Product Specifications

IntelliPak™ I

Ultra Low Leak Economizer and Power Exhaust Damper (20-130 ton)

March 2020 **RT-PRC068C-EN**

In order to meet California Title 24, ASHRAE 90.1, and IEEC economizer requirements, Trane has added Ultra Low Leak Economizer Dampers to the IntelliPak line and is available in Lynx.

Figure 1. Ultra low leak economizer - non return fan

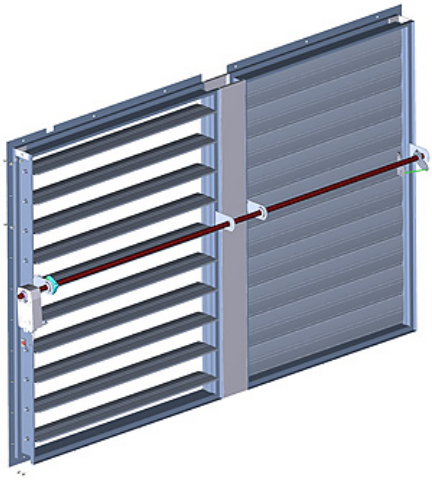


Figure 2. Ultra low leak economizer - return fan

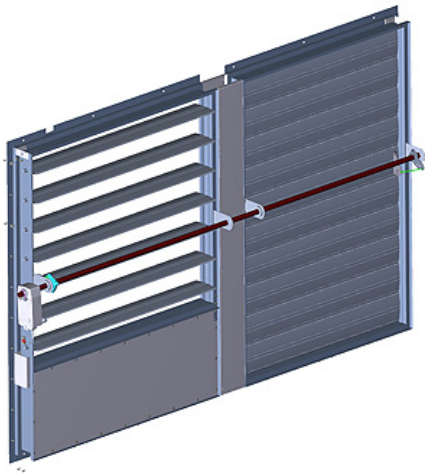


Table 1. Economizer damper code requirements

Damper Function	Requirements					
	Title 24				ASHRAE 90.1 2010	IECC
	Leakage	Warranty	Cycle Test	Controls	Leakage	Leakage
Economizer (Return & Fresh Air)	10CFM/ft^2 Both directions	5 year	60,000	FDD	4-10 CFM/ft^2 Both directions	4 CFM/ft^2 Both directions

As part of the Ultra Low Leak Economizer package, Fault Detection and Diagnostics (FDD) control was added to meet requirements of California Title 24 for Economizer operation.

FDD control monitors the commanded position of the economizer compared to the feedback position of the damper. If the damper position is outside of ±10% of the commanded position, a diagnostic is generated.

All 20-130 ton IntelliPak units ordered with Ultra Low Leak Economizers will be supplied with FDD control and will be listed on the California Energy Commission Registry for factory compliance with Title 24 Economizer and FDD requirements.

A Title 24 label is applied to units to identify construction with Ultra Low Leak Economizers, see Figure 3.

Figure 3. Title 24 label

When Ultra Low Leak economizers are ordered together, with exhaust or return options that include motorized exhaust dampers, Trane will also provide Ultra Low Leak power exhaust dampers. Although not a California Title 24 requirement, Ultra Low Leak power exhaust dampers meet or exceed requirements of ASHRAE 90.1, and IECC. There will be no change to today's barometric relief dampers since the current design meets or exceeds applicable ASHRAE 90.1 and IECC standards, for non-motorized dampers.

Figure 4. Ultra low leak power exhaust dampers

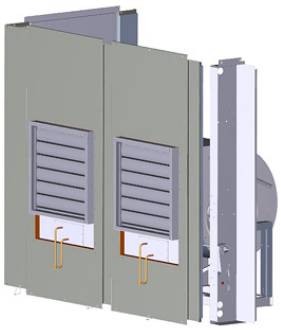


Table 2. Exhaust damper code requirements

Damper Function	Requirements					
	Title 24				ASHRAE 90.1 2010	IECC
	Leakage	Warranty	Cycle Test	Controls	Leakage	Leakage
Exhaust/relief motorized	Does not apply				4-10 CFM/ft^2 Both directions	4 CFM/ft^2 Both directions
Exhaust/relief non-motorized	Does not apply				20 CFM/ft^2 <24", 40 CFM/ft^2 One direction only	

Mechanical Specifications

The Ultra Low Leak Economizer option shall be provided with parallel-operating, horizontal airfoil blades and spring-return actuators. Spring-return will be to the fresh air closed, return air open position. The economizer, including linkages and actuators, shall have a 5 year limited warranty and functional life of 60,000 opening and closed cycles. Dampers shall be AMCA 511 Class 1A certified with a maximum leakage rate of 3 CFM/sq-ft at 1.0 in WC pressure differential.

Economizer frame and 6" wide blades shall be galvanized steel. Blade edge seals shall be extruded Thermoplastic Rubber (TPR) (-72°F to + 275°F) and jamb seals shall be compressible, flexible metal.

The economizer fresh air damper shall include an adjustable linkage to allow for field damper balance of pressure drop between 100% fresh and 100% return airflow paths. The adjustable linkage is used to limit the fresh air damper maximum wide open stroke.

Figure 5. Fresh air damper adjustable linkage with non-VFD Exhaust fans

When the Ultra Low Leak Economizer option is ordered with exhaust/return air options that include motorized relief dampers, Ultra Low Leak Power Exhaust Dampers will be provided. Ultra Low Leak Power Exhaust Dampers shall be provided with horizontal airfoil blades and spring-return actuators (to damper closed position). Dampers shall be AMCA 511 Class 1A certified with a maximum leakage rate of 3 CFM/sq-ft at 1.0 in WC pressure differential.

Power exhaust frame and 4" wide blades shall be extruded aluminum. Blade edge seals shall be extruded Thermoplastic Rubber (TPR) (-72°F to +275°F) and jamb seals shall be compressible, flexible metal.

When the Ultra Low Leak Economizer option is ordered with exhaust/return air options that include barometric relief dampers, there will be no change to the barometric exhaust dampers supplied today. Testing of the existing barometric relief dampers in the manufacturer's AMCA 500-D accredited laboratory has shown that this design exceeds ASHRAE 90.1 and IEEC non-motorized requirements. Barometric dampers are not AMCA certified.

Directions for Selecting in Lynx & Pricing

For the 20-130 ton units, this option is available as a standard option in Lynx, under digit 24. The option will be called out in the model as a "U". As with all standard options, pricing is available in Lynx.

Disallowables

All disallowables will be tied to the Exhaust option in the standard model.

Dimensional

The Ultra Low Leak Economizer does not change unit dimensions.

Ultra Low Leak Power Exhaust Dampers slightly increase the unit overall width because the Power Exhaust frame extends beyond the unit lifting lug, as shown in Figure 6. This increases the overall "U" dimension by 0.65".

Figure 6. Ultra low leak power exhaust

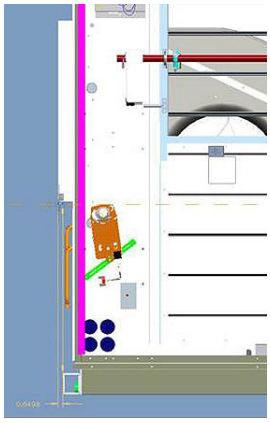
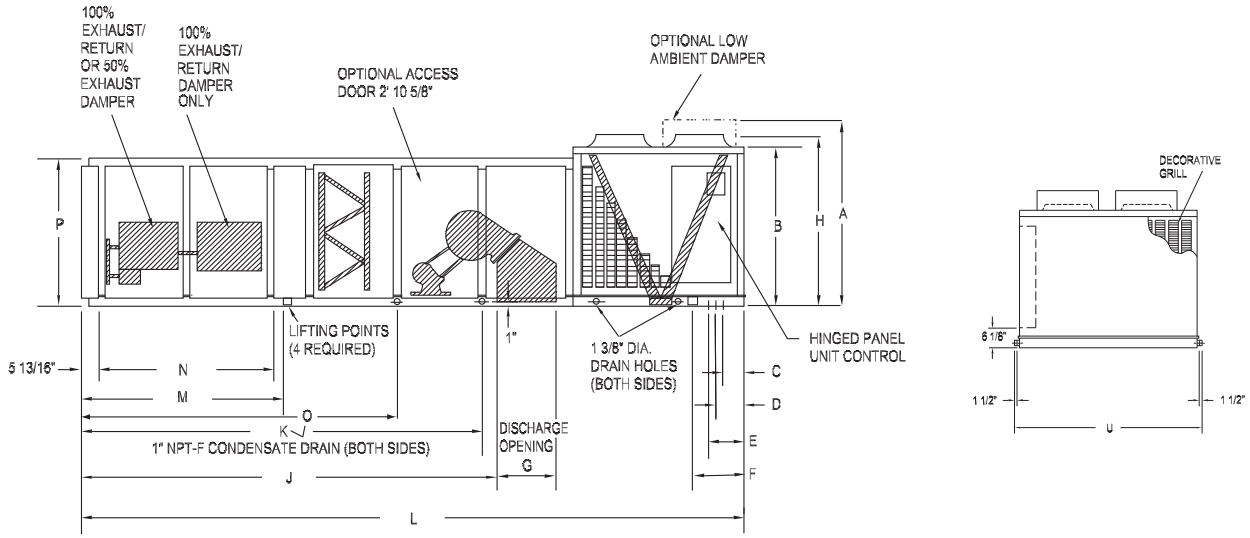


Figure 7. Dimensional data



Nom. Tons	K	M	N		O	P	Q		R	S	U
			w/exhaust fan	w/return fan			w/exhaust fan	w/return fan			
20 & 25	12-6	7-0	6-6 15/16	3	10-7	3-9 5/16	3-4 3/8	2 - 9 15/16	5-7	0-11 3/4	7-9 1/2
30	12-6	7-0	6-6 15/16	3	10-7	4-9 5/16	3-4 3/8	2 - 9 15/16	5-7	0-11 3/4	7-9 1/2
40	15-11 1/8	8-0	7-8 3/16	3 - 4	12-1	5-9 5/16	3-4 3/8	3 - 1 1/2"	5-7	0-11 3/4	7-9 1/2
50 & 55	15-11 1/8	8-0	7-8 3/16	3 - 4	12-1	6-9 3/8	3-4 3/8	3 - 1 1/2"	5-7	0-11 3/4	7-9 1/2
60	15-11 1/8	8-0	7-8 3/16	4 - 5	12-1	5-9 5/16	4-5 3/8	4 - 2 1/2"	6-10 7/8	1-4 9/16	9-11
70 & 75	15-11 1/8	8-0	7-8 3/16	4 - 5	12-1	5-9 5/16	4-5 3/8	4 - 2 1/2"	6-10 7/8	1-4 9/16	9-11

Note: *Overall unit width "U" increases by 0.65" (i.e 9'-11" becomes 9'-11.65")*

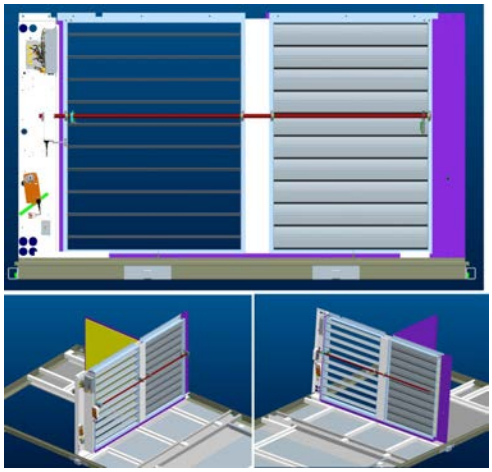
Pressure Drop

The Ultra Low Leak Economizer and Ultra Low Leak Power Exhaust options do not significantly change pressure drop from the current designs. Use TOPSS for the Supply and Exhaust/Return HP/RPM. All data will match the new options pressure drops.

Weights

The Ultra Low Leak Economizer and Ultra Low Leak Power Exhaust options do not significantly change weights from the current designs.

Figure 8. Ultra low leak economizer



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