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Features and options:

Q If I am ordering finned tube element only, what brackets do I use?

- A** If you are ordering element for replacement in existing enclosures, you may be able to reuse the existing brackets.
- If you are ordering element to be used without enclosure or with a field provided solution the second row brackets should be used for wall mounted applications. These brackets are designed for dual use – they can be mounted to the snap expansion brackets as a second or third tier support, or they can be mounted directly to the wall.
 - This bracket is also used for any element and enclosure combination in which the enclosure does not need bracket support, such as Security products or VL/HL models.
 - For mounting in a bare finned tube in a pedestal application, any of the standard brackets can be used, based on site space constraints.
 - Attaching any enclosure to any of the Zehnder Rittling brackets that are not provided by Zehnder Rittling is not recommended as we cannot ensure fit and durability of the connection.

Q What is a steam bracket and how is it different than a standard bracket?

- A** Steam brackets are two separate brackets used in conjunction to allow for the element to be pitched in these applications. They utilize a standard snap expansion bracket (SNEXP) without a slide cradle. This bracket is used to support the bottom of the enclosure, as the standard snap expansion bracket normally does, and also support the second bracket (SRB). The second row brackets are used to support the element only. The SRB will be field installed and utilize the slots in the SNEXP to adjust the pitch of the element. In applications where a SNEXP is not needed, such as security, VL/HL enclosures, only a second row is needed for steam applications and is mounted directly to the wall. Standard pedestal brackets are not designed to be used in steam applications.

Q What if I need a finned tube element size customized?

- A** Finned tube element sizes are designed to fit within our standard enclosures. We do not have any alternate sizes (fin or tube dimensions) available.
- However, there are some changes that can be made to suit specific applications. Overall length, the length of the stubs, adding or removing swage (copper) or thread (steel) connections are some of the features that can be modified. Any of these changes will need to be quoted by Zehnder Rittling, as additional costs are required.

Q What if the finned tube element needs to be coated?

- A** Under specific circumstances there may be a situation where the element itself may need to be coated. Depending on the requirements of the situation there are a few options available.
- If the element is going to be exposed or visible the finned tube element can be powder coated. Powder coating the element is more difficult than painting other products, due to the dense stacking of the fins and requires multiple passes in the paint booth. Because of this powder coating the element should not be considered protective as 100% coverage is not guaranteed. However the appearance will be consistent for finished applications.
 - If the finned tube element needs to have protective coating then heresite or e-coat finishes are available. These finishes use a dip process to apply the coating, resulting more complete coverage and are designed to add protective properties to the product. These coatings are typically used for corrosive environments and are commonly applied to unit heaters.
 - Both steel and copper/aluminum element can be coated.
 - E-coat can also be applied to enclosures and allow a finished coat to be applied. Heresite can be applied but does not allow for a finished coat.
 - Please contact customer service or applications engineering for more information on these coatings, including pricing.

Q Why are some combinations of height and depth not available on Rittling Online?

- A** The available combinations are based on our standard sizes, which are common throughout the industry.
- For most wall mounted enclosures there are two depths, 3 15/16" and 5 3/8", and each typically has three available heights, 8", 11", 14" and 14", 20, 24". Some enclosures, like security or double slope, have slightly different standard heights to accommodate their specific designs.
 - Any enclosure selected over 14" in height requires 16 gauge or greater, for strength and rigidity.
 - Pedestal enclosures also have two depths, 5 1/2" and 10". The 5 1/2" has three available heights, 6" for one row applications, 8" for one row with a return line and 12" for two rows tall. The 10" has one available height, 6", for two row wide applications.

Q Can I get an enclosure height not listed in the catalog?

- A** Yes, we can provide custom enclosure of many different styles and sizes. See below for specific details.

Q Custom height enclosures, between 8" - 24"

- A** Yes, you can get custom height enclosures, as this is something that Zehnder Rittling can easily accommodate. Simply select the next larger standard size for pricing and note the request in the comments of the order. For example, if you require a 22" high enclosure, select the 24" height. This is limited to 1" increments.
- ♦ Be specific as to what line items the customization should apply to (if it is not all lines). If only some of the enclosures are to have the customization applied please make separate selections. For example, if you have 11 enclosures that are 8ft in length but 3 of the them are to be changed you should enter a selection of 3 and a selection of 8.
 - ♦ There is no added price for this change. Custom lead times will apply.

Q What if it exceeds what is available in Rittling Online?

- A** If an enclosure over the 24" height is required, it will need to be quoted by Zehnder Rittling. We can provide heights up to 36" in most cases. In some cases we have gone as high as 40". It is required that any enclosure over 24" be made from 14 gauge steel for strength and rigidity. Additional support brackets are also recommended in these cases.
- ♦ Custom lead times will apply. Please contact the factory for pricing.

Q What is the height I want is not available with the depth?

- A** If you require a 3 15/16" depth and a height over 14", it is priced as the equivalent 5 3/8" enclosure. For example, if you wanted the 22" high enclosure to be 3 15/16" deep, you would select 5 3/8" depth and 24" height.
- ♦ If you require a 5 3/8" depth with a height shorter than 14" height, you use the 14" pricing. Note that there are restrictions on available combinations when reducing height (return lines, rows and dampers). In most cases 8" is the minimum available height (slope top is 9" height).
 - ♦ Custom lead times will apply. Please contact the factory for pricing.

Q What if a custom depth is required?

- A** Custom depth enclosures are available, but must be reviewed and quoted by Zehnder Rittling. This is due to the potential for the enclosure depth to affect louver location, element placement, support, installation and overall performance.

Q What if I need enclosure on curved wall?

- A** If the wall is curved, you may have a few options available. It will depend on a number of factors to determine the available options. All options are available with convex or concave curves. All curved enclosure styles are limited to FT, IBG or PIBG as their basis. Only the segmented option will match up with standard FT, IBG or PIBG enclosures. If the curved enclosure will mate up with straight enclosure, the straight enclosure must be ordered as curved style.
- ♦ For all curved options please see the curved enclosure order form on www.Zehnder-Rittling.com under enclosure downloads. This sheet must be completed and sent in with the order.
 - ♦ The first and simplest option is to provide a segmented installation. Utilizing standard short length enclosures you can lay them into the curved wall and cover the gaps between the enclosures with trims. Zehnder Rittling can review the curved radius to help you determine the optimal length and number of pieces to fill the space. This option has the lowest product cost, but has the most pieces and will have the most joints/trims. This option works with multiple radii in a single run and is the most flexible. This option utilizes the standard snap expansion brackets and snap mounting channel.
 - ♦ The second option is to go to a custom design that utilizes a custom joiner to allow for the covers to pivot, rather than use trims. The enclosures are straight, so the severity of the radius will determine the availability of this option. This style is typically used with window lengths. This option works with multiple radii in a single run. This option is flexible in the radius amount, but not in the lengths. This option can use standard or custom mounting, based on the application.
 - ♦ The last option is a true curved enclosure, in which the enclosure is formed to match the radius of the wall. This is the most expensive of the three options and once manufactured there is no flexibility in the length or the radius amount. This option requires a consistent radius for manufacturing. If there are multiple radii on a wall, they must be ordered as separate curved segments.
 - ♦ With true curved enclosure the IBG grille is modified and is no longer a lay in grille. The vanes are curved to match the enclosure. They do not have the typical 15° deflection and do not run continuous (there is a 2.5" solid end on each side of the enclosure).
 - ♦ This style does not utilize snap mounting channel or snap mounting brackets. Offset channel is used to mount the enclosure with factory provided Z brackets. Element is hung using second row brackets (for wall mounted enclosures). Pedestal mounted curved enclosures utilize any of the standard brackets.

- ♦ It is recommended that curved enclosures utilize the IBG grille and not the FT style louvers; however both are available. The grille provides a cleaner look when compared to the louvers and has less restriction on output.
- ♦ Wall mounted enclosures can be either of the standard depths (3 15/16", 5 3/8") and any height from 8" to 24". Please contact the factory for custom depth options.
- ♦ Curved pedestal enclosure is only available as 5 1/2" (1 column) wide, at any standard height (6, 8, 12"). Two (2) row tall curved enclosures are available (5 1/2" x 12"), two column (10" x 6") are not available; Please consult the factory for options.
- ♦ The element is only provided in straight segments and must be segmented around the curved wall.

Q What about mounting in a trench application?

- A** Trench mounting applications are becoming more common where the element and enclosure are removed from the wall and the element is placed in the floor, with an outlet grille. There are two options when mounting element in a trench, which will depend on the specific application.
- ♦ The first option is the basic rough in components along with an airflow baffle mounted in an existing trench. This application relies on the trench itself to act as the enclosure and provide the airflow volume and direction. Typical trench mounting uses a small floor mounted bracket with an 18ga sheet metal baffle. With this option, Zehnder Rittling would provide the standard finned tube element, custom mounting brackets and a custom air baffle.
 - ♦ The trench should be designed to allow adequate airflow to the element. It is recommended to have 4" opening throughout the trench, with a minimum of 2". This includes the entire inlet path (width and height). For example a 4 1/4" finned element would require an approximate 9" x 9" trench, plus clearance for the grille. This allows for 4" inlet from the top and 4" below the element.
 - ♦ The second option is to provide a complete trench box. This box would form the walls of the trench, for use in underfloor applications or where there are no existing trench walls. This option would include the box (liner), brackets, baffles and element.
 - ♦ With all trench applications, the grilles are not provided by Zehnder Rittling. Boxes can be customized to accept many different grilles; however they are not designed to support traffic. All grilles should be 60% free area to allow for convective airflow. Trench applications can be multiple columns or row, depending on the size of the trench. See www.Zehnder-Rittling.com for drawings, available under the Enclosure downloads section.
 - ♦ For either option, please contact the factory with the requested dimensions for pricing and availability.

Q What if my floor is not level?

- A** There are a number of scenarios that can require that the enclosure conform to uneven installations, affecting both pedestal and wall mounted.
- ♦ For wall mounted enclosures protecting the amount of available space under the enclosure is important. It is recommended that there is 4" minimum clearance beneath the enclosure. This is to ensure proper airflow and output. In most cases this space can be reduced to 2" with minimal or no impact to the performance. This allows for most applications to deal with uneven floors. If there is a pitch of more than 2" across the space then a decision must be made. At the high end the cover should be raised so that at the low end the inlet is not reduced to less than 2". The alternative would be a custom step trim that would cover the height change. Think of it as a corner turned on its side. These are only used in rare, extreme cases as it will be highly visible.
 - ♦ Also be aware of humps or bumps in the floor that may rise in spots. This may lead to measurement issues and lead to an uneven install.
 - ♦ For pedestal mounted enclosure the available remedies are more limited. The steel and aluminum floor flange brackets have no adjustability. These brackets must be shimmed to ensure a level install and should utilize a level (preferably a laser level).
 - ♦ The adjustable U bracket can also be used for these applications. This bracket has 3/4" of total adjustability. As a custom option we can provide a larger base to provide more adjustability, but this will result in an overall increased height.
 - ♦ Another similar application can be a ramp or inclined floor. In this type of application the enclosure, whether wall or pedestal mounted, will follow the incline of the floor. The only concern in these applications is if there is a transition to a non-inclined application. In these cases custom angled trims can be provided, similar to a corner piece.

Q What color is your prime coat?

- A** Our prime coat is unique to Zehnder Rittling, as we offer a powder coat finish as our prime coating. We use overspray powder that is part of the powder coating process and reuse that as a mixture for our prime coat. The color is different at any given time and cannot be matched. However it does provide a more durable finish than a typical prime, with no additional steps for field painting.

Q What do I need to do for field painting?

- A** With the prime coating or any of our standard finishes, the process is the same as any other field painting procedure. The surface should be scuffed/roughed up to ensure adhesion of the liquid paint. An oil based enamel paint (alkyd, acrylic, urethane, epoxy) should be used. Latex or lacquer paints should not be used. Spray the paint to achieve an even coating and let dry completely before using the product.
- ♦ Any powder coating finish can be field painted if desired by the customer. The process is the same for the standard colors as with the prime coating.

Q What about custom material or color?

A Enclosures are typically made from cold rolled steel and finished in one of our six standard powder coat finishes or the standard Zehnder Rittling prime coat. However we can make them from alternate materials or custom color.

■ Stainless steel

- A** Unpainted 304-4B finish is typical though alternate finishes are available (polish/mirror finish not recommended).
- ♦ For the price add see Custom pricing page in the price book. Comments should be added to the order denoting what items are to be stainless.
 - ♦ Custom lead times apply.
 - ♦ All brackets, trims and mounting angles (wall and floor) must be stainless to match the enclosure. The only exception is second row brackets that are mounted directly to the wall and do not utilize snap expansion brackets
 - ♦ In the case of wall mounted enclosures the snap mounting channel is changed to offset channel when using stainless steel.
 - ♦ Use stainless steel in applications where aluminum enclosures are requested.

■ Galvanized steel

- A** Unpainted for field finish. 18, 16, 14 gauge available
- ♦ Price and lead time add, must be quoted by Zehnder Rittling.
 - ♦ Custom lead times apply.

■ Custom color

- A** Zehnder Rittling is able to match existing or special colors. Color chip must be provided for match (manufactures part number alone is not recommended due to potential variations in charts/chips). Chips are typically not returned and may be cut for match by the vendor. Finished goods should not be sent for paint match.
- ♦ Orders can be placed for standard product with custom color selections by choosing the required product and adding a comment to the order referencing the color. Customer service will make the necessary adjustments to the order.
 - ♦ Chips should be sent to Zehnder Rittling customer service immediately to reduce lead time/delays.
 - ♦ Two processes are available for custom color orders, depending on required approval, that will affect lead time. If the chip is provided for match only, the order can be entered and released once the chip is received by Zehnder Rittling.
 - ♦ If color match approval is required, once the chip is provided it will be sent to our vendor for match. Chips will then be sent out to you for approval. Once the color is approved, the order can be released for production.
 - ♦ Metallic matches are not available. However, we are able to provide two metallic colors, Silversmith and Bright Argent. These are the only two approved metallic colors.
 - ♦ Please contact customer service for samples.

Q Do you have pipe enclosures available?

- A** We have a number of available standard enclosures without inlet/outlet options that are designed for use as pipe enclosure. There are two and three sided versions available. There is an N in the product name designating this style (FSN, FTN, FTHN) for example. These are listed in Rittling Online as standard products.
- ♦ We can also make two and three sided custom pipe enclosures of all sizes. They can be used in vertical and horizontal arrangements. There are drawings available showing mounting details as well as how to call out size, see www.Zehnder-Rittling.com under enclosure downloads. Custom pipe enclosure will need to be quoted by Zehnder Rittling. Please contact customer service for details as well as pricing Custom lead times will apply.

Q What if I need custom angle corners or pieces to go around columns?

- A** We can do a number of custom pieces to help transition around the perimeter or almost any room. Our standard corners are 90°, but we can make just about any angle between 75° and 180°. We can provide Z or M style corners to wrap around columns, either in the center of a run or in corners. These pieces overlap enclosures on either end or can finish at the wall. There are drawings available showing mounting details as well as how to call out wall leg dimensions, see www.Zehnder-Rittling.com under enclosure downloads.
- ♦ See Custom pricing page in the price book.

Q How do I rate my element and enclosure?

A It is recommended that you use www.E-Zselect.com for all performance rating and product capacity, including all finned tube and element. Base performance data can be found in the catalogs.

Q How do the element catalog ratings apply to the enclosure catalogs?

A The ratings listed in the element catalog are for bare finned tube element, without an enclosure. The specific enclosure catalogs rate the elements inside the enclosures. You do not need to cross the bare ratings with the enclosure catalog performances.

Q How do I determine performance when putting an element in a floor trench?

- A** This is a complex situation to answer as there are many unknown factors. What is the trench construction (size, material, etc.)? What is the open area on the grille being used? Is there adequate space for the necessary airflow? We have to make some basic assumptions to provide a basis for estimating output.
- The trench should be approximately 4" wider and taller than the element, with 3 solid sides to direct airflow. The baffle should be at least as tall as the element to direct the airflow through the entire element. The grille being used should have 60% free area to allow unrestricted airflow.
 - If those basic conditions are met then you can expect a 10% derate from the published bare finned tube element ratings. For any variation or further clarification, please contact our Applications engineering group.

Q How do I de-rate the performance for different conditions?

A Catalogs have data for alternative water conditions, but for all other factors the Zehnder Rittling selection software should be used (www.e-zselect.com).

Q What flow rates are the ratings based on?

A With finned tube element and enclosure the ratings are based on the constant of 3 feet per second, not a specific GPM. The reason for this is feet per second is constant across any tube size, where GPM is not.

Q The enclosure drawings show 4" recommended between the floor and the bottom of the enclosure. How close to the floor can it go?

A The 4" space is recommended to allow for the necessary airflow to pass through the element. The space can be reduced to 2" with minimal if any effect. However below the 2" minimum the output performance of the product will begin to drop off significantly. Any space less than 1" is never recommended.

Q What if I want to mount the enclosure farther from the floor than the 4" recommendation?

- A** The output of the product will be reduced as the element is moved farther from the floor. Over 36" in height off the floor the de-rate is same. However your entering air temperatures will be different than at floor level, reducing the effectiveness of the product.
- See www.e-zselect.com for specific effects on performance.

Q Why aren't the enclosures available in inch increments?

A Inch increments present too many variations for manufacturing and for the installing contractor to deal with. To simplify the enclosure, we offer telescoping overlapping trims to finish the end of all enclosure runs. Whether going wall to wall or just under the windows, there are trims and end caps available to finish the space and provide adjustability.

Q Can I use two overlapping trims together?

A Two overlapping trim pieces cannot be used in conjunction with each other. The end of any enclosure run should only be one overlapping accessory piece – trim, corner, end cap or access panel. Should multiple functions be needed (end cap and access door for example) these pieces are available.

- If a custom application is required, please contact Zehnder Rittling.