



**TRANE**



*Solution Plus with R-410A*  
*Split System Solution*

# Split System Solution

Developed to meet the commercial and industrial markets. All Solution Plus models are designed to provide installation and maintenance simplicity, combined with the high reliability of Trane products. The main characteristics of Solution Plus line are:

- **Modular Units**, factory pre-defined by the Client, for vertical or horizontal assembly, with several discharge options. The units are supported by galvanized steel rails, "U" profile, to facilitate lifting and serve as support.

- **Solution Plus w/ Cond. Un. TRCE has 8 Models**, with capacities ranging from 5 to 30 TR and air flows ranging from 2,000 to 25,000 m<sup>3</sup>/h.

- **Solution Plus w/ Cond. Un. TRAE has 11 Models**, with capacities ranging from 5 to 50 TR and air flows ranging from 2,000 to 40,000 m<sup>3</sup>/h.

- **TVR LX with Solution Plus** is the integration of Solution Plus evaporator units with TVR LX condensing units, which have diverse modulations, with capacities ranging from 5 to 70 TR, according to the modulation arrangement. Refer to the maximum possible combinations of evaporator units in Trane TVR Systems catalogue.

- **Double Wall**, the steel panels in coil and fan models are internally isolated with 25-mm expanded polyurethane.

- **Down Flow**, Discharge Option, the coil and the fan module set has several discharge options, including the down flow discharge, offering more versatility to your job.

- **Ecological Refrigerant – R-410A**, for 60Hz units and R-407C for 50Hz units only.

- **TRANE Wavy-3B Coils**, the coil is built with seamless copper tubes. The copper tubes are mechanically expanded on the aluminum fins for perfect contact between fins and tubes.

- **Aluminum Structure**, the coil and fan modules have polished, laminated aluminum structure, with internal thermoinsulating coating so as to eliminate thermal bridge.

- **Several filtering options**, standard or double filtering, with permanent or disposable filters.

- **Evaporator Unit with 2- or 4-pole motors**, 60 Hz (IP21 and IP55), with adjustable pulley.

- **Fans**, forward curved blades, (Siroco) type or backward curved blades (Limit Load), sized to overcome total static pressures up to 160 mmca.

- **Optional external installation**, with manufacturing availability of evaporator units ready to operate at the same time.

**Table 01 - Solution Plus assembly combinations**

Models	Assembly		
	Rated. Capacity (TR)	Condensing Unit	
		TRCE	TRAE
DXPA05 - 1 circ.	5	TRCE050	TRAE050
DXPA07 - 1 circ.	7,5	TRCE075	TRAE075
DXPA10 - 2 circ.	10	TRCE100 or 2x TRCE050	TRAE100 or 2x TRAE050
DXPA12 - 2 circ.	12,5	TRCE050 + TRCE075	TRAE050 + TRAE075
DXPA15 - 2 circ.	15	TRCE150 or 2x TRCE075	TRAE150 or 2x TRAE075
DXPA20 - 2 circ.	20	2x TRCE100	TRAE200 or 2 x TRAE100
DXPA25 - 2 circ.	25	TRCE150 + TRCE100	TRAE250
DXPA30 - 2 circ.	30	2 x TRCE150	2 x TRAE150
DXPA35 - 2 circ.	35	No Option	TRAE150 + TRAE200
DXPA40 - 2 circ.	40	No Option	TRAE200 + TRAE200
DXPA50 - 2 circ.	50	No Option	TRAE250 + TRAE250

\*\* The mixing box module is optionally supplied and the assembly code can be DXTA or DLTA

- **TOPSS Selection Program.**

**Protection against corrosion in the product**

If it is necessary to install air conditioning equipment in environments with corrosive atmosphere such as acid gases, alkaline gases and sea breeze, Trane recommends the application of an extra corrosion protection, such as Phenolic protection or ADSIL® application.

- **Fast production cycle**, it is a standard configuration option offering reduction in the manufacturing time

*For more information, please contact your local dealer.*

Solution Plus is a split system, designed and planned to meet the most demanding market conditions, combining installation versatility, easy maintenance and low operation cost. Solution Plus consists of:

**Coil Module**

This module consists of a filter, cooling coil, expansion valve and a tray with drain. Optionally, it can be supplied with electric heating resistances. This module has three frames to install up to three filters of 1" each.

**Fan Module**

It consists of a forward or backward curved blade fan (Limit Load), drive engine, adjustable engine pulley, fan pulley and belts. The fan module has several options of air discharge. It has a leatherette canvas collar, to facilitate the attachment of external air intake and return air ducts. The collar width ranges from 120 to 370 mm, according to the model.

**Mixing Box Module (Optional)**

The Mixing Box is always assembled before the Coil Module. The Mixing Box is a box where the external air intake and return air ducts can be attached. The Mixing Box Module has dampers made of galvanized steel plate, with opposing blades and shaft for manual or automatic drive, through the air regulation dampers. When Solution Plus is assembled with a Mixing Box, the filters are incorporated to the box. There are covers to access the filters on box sides of the box.

**Final Filter Box**

This module is an option for installations requiring a better air treatment. Placed after the fan module and the coil module, this option enables the use of fine (bag type) and Absolute (H.E.P.A) filtration. When this type of special filters is required, its assembly must be considered in this module, because the filter width does not allow its use in another type of module, only in the Final Filter.

**Return Module**

This option is also available to treat the return air. As well as in the Final Filter Module, it is possible to put deeper filters in this module, such as the F8 Bag filter.

**Empty Module**

Module built with the same characteristics describe previously (see description of the cabinet construction).

It is an empty module which is used for the field accessory installation (noise attenuator, humidifier, electric heater, etc).

### Condensing Unit TRAE

TRAE condenser units are equipped with Scroll compressors, with an horizontal condensation discharge for 5 to 15 TR models and with a vertical discharge for above 20 TR models. The structure is manufactured with galvanized steel plate with paint finish. The coils are made with Wavy-3B aluminum fin, with 3/8 inch internally grooved copper tube mechanically expanded in the fins.

### Nominal Capacities

TRAE units are available in the following rated capacities:

TRAE 050 - 5.0 TR

TRAE 075 - 7.5 TR

TRAE 100 - 10.0 TR

TRAE 150 - 15.0 TR

TRAE 200 - 20.0 TR

TRAE 250 - 25.0 TR

### Condensing Unit TRCE

TRCE condensing units consist basically of 2 modules (heat exchanger and fan), equipped with Scroll compressors, with 3 discharge options. The structure is in galvanized steel plate, which receives painting, new technology called "Micro-channel" (MCHX), consisting of three main components: micro channel flat tube, fins located between alternating layers of tubes and two types of coolant manifolds. All components are made of aluminum.

### Nominal Capacities

TRCE units are available in the following rated capacities:

TRCE 050 - 5.0 TR

TRCE 075 - 7.5 TR

TRCE 100 - 10.0 TR

TRCE 150 - 15.0 TR

### Scroll Compressor

TRAE/TRCE units are equipped with Scroll compressors, which are fixed and state-of-the-art.

The main advantages of Scroll compressors in Trane Solution Plus units over a conventional fixed scroll compressor are:

- Increase in energy efficiency up to 7% and better compressor operation under partial loads.
- Improvement in compressor performance and reliability by working in optimized compression rates.
- Better oil level control.





**Table 02 - Technical Features of Solution Plus Modules (Forward-Curved and Backward-Curved)**

MODEL	Unit	0 50		0 75		10 0		12 5		150		2 0 0		2 50		3 0 0		3 50		4 0 0		50 0	
		DX	DL	DX	DL	DX	DL	DX	DL	DX	DL	DX	DL	DX	DL	DX	DL	DX	DL	DX	DL	DX	DL
<b>Rated Capacity</b>	TON	5		7,5		10		12,5		15		20		25		30		35		40		50	
<b>Coil Module</b>																							
Length	mm	960	1120	1120	1300	1430	1430	1500	1500	1500	1700	2000	2000	2400	2400	2770	2770	2770	2770	2770	2770	2770	2770
Depth	mm	580	740	740	850	740	850	740	740	740	740	740	800	930	930	930	930	930	930	930	1050	930	1050
Height	mm	730	730	870	870	870	870	1170	1170	1170	1170	1170	1170	1170	1170	1170	1170	1370	1370	1570	1570	1750	1750
Copper Tube Diameter	pol.	3/8"		3/8"		3/8"		3/8"		3/8"		1/2"		1/2"		1/2"		1/2"		1/2"		1/2"	
Rows		4		4		4		4		4		4		4		4		4		4		4	
FPF (Fins per feet)		132		132		132		132		132		144		144		144		144		144		144	
Number of Circuits		1		1		2		2		2		2		2		2		2		2		2	
Fin Face Area	m <sup>2</sup>	0,38		0,54		0,72		0,94		1,12		1,54		1,91		2,34		2,81		3,28		3,75	
<b>Fan Module</b>																							
Length	mm	960	1120	1120	1300	1430	1430	1500	1500	1500	1700	2000	2000	2400	2400	2770	2770	2770	2770	2770	2770	2770	2770
Depth	mm	580	740	740	850	740	850	740	740	740	740	800	930	930	930	930	930	930	930	1050	930	1050	
Height	mm	730	870	870	970	870	870	1170	1170	1170	1170	1170	1320	1170	1420	1170	1570	1370	1570	1370	1670	1370	1670
Qty of Fans		1	1	1	1	1	1	2	2	2	2	2	2	2	2	3	2	3	2	3	2	3	2
Motor minimum	CV	1	2	1,5	2	2	3	2	3	2	5	2	5	3	7,5	3	7,5	5	15	5	15	5	15
Motor maximum	CV	2	5	3	5	5	7,5	5	10	7,5	10	10	15	10	25	10	25	15	25	15	40	20	40
Air F low - Min.	m <sup>3</sup> /h	2000		3000		4400		5500		6000		9000		12000		15000		17500		20000		25000	
Air F low - Max.	m <sup>3</sup> /h	4000		6000		8000		10000		12000		17000		21000		25000		31000		35000		40000	
<b>Filters</b>																							
Dimension	mm	424 X 525		504 X 665		439 X 665		462 X 477		462 X 477		472 X 477		572 X 477		531 X 477		531 X 577		531 X 677		625 X 782	
Quantity		02		02		03		06		06		08		08		10		10		10		08	

**Table 03 - Technical Features of TRCE and TRAE Condensing Units**

	Unit	TRAE										TRCE					
		TRAE 050 1C	TRAE 075 1C	TRAE 100 1C	TRAE 100 2C	TRAE 150 1C	TRAE 150 2C	TRAE 200 1C	TRAE 200 2C	TRAE 250 1C	TRAE 250 2C	TRCE 050 1C	TRCE 075 1C	TRCE 100 1C	TRCE 100 2C	TRCE 150 1C	TRCE 150 2C
<b>Rated. Capacity</b>	TR	5	7.5	10	10	15	15	20	20	25	25	5.0	7.5	10.0	10.0	15.0	15.0
<b>Length</b>	mm	920	930	1140	1140	1590	1590	1067	1067	1067	1067	993	1217	1491	1491	1712	1712
<b>Depth</b>	mm	420	620	800	800	800	800	1096	1096	1096	1096	560	560	560	560	560	560
<b>Height</b>	mm	793	895	996	996	1250	1250	1452	1452	1452	1452	1393	1494	1545	1545	1849	1849
<b>Compressor Type</b>		Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
<b>Compressor</b>	QTY	1	1	1	2	1	2	1	2	1	2	1	1	1	2	1	2
<b>Rows</b>		2	2	2	2	2	2	2	2	2	2	4	4	4	4	1	2
<b>FPF (Fins/foot)</b>	ft	168	168	168	168	168	168	204	204	204	204	144	144	144	144	144	144
<b>No. of circuits</b>		1	1	1	2	1	2	1	2	1	2	1	1	1	2	1	2
<b>Face area</b>	m <sup>2</sup>	0.8	1.01	1.67	1.67	2.24	2.24	2.97	2.97	3.33	3.33	0.55	0.83	0.99	0.99	1.72	1.72
<b>Fan Qty.</b>		1	1	1	1	2	2	1	1	1	1	1	1	2	2	2	2
<b>Fan Diam.</b>	in.	22"	26"	30"	30"	26"	26"	35"	35"	35"	35"	---	---	---	---	---	---
<b>Engine</b>	CV	0.25	0.75	0.75	1	0.75	0.75	1	1	1	1	1.5	3	4	4	5	5
<b>Air flow</b>	m <sup>3</sup> /h	5950	9180	11900	11900	18360	18360	23800	23800	30600	30600	5500	8250	9950	9950	15750	15750
<b>Weight</b>	Kg	108	127	198	196	335	275	355	359	360	368	184	210	305	310	400	400

# TVR LX Condensing Unit

TVR LX condensing units are equipped with the highest efficiency and innovation in terms of aggregate technology, this is possible with the use of an optimized fan design with a DC fan engine, an improved high performance heat exchanger, Scroll Inverter Brushless Reluctance DC compressors and intelligent defrosting.

There are 34 different combinations of external units available which can correspond with a total of 72 different internal units to meet any requirement. The larger modules, 840MBH, allow connecting up to 64 units, providing comfort up to 175m away from the external units. No engine room is required, it fits in the elevator.

**For more information, refer to TVR LX, VRF-SLB013-EM catalogue.**



4TVH00140-210



4TVH0229-420



4TVH0648-840



**Table 04 - Technical Characteristics of TVR™LX Modular Heat Pump Condensing Units**

Model Numbers		<E>	4TVH0086DE0	4TVH0096DE0	4TVH0115DE0	4TVH0140DE0	4TVH0155DE0	4TVH0170DE0	4TVH0192DE0	4TVH0210DE0	
		<6>	4TVH0086D60	4TVH0096D60	4TVH0115D60	4TVH0140D60	4TVH0155D60	4TVH0170D60	4TVH0192D60	4TVH0210D60	
Cooling	Capacity	kW	25.2	28	33.5	40	45	50	56	61.5	
		BTU/H	86,000	95,500	114,300	136,500	153,500	170,500	191,100	210,000	
	Power Input	kW	5.79	7.02	8.71	10.81	12.83	14.47	16.67	18.77	
	Capacity Range (50% - 130%)	MBH	43-112	48-124	58-150	69-177	78-202	85-222	96-248	105-273	
Heating	EER	W/W	4.7	4.5	4.3	4.3	4.1	3.9	3.86	3.74	
	Capacity	kW	27	31.5	37.5	45	50	56	63	69	
		BTU/H	92,100	107,500	128,000	153,500	170,600	191,100	214,900	235,400	
	Power Input	kW	5.79	7.19	8.82	10.98	12.47	14.15	15.98	17.86	
	Capacity Range (50% - 130%)	MBH	46-120	54-139	64-166	77-200	85-222	96-248	107-279	118-306	
COP	W/W	5.6	5.3	4.9	4.8	4.6	4.25	4.12	4.03		
Cooling Operation Range	C	-5 °C ~ 48 °C									
Heating Operating Range	C	-20 °C ~ 24 °C									
Air flow	m³/h	12,000				14,000			16,000		
Sound pressure	dB(A)	57			58		60		61		
Fin type		Hydrophilic aluminum									
Dimensions (W/H/D)	mm	990x1635x790					1340x1635x790				
Net weight	kg	219			237		297		305		340
Refrigerant		R410A									
Refrigerant Charge	kg	9			11		13			16	
Refrigerant Type		FVC68D / 500 ml									
Refrigerant Oil	ml	500				500x2					
Refrigerant Piping	Liquid side	mm	Ø9.53			Ø12.7			Ø15.9		
	Gas side	mm	Ø22.2			Ø25.4			Ø28.6		
	Oil Balance Pipe	mm	Ø6								
	Max. Equivalent Pipe Length	m	200								
	Max. Height difference between IUs	m	30								
	Max. Height difference for OU above IU	m	90								
	Max. Height difference for OU below IU	m	110								
Max. Amount of IUs connected to OU		13	16	20	23	26	29	33	36		

<E> = 380-415 V, 3ø, 60 Hz

<6> = 220 V, 3ø, 60 Hz

- \* Nominal cooling capacities are based on the following conditions: return air temperature: 27 CDB, 19 CWB, outdoor temperature: 35 CDB, equivalent ref. piping: 8 m (horizontal)
- \* Nominal heating capacities are based on the following conditions: return air temperature: 20 CDB, outdoor temperature: 7 CDB, 6 CWB, equivalent ref. piping: 8 m (horizontal)
- \* Capacities are net, not including a deduction for cooling (an addition for heating) for indoor fan motor heat
- \* The operating sound has been measured in a semi anechoic chamber. The microphone was located 1m in front of the unit.
- \* With actual installation, the indication value normally differs widely according to the surrounding noise and reverberations.
- \* Rated efficiency classified with high DC pressure internal units of ducts.

Note: Specifications subject to change without prior notice.



# Control your split systems with Trane® Tracer® Concierge™

*The Trane® Tracer® Concierge™ system provides an easy and affordable way for building owners to gain control of Trane Solution Plus Splits systems.*



## **Intuitive interface for ease of use**

Touch-screen display - An intuitive, local user interface simplifies daily operation and saves time making changes to the system. Avoid the need to travel from location to location in your building to check thermostats and control lighting.



## **Flexible scheduling made easy**

Pre-loaded with a scheduler that can be modified to fit your building.



## **Save time with area control**

Option to program multiple rooms on the same schedule and update them all together if needed. Control complete areas or individual rooms.



## **Range of built-in functions saves time**

A range of built-in functions helps maximize building performance including overrides, temperature setpoint changes and daily monitoring.



## **PIN control to reduce overrides**

Set up a PIN code to control who has access to system overrides.



## **Advanced building control strategies made easy**

The optimal start and stop feature provides better control and efficiency for building systems. Keep the system running optimally for comfort and efficiency.



## **Easy integration of other HVAC systems and lighting controls**

Manage your HVAC and lighting from a single interface.

*Solution Plus and Tracer Concierge offer cost-effective installation with added value.*



## **Trane Air-Fi wireless system**

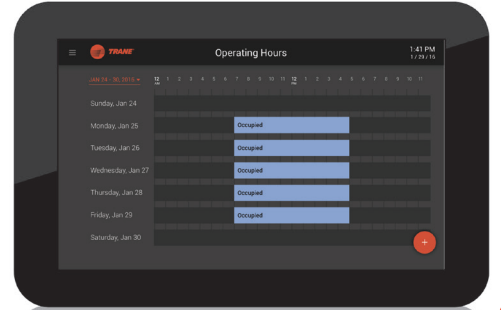
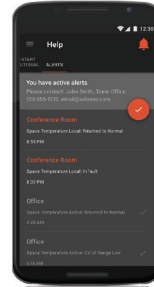
Solution Plus along with Tracer Concierge uses Trane® Air-Fi™ wireless communication between devices, eliminating the need for wired components. Move or replace wireless sensors as needed, giving you the flexibility to resolve issues related to sensing accuracy or aesthetics. Trane Air-Fi sensors offer redundant self-repairing “mesh” technology and greater signal range, therefore you avoid performance problems, resulting in greater system reliability and reduced maintenance.

**Solution Plus and Tracer Concierge, a system that offer cost-effective installation with added value.**



## Web-enabled and remote accessibility

Besides having the user interface onsite, access remotely through a Web Browser to control and monitor your split units system. - Or from any iOS or Android device through the use of our smartphone app.



### Alerts to help you reduce downtime and reduce costs

The system alerts you if something isn't working properly

### Built on open standards

BACnet MS/TP communication protocol for flexibility.

### Prepackaged control panel

A prepackaged control panel makes installation easier, which reduces risk and cost.

### App for your mobile device

Access your system through any web browser to monitor or make adjustments to your split units and lighting system. Better yet, download our Trane Tracer® Concierge™ App from any iOS or Android mobile device and experience the full power of your system with complete remote accessibility.



### Factory-mounted controls

Factory-mounted equipment controls support moving that work from the field to the factory, for more controlled and consistent conditions. This ensures a higher level of reliability — reducing your risk at installation — and contributing to on-time, on-budget project completion.





Ingersoll Rand develops advanced technologies that improve the life quality through integrated solutions for the creation and maintenance of safe, comfortable and efficient environments. Our staff and our brands, including Club Car®, Ingersoll Rand®, Thermo King® and Trane®, work to provide quality and environmental comfort in homes and buildings, to protect food and perishables during transportation and to increase efficiency and industrial productivity.

Trane solutions improve internal comfort and industrial processes with a broad portfolio of power-efficient products and systems for homes, trade and industry, as well as pieces and parts, building automation and services.

To learn more visit: [www.ingersollrand.com](http://www.ingersollrand.com) and [www.trane.com.br](http://www.trane.com.br)

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PKG-SLB020J EN October 2017  
It replaces PKG-SLB020I EN August 2017

We are committed to correct environment friendly  
printing practices that reduce waste.



Trane has a policy of continuous improvement of products and product data and reserves the right to change designs and specifications without prior notice