

**Product Specifications** 

# IntelliPak<sup>™</sup> I

Pre-Engineered Special: 60-75 ton with 40HP 208/230V/60Hz Motor



March 2020

RT-PRC071B-EN © 2020 Trane Trane provides a Pre-engineered Design Special for IntelliPak 1 60, 70, and 75 ton units that need a 208/230V/60Hz 40HP supply motor. This option is disallowed under the standard model number in Lynx. The 50HP 200/230V motor is not available, so please make sure the 40HP motor meets the application needs.

The contents of this document can be used to add relevant data into a pre-made submittal to show the design special conversion.

#### Limitations

- Only available on 60, 70, & 75 Ton IntelliPak I units
- Electric heat allowed only with dual point power
- High Fault SCCR is disallowed
- Minimum 900 RPM drive
- Actual RPM min of 850
- Maximum 1100 RPM drive
  Actual RPM max of 1150
- Not allowed with 6 pole
- Not allowed with Direct Drive Plenum Supply Fans
  - DDP fans at these tonnages require 2 motors, which max out at 25HP a piece

Note: UL is available

## Performance

**Catalog:** All of the performance data can be found in the catalog under the Supply Fan Performance Data. Use the required unit CFM and Total Static Pressure in order to find the actual BHP and RPM.

**TOPSS:** Select the unit as 460V/60Hz in order to get the cooling and heating performance of the unit, as well as other information such as EER/IEER, charge, weight, etc., with the 40HP motor design special. Converting the voltage from 200/230V to 460V will only affect the electrical data (MCA, MOP, etc). This will also let you know the required RPM.

**Electrical:** In order to get the electrical data for this design special, use the 208/230V electrical calculations called out for MCA, MOP & RDE in the most recent version on the IntelliPak I catalog (RT-PRC036\*-EN).

Use the 40HP motor electrical data in Table 1, while using the existing the compressor, condenser, exhaust/return motor, and controls transformer data called out in the catalog. For units with electric heat, dual source power is required.

## **Electrical Service Sizing Calculations:**

Load Definitions: (To determine load values, see the Electrical Service Sizing Data Tables.)

 $\mathsf{LOAD1} = \mathsf{CURRENT}$  OF THE LARGEST MOTOR (COMPRESSOR OR FAN MOTOR)

LOAD2 = SUM OF THE CURRENTS OF ALL REMAINING MOTORS LOAD3 = CURRENT OF ELECTRIC HEATERS

LOAD4 = ANY OTHER LOAD RATED AT 1 AMP OR MORE

## Cooling Only Rooftop Units and Cooling with Gas Heat Rooftop Units

 $MCA = (1.25 \times LOAD1) + LOAD2 + LOAD4$ 

 $MOP = (2.25 \times LOAD1) + LOAD2 + LOAD4$ 

Select a fuse rating equal to the MOP value. If the MOP value does not equal a standard fuse size as listed in NEC 240-6, select the next lower standard fuse rating.

**Note:** If selected MOP is less than the MCA, then reselect the lowest standard maximum fuse size which is equal to or larger than the MCA, provided the reselected fuse size does not exceed 800 amps.

 $RDE = (1.5 \times LOAD1) + LOAD2 + LOAD4$ 

Select a fuse rating equal to the RDE value. If the RDE value does not equal a standard fuse size as listed in NEC 240-6, select the next higher standard fuse rating.

**Note:** If the selected RDE is greater than the selected MOP value, then reselect the RDE value to equal the MOP value. (Keep in mind when determining LOADS that crankcase heaters are disabled in the cooling mode).

 $DSS = 1.15 \times (LOAD1 + LOAD2 + LOAD4)$ 

Select a disconnect switch size equal to or larger than the DSS value calculated.

## Dual Source Power Units (200V and 230V)

These units will have two circuit values shown on the nameplate. The first circuit value will be the refrigeration (cooling mode) values calculated per above (without electric heat added). The second set of circuit values shown on the nameplate will be for the electric heating circuit as follows.

## MCA = (1.25 x LOAD3)

## $MOP = (1.25 \times LOAD3)$

Select a fuse rating for the electric heating circuit that is equal to the MOP value obtained in the equation above. If the MOP value does not equal a standard fuse size as listed in NEC 240-6, select the next lower standard fuse rating (see note below for exception).

**Note:** If the available MOP option is less than the MCA obtained in the equation above, then reselect the lowest standard maximum fuse size which is equal to, or larger than the MCA, provided the reselected fuse size does not exceed 800 amps.

#### RDE = LOAD3

Select a fuse rating for the electric heating circuit that is equal to the RDE value. If the RDE value does not equal a standard fuse size as listed in NEC 240-6, select the next higher standard fuse rating.

#### Notes:

- 1. If the selected RDE is greater than the selected MOP value, then reselect the RDE value to equal the MOP value.
- 2. The selected MOP value is stamped in the MOP field on the nameplate.

#### Table 1. 40HP motor data

	Nomina	l Voltage
Motor Horsepower	200 FLA	230 FLA
40	108.0	98.0

## **Selection & Ordering Process**

In Lynx, select the unit as a 30HP supply in digit 14 and the RPM needed in digit 15. If the RPM needed is above the allowed RPM for the 30HP (the 1100 RPM drive) a DSPA will be created. Contact Product Support for a no charge DSPA. The Design Special for the 40HP motor is located under the Design Specials Section in Lynx. Make sure this is selected before ordering.

### Figure 1. Selection in Job Center (Lynx)

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Contract Cont	Home Home	e 🐚 Job List 🐚 Estimate List 🔳 m		
20-75 Ton Packaged Industrial Rooftop  Change Selection >    Verve:  C All  Selected Options    C Invice  Strip Cryste  C Order    C Order  Design Asthonizations ( Add )    Modules:  Design Asthonizations ( Add )    *Standard roof ourb  TG() IPCB kit    *Standard roof ourb  TG() IPCB kit    *Standard roof ourb  Tone BACret come interf work kit    *Tone BACret come interf work kit  0    •Peords wall mourt plate  0    Low aniserst damper kit  0    Demand control eventiation CO2  0    Paractory Spit for Mac. & Accy  X    WCI  WCI    Word Resign Special  0    Double wall construction  0    *Paration Spit for Mac. & Accy  X    WCI  WCI    WCI Barries design special  0    Special part  0    Double part power  0    *Out point power	¢=Back	• 10 · Job Home   Selections   Configure Select	ian	
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To obtain a valid TOPSS selection for ordering, you must lower the static pressure or CFM in order to select a 30HP motor and then select the Design Special for the 40HP motor In Job Center (Lynx) and in TOPSS. In the Job notes you must indicate the RPM that is available for 40HP motor you need. As stated before, if the RPM needed is the 1100 RPM drive (which is not available with the 30HP motor) a no charge DSPA can be created to add that option.

As shown in Figure 3, the selection in TOPSS will NOT show the correct electrical performance. It is only for ordering purposes. Please use the calculations given in the Electrical section above to determine the correct MCA and MOP. Again, this drop down is only for ordering purposes and the Supply HP in the Motor/Electrical Section will still call out the 30HP electrical data.

#### Figure 2. Selection in TOPSS

Couble wall construction	None		X		Heat module for enternal	None	٠	×	Vertical top supply/return	None	12
Special paint	None		×		heat	B	-		openings	-	11
Drain pan options	None		×	0	40 HP Supply has motor	(RO HP Supply fan e	<u> </u>	X	VPD enclosure only	None	13
		-	2		Horizontal supply and				CompleteCost coll	None	2
one bowe.	none		1		return openings	None			Demand control ventilation	None	15
4" Deep filter rack	None		$\times$			HU HP Suppry N	anı	motor	welo Trag		

#### Figure 3. Output in TOPSS

Forver Supply:	230/66/3	Max overcurrent protection:	400.00 A
apply dust static pressure	6.750 in H20	Min-deconnect switch size:	370.00 A
investigation state pressure:	6.500 in H2D	Recommended dual element:	400.00 A
ionponent 5 P drop:	1.390 in H2D	Compressor 1 count:	4.00 Each
otal static pressure:	2.950 in H20	Compressor 1 RLA:	45.00 A
chual supply motor powers	27.95 bilip	Supply fair matur FLA:	73.20 A
upply Fan Hp:	39 Hg PC	Supply fan count:	2.00 Each
chuel supply Fan apred:	IIS3 rpm	Condenser Fan /FLA:	24.60 A
upply Pan Drive Selection:	900 rpm	Echaust/heturn fan motor PLR:	25.20 A
haut/Return static pressure:	6.500 in H20	Other FLA:	4.00 A
chual exhaust/hetum motor power:	6.10 blg	Supply fan type:	ĸ
Assist/Return fan optionsi	100% -Exhaust 10 Hp w/Matterac	Supply Total Static Pressure:	2.950 in 1020
chuel exhaust/heturn fran speed.	681 rpm	IEER @ AVFC	15.4 BER.
haut/Return fan drive selection:	600 rpm	Supply fan efficiency:	44.05 %
DR @ AHRO	10.6 EER	Supply notor court:	1
vatam power:	89.39 kw	Refrig charge (HPC-4104) - ckt 1:	41.5 b
In chout ampaids:	340.30 A	Rehip charge (HPC-4394) - cH 2:	25.8 B
rt Dyna lafe			
ouble wall construction:	None	40 mP Supply fan exitor:	40 HP Supply fan motor
pecial paint:	None	Horizontal supply and return openings:	None
hah pan options:	None	Verticalitios supply heturn openings:	Note
usi point pover:	None	VPD endssure only :	None
" Deep-filter nack:	None	Complete/Coat coll:	Name
test module for estantial heat	None	Demand control ventilation will from	News

#### Pricing

Pricing is in Job Center (Lynx)

## Lead Time

Ship cycle "A" = Standard + 1 week Quick Ship can be added with the additional multiplier.

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