Range of Technical Details

The Loher "CHEMSTAR" Motor is available for the following technical data ranges:

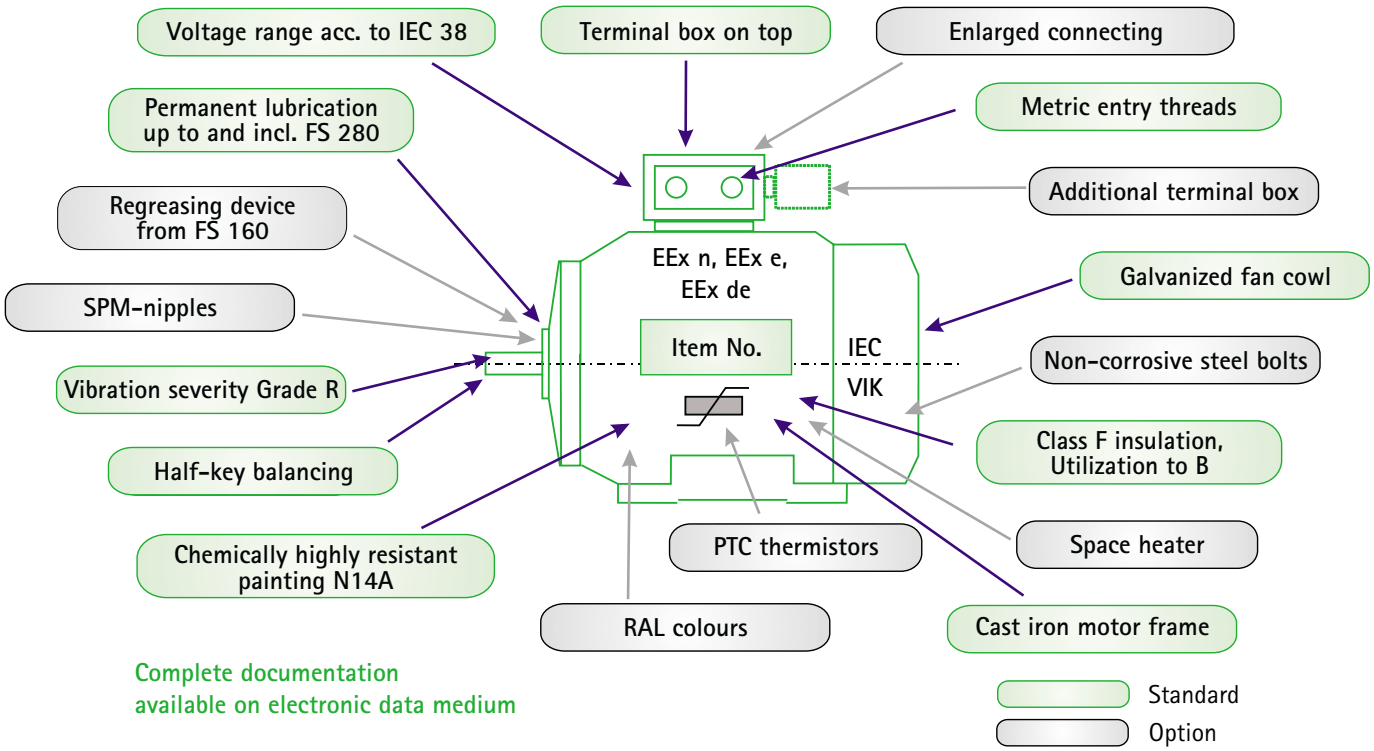
Frame sizes:	71 ... 315 (option up to FS 400)
Rated outputs:	up to 230 kW
Speeds:	3000 / 1500 / 1000 min^{-1} at 50 Hz; also for 60 Hz and pole-changing; infinitely variable at the inverter
Voltage:	Usual low voltages and voltage ranges in conformity with DIN IEC 38
Enclosure:	IP 55
Types of protection:	EEx nA II EEx e II EEx de IIC

Technical Characteristics of the Loher "CHEMSTAR" Motor

Technical Design

The Loher "CHEMSTAR" Motor joins many design features of which a detailed description is not possible in this brochure.

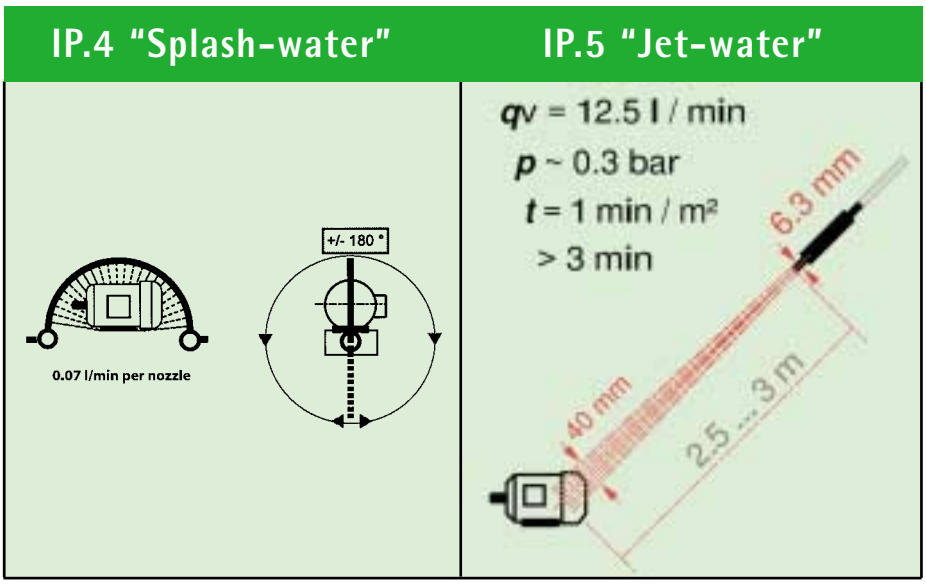
The scheme gives a survey, being completed and explained in the following by some important details.



Complete documentation available on electronic data medium

Enclosure IP55

In comparison with the frequent catalogue design – which means IP54 – the IP degree of protection against water is increased. Concerned are the degrees of protection against splash or jet-water, described in the opposite basic diagrams.



Protection degree IP.5 is an important requirement for the often requested suitability of chemical plants for "Outdoor Installation", however a number of supporting constructional and production engineering measures as well as an endurance test are necessary.

Cast Iron Motor Frames

For Frame Sizes 90 ... 315 the Loher "CHEMSTAR" Motor has stator frames, end shields and terminal boxes of cast iron GG-20.

The technical advantages (corrosion, strength, vibration damping) of grey cast iron compared with the usual aluminium die cast alloys for standard motors up to approx. shaft height 160 (200) are known. However, grey cast iron also offers ecological advantages, the socio-political importance of which is increasing:

Relative/absolute comparison of energy expenditure and waste products when manufacturing aluminium and cast iron respectively (Basis: 1 t)

	Primary Aluminium		Secondary Aluminium		Cast Iron	
	60% Portion		40% Portion			
	Factor	Absolute	Factor	Absolute	**Factor**	Absolute
Energy application	70.7	45517 kWh	7.9	5064 kWh	1	644 kWh
Waste water	51.1	15.33 m^3	1.3	0.39 m^3	1	0.3 m^3
Waste products	143	3638 kg	2.9	72.5 kg	1	25.43 kg
Dust	4.7	22.24 kg	0.08	0.4 kg	1	4.76 kg

Max. 40% portion of secondary aluminium! Cast iron in Germany of 100% scrap material!

Metric Entry Threads on Terminal Box

Assignment of the metric entry threads to the shaft heights of standard motors acc. to DIN 42925:

	Cable Gland Assignment			
Frame Sizes	**Entry**	**Cable Glands[2]**	**max. Cross Section for Cable Connection in mm^2**	
	Threads[1]	**Type HSK-M-Ex**	**Motor Type**	**Motor Type**
71	1 x M 20 x 1.5	6 – 12 mm	2.5 / 6[3]	2.5 / 6[3]
80	1 x M 20 x 1.5	6 – 12 mm	2.5 / 6[3]	2.5 / 6[3]
90	1 x M 25 x 1.5	10 – 16 mm	2.5 / 6[3]	2.5 / 6[3]
100	1 x M 32 x 1.5	13 – 20 mm	2.5 / 6[3]	2.5 / 6[3]
112	2 x M 32 x 1.5	13 – 20 mm	2.5 / 6[3]	2.5 / 6[3]
132	2 x M 32 x 1.5	13 – 20 mm	10 / 25[3]	10 / 25[3]
160	2 x M 40 x 1.5	22 – 32 mm	10 / 25[3]	10 / 25[3]
180	2 x M 40 x 1.5	22 – 32 mm	16 / 50[3]	2.5-35
200	2 x M 50 x 1.5	32 – 38 mm	16 / 50[3]	6-70
225	2 x M 50 x 1.5	32 – 38 mm	16 / 50[3]	6-70
250	2 x M 63 x 1.5	37 – 44 mm	6-70	6-70
280	2 x M 63 x 1.5	37 – 44 mm	6-70	10-95
315 S/M	2 x M 63 x 1.5	37 – 44 mm	16-150	16-150
315 L	2 x M 63 x 1.5	37 – 44 mm	120-300	120-300

	Entry of Power Supply Cable	
Type	**Frame Size**	**Version**
AM.. / EM../DN..	090 – 180 200 – 280 315	Terminal box bottom part with entry thread Terminal box bottom part with removable entry plate Lengthwise divided terminal box with removable entry plate

1 Entry threads are sealed with dummy plugs
2 Cable glands are only supplied upon special order
3 max. cross section for cable connection with cable lug