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TO: All customers
FROM: Emerson Climate Technologies Europe
SUBJECT: **Copeland Stream Compressor For Low-GWP A2L HFO-Blends Refrigerants In Refrigeration Applications - Product Launch**

Emerson Commercial and Residential Solutions is pleased to announce the launch of a new generation of 4M* (4 cylinders) and 6M* (6 cylinders) semi-hermetic reciprocating compressor family called Stream for commercial refrigeration applications using **medium pressure HFO-blends R454C (GWP 148), R455A (GWP 148) and R454A (GWP 239) with mildly-flammability characteristics (A2L)**. The generation 2 Stream compressors are the perfect solution for future-proof applications using low GWP refrigerants. This is the 1st phase of a broad qualification program, which will be quickly followed by the release of other semi-hermetic reciprocating models and other A2L refrigerants (pure HFOs).

The new range of second generation Stream compressor models has been qualified for both the new A2L refrigerants (R454C, R455A, R454A) and the previous A1 refrigerants (R448A/R449A, R407A/F, R404A, R407C, R134a, R513A and R450A). This provides the user with a compressor solution that can be used universally for multiple refrigerant variants and tasks, such as for the design of new systems, replacement in existing systems or for subsequent refrigerant conversions.

Emerson also announces the product changeover of the entire 4M* and 6M* series from design revision number "1" to "2". The new index or design revision number "2" includes the internal modifications necessary for safe operation with A2L refrigerants and refrigerant blends with higher HFO contents and was introduced in the current production process from the beginning of October 2021 (serial number 21J7611M onwards).

Example:

6M 1 40X AWM/D	old, production stop end of September 2021
6M 2 40X AWM/D	new, productions start beginning of October 2021

Apart from some internal component and material changes, the model variants "1" and "2" do not differ. All performance data, external dimensions, connections and compressor accessories remain the same.

The A2L-qualified Stream compressor range is a valuable opportunity to minimize the cost impact related to compliance to the F-Gas regulation and not be affected by the F-Gas phase down. **The New Generation 2 Stream compressors** will continue keeping all of the Generation 1 Stream compressor's benefits as well: excellent efficiency and capacity values, proven robustness and reliability, multiple refrigerant qualification, small and large motor options for optimal performance in low-temp, medium-temp and high-temp applications, large operation envelopes, advanced compressor protection and monitoring and being the quietest in the market.

Refrigerant qualification differences between design revision number "1" and "2"

Only compressors marked with the generation or design revision number "2" are approved for operation with A2L refrigerants. All compressor models with the previous design revision number "1" are not suitable and not approved for operation with A2L refrigerants. Consequently, compressors with the design revision number "1" may only be operated with A1 refrigerants. The models with the design revision number "2" have been qualified for both refrigerant groups, these can be used alternatively for A2L and A1 refrigerants.

The key benefits of Gen-2 Copeland™ Stream compressors for A2L refrigerants are:

- Reinforced design to ensure full Emerson product reliability when operating with multi-refrigerant capabilities (both A2L refrigerants such as R454C, R455A, R454A and A1 refrigerants such as R448A/R449A, R407A/C/F, R404A, R513A, R450A, R134a)
- Wide operating envelope: two model size options to fit for all refrigeration applications, medium / low temperature



Released range of 4MF2* and 6ML2* Copeland™ Stream is shown on the following table:

Compressor	Nominal capacity (hp)	Displacement (m³/h)	Net weight (kg)	Foot-print (mm)	Cooling capacity (kW)				
					R448A R449A	R513A	R454C*	R455A*	R454A*
4MF-13X	13	62	177	381 x 305	28.0	20.8	27.1	27.7	30.7
4MA-22X	22		178		31.8	20.9	28.1	29.3	32.2
4ML-15X	15	71	180		36.1	24.1	31.3	34.0	37.2
4MH-25X	25		187		36.2	23.8	31.4	34.3	37.6
4MM-20X	17	78	182		39.4	26.5	34.5	37.5	41.2
4MI-30X	27		188		41.0	26.7	34.9	38.4	41.5
4MT-22X	22	88	183		44.5	29.6	37.3	40.6	45.1
4MJ-33X	30		190		45.1	29.0	39.6	43.0	46.8
4MU-25X	25	99	186		49.4	32.9	43.4	47.6	51.4
4MK-35X	32		202		50.7	32.4	44.1	48.2	52.3
6MM-30X	27	120	215		59.0	39.9	53.0	58.1	62.9
6MI-40X	35		219		61.9	38.5	53.0	56.5	63.1
6MT-35X	32	135	221		65.3	44.7	59.1	64.1	70.0
6MJ-45X	40		223		69.1	44.9	58.7	64.3	70.4
6MU-40X	40	153	225		76.3	49.1	64.4	71.6	77.4
6MK-50X	50		230		76.4	48.3	65.1	72.3	77.8

* = A2L refrigerants

Conditions: Evaporating -10 °C, condensing 45 °C, suction gas temperature 20 °C, subcooling 0 K

Table 1: 4M* & 6M* compressor range and performance for use with A1 & A2L* refrigerants

For performance values and technical data, please refer to the Copeland™ brand products Select software available at <http://www.climate.emerson.com/en-gb>. The technical drawings in 2D are also available together with Application Guidelines and related certification.

For all compressor accessories (for example TraxOil, Crankcase heater, mounting parts, etc...) and corresponding ident numbers, please refer to **Emerson Spare Parts and Accessories Software** on <http://parts.emersonclimate.eu/>.

For any additional information about the compressors and/or accessories, please contact your local Sales or Application Engineering representative.