

API Standard 541 and 547 Motors for the
Petroleum and Chemical Industries



large motors

ABOVE NEMA



SIEMENS

The stakes are high. The choice is clear — Above NEMA motors from Siemens.

The highly demanding process industries — from oil production and refining to chemical processing and power generation — test the limits of motor reliability like no other users. Continuous flow is critical to these industries, and a failed motor means not only lost production time, but lost product as well.

With production runs worth \$100,000 per hour or more, engineers in these industries have learned the importance of uncompromising motor reliability. In these critical facilities, performance is measured in years, not months, of uninterrupted service around the clock. Despite searing heat, vibration levels imposed on the motors, severe electronic noise and generally grimy conditions, the motor must perform. Always.

The requirements for success in these settings are so high, the American Petroleum Industry has adopted two rigorous standards for motor performance — the newly updated API 541 Fourth Edition for the most critical special purpose motors, and API 547 First Edition for severe-duty general purpose motors.

For more than 15 years, Siemens motors, built in Norwood, Ohio, have been the API-standard motors of choice in thousands of process facilities around the globe.

From the petrochemical complexes of the Gulf Coast to the emerging chemical industry of the Pacific Rim to the established corporate giants of the U.S. and Europe, Siemens motors are trusted the world over to deliver the custom-engineered performance the industry demands.



RELIABILITY





Top engineering expertise at your service

Specifications for motors that meet the demanding API 541 standard can fill 20 pages and cost tens of thousands of dollars. That's a small price to pay for a motor that could save a company \$300,000 in a single afternoon. But in today's streamlined corporate structures few companies maintain the corporate engineering staffs needed to develop such detailed specifications on a regular basis.

API 547 was developed to remove some of that burden, allowing engineers to write slimmer specifications for severe-duty general purpose motors with horsepower ranges below those of API 541 (see chart). For critical-duty motors and those with horsepower requirements above the limits of API 547, API 541 remains the standard.

No one meets these demanding standards with fewer comments or exceptions than Siemens. Which isn't surprising — with a global R&D team of 48,000, Siemens is staffed to deliver the newest concepts in motor design. From insulation design to rotor construction, and from low operating vibration levels to bearing design and energy efficiency, our products deliver our customers the leading edge of technological innovation.

INNOVATION

API Standards 547 and 541 Basic Scope

Standard	Ratings (HP)	# Poles	Rotor Material	Siemens ANEMA Frames
API 547 1st Ed. – 2005	250 - 3000	4 - 8	Copper > 1000 hp	500 - 1120
	< 800	2	Aluminum	500 - 580
	<1250	2	Aluminum <= 1000 hp	500 - 580
API 541 4th Ed. - 2003	> 3000	4 - 8	Copper	680 - 1120
	>= 800	2	Copper	580 - 1120
	>= 1250	2	Copper	580 - 1120
	>= 500	All	Copper	500 - 1120

API 547

- 2.3 - 13.2 kV
- Horizontal Mounting only
- WPII and TEFC
- Sleeve bearings

API 541

- 2.3 - 13.2 kV
- Horizontal and vertical mounting
- All enclosures
- Sleeve bearings



Siemens motors: Built in the USA with proven performance year after year after year...

While the two API standards are delineated by horsepower, specifiers should remember an even more important differentiator — the criticality of the application. When the motor is critical to the reliable operation of your process, engineering to the API 541 standard — even when the HP requirements would allow an API 547 motor — is always the clear design choice.

In general purpose applications that are non-critical but still severe-duty, however, API 547 offers a less expensive alternative, allowing you to specify a motor that is appropriate for the application but not over-engineered.

Regardless of which best describes your application — critical or severe-duty — the motors team at Siemens stands ready to assist, supplementing your engineering staff with our own experienced technical experts.

With deep local expertise and factories around the globe, Siemens assures you receive the highest quality motor, built to conform to all international and national requirements and the special requirements of your specific application.

To find your nearest Siemens sales representative, visit www.sea.siemens.com and click on "Sales Offices."



Siemens Energy & Automation, Inc.

3333 Old Milton Parkway
Alpharetta, GA 30005

1-800-964-4114

info.sea@siemens.com

www.sea.siemens.com

©2005 Siemens Energy & Automation, Inc. All Rights Reserved.
Siemens is a registered trademark of Siemens AG. Product names mentioned may be trademarks or registered trademarks of their respective companies. Specifications are subject to change without notice.