure Level (Indoor/Outdoor) *3	dB(A)		66 / 52	66 / 54	66 / 54	64 / 54
Maximum Vertical Separation	m		20	20	20	20
Maximum Standard Line Length	m		30	30	30	30
Maximum Extended Line Length (with extra protection)*4	m		60	60	60	90
Running Amps (Total System)	A/ph.		14 / 9 / 8	14 / 8 / 8	16 / 11 / 11	18.5 / 13 / 13
Dimensions (Indoor/ Outdoor)	Width	mm	1495 / 1125	1495 / 1210	1655 / 1250	1665 / 1250
	Height	mm	420 / 1120	420 / 980	420 / 1380	555 / 1380
	Depth	mm	630 / 420	630 / 630	630 / 450	650 / 450
Recommended Pipe Sizes (Suction/Liquid)	mm dia.		22 / 13	22 / 13	22 / 13	28 / 13
Weight (Indoor/Outdoor)	kg		61 / 155	61 / 142	74 / 179	93 / 204
Features *5			f h p s t	f h p s t	f h p s t	f p s t

*See page 6 for Notes and Key to Features.

ISD-K SERIES - THREE PHASE SYSTEMS (NON-DIGITAL)



Power Supply: 400 - 415 V a.c. 50Hz			Mid Range Models c/w Direct Drive Indoor Fan				
Indoor Unit			ISD 298KB	ISD 310KBY	ISD 310KB-P	ISD 380KBY	ISD 380KB-P
Outdoor Unit			OSA 298RKTB	OSA 310RKTB	OSA 310RKTB	OSA 380RKTB	OSA 380RKTB
Nominal Cooling Capacity * ¹	kW		31.0	31.6	31.6	37.1	37.1
Net Cooling Capacity	kW		30.05	30.7	30.6	35.9	35.9
E.E.R. (cooling)			3.05	3.37	3.32	3.26	3.20
Heating Capacity * ² (Rev. Cycle versions)	kW		30.9	30.1	30.1	38.8	38.5
Indoor Air Flow (nominal)	l/s		1570	1900	1900	2100	2100
Sound Pressure Level (Indoor/Outdoor) * ³	dB(A)		76	59	59	64	64
Maximum Vertical Separation	m		20	20	20	20	20
Maximum Standard Line Length	m		30	40	40	40	40
Maximum Extended Line Length (with extra protection) * ⁴	m		60	90	90	90	90
Running Amps (Total System)	A/ph.		22 / 15 / 15	20 / 17 / 17	23 / 14 / 14	22 / 17 / 16	22 / 17 / 17
Dimensions (Indoor/ Outdoor)	Width	mm	1675 / 1460	2050 / 1680	2050 / 1680	2315 / 1755	2315 / 1755
	Height	mm	565 / 990	700 / 1515	700 / 1515	705 / 1420	705 / 1420
	Depth	mm	655 / 1180	740 / 825	830 / 825	830 / 1480	830 / 1480
Recommended Pipe Sizes (Suction/Liquid)	mm dia.		19 / 13 (x2)	22 / 13 (x2)	22 / 13 (x2)	22 / 13 (x2)	22 / 13 (x2)
Weight (Indoor/Outdoor)	kg		116 / 285	179 / 301	162 / 301	203 / 410	169 / 410
Features * ⁵			c f s u v	c e f s u v	c e f j s u v	c e f s u v	c e f j s u v

Power Supply: 400 - 415 V a.c. 50Hz			High Capacity Models c/w Belt Drive Indoor Fan				
Indoor Unit			ISD 465KB	ISD 520KB	ISD 630KB	ISD 840KB	ISD 950KB
Outdoor Unit			OSA 465RKTBV	OSA 520RKTVB	OSA 630RKTVB	OSA 840RKTVB	OSA 950RKTVB
Nominal Cooling Capacity * ¹	kW		44.6	52.5	62.7	84.7	94.9
Net Cooling Capacity	kW		42.64	49.88	58.80	79.38	89.95
E.E.R. (cooling)			2.98	2.96	2.75	2.7	2.7
Heating Capacity * ² (Rev. Cycle versions)	kW		44.0	52.2	61.9	79.8	90.1
Indoor Air Flow (nominal)	l/s		2550	2800	3250	4500	5000
Sound Pressure Level (Indoor/Outdoor) * ³	dB(A)		64	63	64	66	66
Maximum Vertical Separation	m		20	20	20	20	20
Maximum Standard Line Length	m		40	50	50	50	50
Maximum Extended Line Length (with extra protection) * ⁴	m		90	90	90	90	90
Running Amps (Total System)	A/ph.		31 / 26 / 25	37 / 37 / 37	43 / 43 / 43	59 / 50 / 50	58 / 59 / 59
Dimensions (Indoor/ Outdoor)	Width	mm	1565 / 1755	1670 / 1755	1670 / 1755	2220 / 2300	2220 / 2300
	Height	mm	1210 / 1420	1005 / 1200	1005 / 1200	1070 / 1210	1210 / 1280
	Depth	mm	1200 / 1480	1200 / 1510	1200 / 1510	1320 / 1680	1320 / 1680
Recommended Pipe Sizes (Suction/Liquid)	mm dia.		22 / 13 (x2)	28 / 13 (x2)	28 / 13 (x2)	35 / 16 (x2)	35 / 16 (x2)
Weight (Indoor/Outdoor)	kg		277 / 365	250 / 438	274 / 446	372 / 546	383 / 560
Features * ⁵			b c u v	b c u v	b c u v	b c u v	b c u v

*See page 6 for Notes and Key to Features.

Notes

Capacities are for close coupled systems. Allowance must be made for pipe length, pipe size and bends. Refer to separate Technical Data pamphlets for performance data under a range of conditions.

*1 Nominal Cooling Capacity at AS/NZS 3823 conditions: Indoor Entering Air Temperature 27°C D.B., 19°C W.B.; Outdoor Entering Air Temperature 35°C D.B.

Net Cooling Capacity figures at AS/NZS 3823 include an allowance for fan motor heat loss.

*2 Nominal Heating Capacity at AS/NZS 3823 conditions: Indoor Entering Air Temperature 21°C D.B.; Outdoor Entering Air Temperature 7°C D.B., 6°C W.B.

*3 Indoor unit at 1 m from outlet of 1 m insulated duct (to JIS 8616); Outdoor unit at 3 m.

*4 Refer to the *Split Systems Installation Guide* published at www.temperzone.biz, or consult your nearest temperzone representative

***5 Key to Features:**

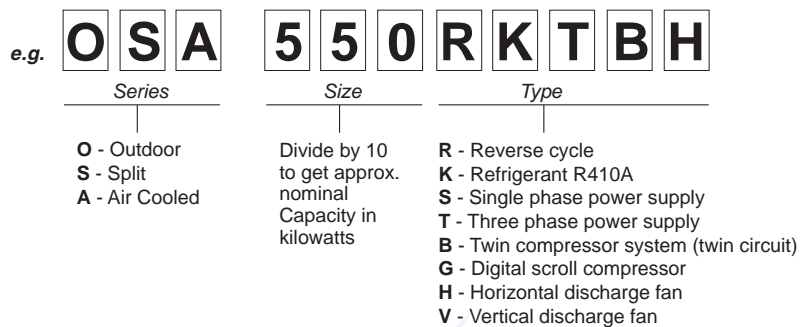
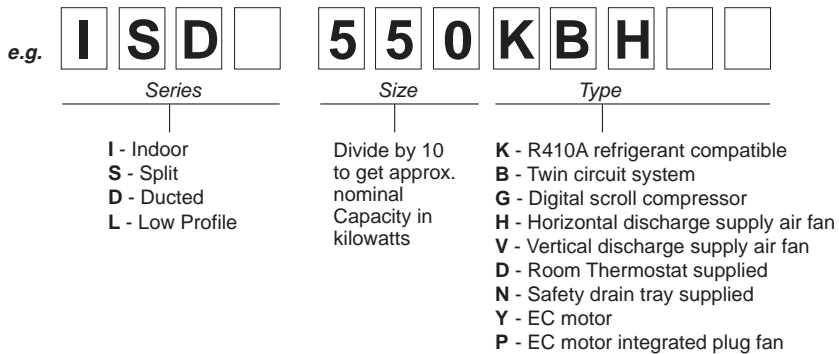
for extended line length requirements.

- a – Soft starter option
- b – Belt drive indoor fan
- c – 24 volt control
- d – Single phase version available
- e – EC motor
- f – Filter box option
- g – Digital compressor (single)

- h – Heater box option
- j – Plug fan
- p – Precharged for 10 m line length
- s – Indoor unit spring mounting kit option
- t – Wall t/stat & safety drain tray option
- u – Upward discharge outdoor air fans
- v – Twin compressor system (twin circuit)
- w – Optional TZT-701 Controller supplied for digitals

Materials and specifications subject to change without notice due to the manufacturer’s ongoing research and development programme.

NOMENCLATURE



Optional SAT Wall Thermostat
for non-digital systems up to 27kW



OSA 520RKT
outdoor unit

ISD 520KBH
indoor unit



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