

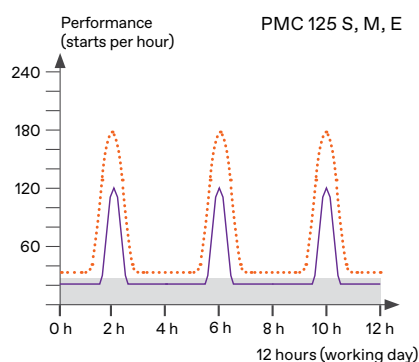
ELEVATOR PERFORMANCE AND DUTY APPLICATION GUIDELINE

synergy 200

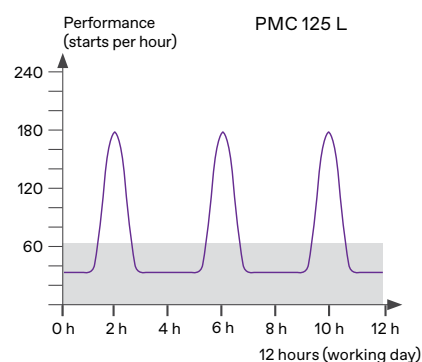
synergy 200 is low- to mid-duty elevator suitable for passenger transportation in low-rise buildings within residential and functional commercial markets. According to the load, and travel height requirements, synergy 200 features different sizes of the PMC 125 machine family.

Performance based on ISO 25745-2

Machine series	PMC 125 S, M	PMC 125 E	PMC 125 L
Load and speed	320 - 630 kg at 1 m/s	1,150 - 1,600 kg at 1 m/s	825 - 1,000 kg at 1 m/s
Travel height	≤ 45 m	≤ 40 m	≤ 45 m
Average operation acc.	Category 1, 2	Category 1, 2, 3	Category 1, 2, 3
Max. starts per hour	120 s/h (40% duty cycle)	120 s/h (40% duty cycle)	180 s/h (40% duty cycle)
Machine service life	> 15 years, 15,000 h	> 15 years, 15,000 h	> 20 years, 20,000 h
Peak operation acc.	Category 1, 2, 3	Category 1, 2, 3	
Max. starts per hour (peaks)	180 s/h (30% duty cycle)	180 s/h (30% duty cycle)	
N # peaks (12h working day)	3 peaks of 1.5 hours	3 peaks of 1.5 hours	



- 180 starts per hour for a maximum of 3 peaks
- 120 starts per hour during regular operation
- 25 starts per hour average operation acc. cat 3



- 180 starts per hour during regular operation
- 62.5 starts per hour average operation acc. cat 3

Main specifications for elevators



Duty: Also known as usage rate of the elevator. This refers to how much traffic in a building is guided solely through the elevators. The suitable duty requirement for an elevator can be obtained from a traffic calculation that simulates the people flow in the building, and depends on its capacity and daily/yearly usage range.

Alongside to the machine, the performance of some other components – like controller, doors, car or sling – is crucial in defining the recommended scope of application for reliable operation.

Elevator duty can be classified into 4 categories:

Low-duty elevators

- Up to 150,000 starts/year
- Usage category 1 and 2, according to ISO 25745-2
- Designed for very low to low usage intensity (about 200 trips per day) and at 1 m/s speed
- Typically found in residential buildings with up to 20 dwellings, small offices or administrative buildings of ≤ 5 floors, small hotels and car parks

Mid-duty elevators

- Up to 400,000 starts/year
- Usage category 3, according to ISO 25745-2
- Designed for low to mid usage intensity (about 500 trips per day) and up to 1.6 m/s speed
- Typically found in residential buildings of ≤ 50 dwellings, medium-sized office or administrative buildings ≤ 10 floors, medium-sized hotels, shops, small hospitals, universities, etc.

Heavy-duty elevators

- Up to 600,000 starts/year
- Usage category 4 and 5, according to ISO 25745-2
- Designed for mid to high usage intensity (about 1,000 trips per day) and speed up to 2.5 m/s
- Typically found in residential buildings > 50 dwellings, large office or administrative buildings > 10 floors, large hotels, shopping centers, metro stations, airports or main train stations, etc.

Extra heavy-duty elevators

- Over 600,000 starts/year
- Usage category 6, according to ISO 25745-2
- Designed for high, very high or extremely high usage intensity ($> 1,000$ trips per day) and speeds ≤ 5.0 m/s
- Typically found in very large office or administrative buildings > 100 m, metro or train stations, that are open 24/7



Starts per hour (s/h)

This term refers to the number of times the elevator machine starts to move the cabin either up or down over a period of one hour. Releveling starts are not considered. Specified as number of s/h: e.g. 120, 180 or 240 s/h. The elevator specifications may require a minimum capability for elevator s/h to ensure robust equipment that is rated to perform during peak building traffic periods and to provide the expected service life and value.



Duty cycle or duty factor

The parameter defining the “run” time duration at rated load for a given period. This is mainly used for the calculation of a machine's heat emission and commonly expressed as a percentage or ratio. For an elevator system, a typical value is 40% “run” time for a one-hour period.



Design service life

The design service life of a product is the time, under defined duty and working conditions (environmental, mechanical and climatic), during which it performs within its specified parameters. Regular maintenance enables the design lifetime to be reached. To eliminate the risk of failures, modernisation measures are frequently required when design lifetime is exceeded.



Peak traffic

A regular period of heavy traffic, especially at the beginning or end of a workday.

Please take account of other specific requirements that your project may have in relation to this matter and contact your TK Elevator sales representative for personalised advice.



Contact

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