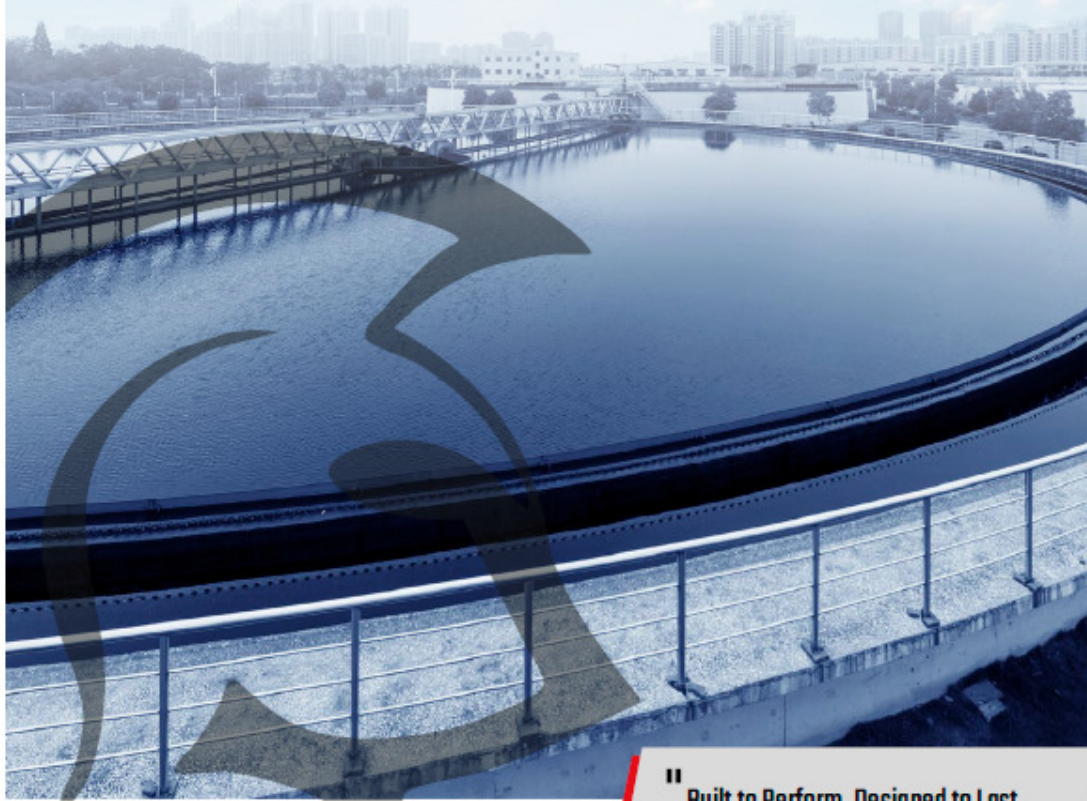




Spartan Premium Motor Range

WIMES-Compliant Solutions for Industrial Excellence
Compliant with WIMES 3.03, Issue 8



" Built to Perform, Designed to Last "

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INTRODUCING THE SPARTAN RANGE

WIMES-Compliant Solutions for Industrial Excellence

The Water Industry Mechanical & Electrical Specification (WIMES) 3.03, updated to issue 8, establishes the essential requirements for low-voltage electric motors in the UK Water Industry. These guidelines ensure that motors deliver the reliability, efficiency, and durability necessary to support critical infrastructure while driving down energy consumption and ownership costs.

WIMES-Compliant Motors from TEC

Efficiency and Reliability for the Water and Wastewater Industry

TEC Electric Motors is proud to introduce the Spartan range, our latest innovation in premium motor solutions designed to meet and exceed WIMES 3.03 specifications. Engineered for the unique demands of the Water and Wastewater Industry, the Spartan range combines advanced electrical and mechanical design with robust construction to deliver unmatched performance in even the most challenging applications.

With a focus on energy efficiency, reliability, and cost-effectiveness, Spartan motors come equipped with a host of mandatory and optional features that ensure compliance with WIMES standards. By prioritising flexibility, safety, and a lower total cost of ownership, TEC is committed to providing superior quality and performance for the UK Water Industry and beyond.

KEY BENEFITS OF THE SPARTAN RANGE

Low Cost of Ownership

Spartan motors are engineered for long-term efficiency, designed to minimise energy consumption while maintaining high productivity in continuous operation. This results in reduced unplanned downtime and significant value for users.

To meet WIMES standards, Spartan motors are equipped with factory-fitted PTC thermistors for use with variable speed drives (VSDs). For motors rated at 200kW and above, PT100 RTDs are included. Provisions for vibration monitoring are also available for frame sizes 160 and above, ensuring effective condition monitoring.

Energy Savings

Energy costs constitute approximately 90% of a motor's lifetime operational expenses, with acquisition, installation, and maintenance making up the remainder. Spartan motors comply with the IE3 and IE4 efficiency standards specified in IEC 60034-30-1:2014, offering substantial energy savings and quicker returns on investment.

WIMES 3.03 mandates minimum efficiency levels for motors across various configurations, including 2, 4, 6, and 8 poles with rated outputs of 0.12kW to 1000kW. All fixed-speed motors for safe areas must meet IE3 standards (per Regulation [EU] 2019/1781), with hazardous area and VSD-driven motors between 0.75kW and 1,000kW also required to meet IE3 efficiency levels.

The TEC Spartan WIMES Compliant Range

Efficiency levels:

- Premium Efficiency (IE3) and Super Premium Efficiency (IE4)
- Robust Stator frame, endshield and terminal boxes made from high grade cast iron (63-71 frame in aluminum)
- Frame sizes: 63 up to 355A/B
- Cooling method: TEFC (Totally Enclosed Fan Cooled) - IC411
- Rated output: 0.18 to 200kW
- Number of poles: 2, 4, 6 and 8
- Painting plan: C3M according to ISO 12944 (C1 Frames)
- Suitable for VSD operation

Corrosion Protection

In line with WIMES requirements, all Spartan motors feature a mandatory minimum C3 Medium durability paint finish, with cast iron frames in accordance with BS EN ISO 12944. This ensures superior corrosion resistance, enhanced robustness, and extended service life.

Durability

The TEC Spartan range delivers exceptional performance, paired with a robust build specification and the assurance of a 2-year warranty.

KEY FEATURES OF THE SPARTAN RANGE

Durability:

- C3 Medium (RAL5010) Paint Finish for corrosion protection
- IP55 Protection
- M8 Tapped holes for vibration sensing
- Cast Iron Terminal Boxes (80 frame and above)
- Cast iron fan cover (225 frame and above)
- Aluminium fan 315/355 frame
- Stainless steel nameplate and fixings

Mechanical Reliability:

- Located drive end bearing on all models
- 80-132 Frame with NSK sealed for life metal shielded (ZZ) bearings
- Regreasing points for 160 frame and above
- Spring oil seal at both ends with flinger disc at drive end for additional ingress protection
- SKF Insulated NDE bearing at non drive-end for 280 frame and above (to protect against circulating shaft currents)
- Shaft grounding for 315 frame and above

Winding Protection:

- Thermal Protection: PTC Thermistors, RTD's (PT100) – 200kW and above
- Anti-condensation heaters (with warning label and connection diagram)
- Tropicalised finish

Electrical Protection:

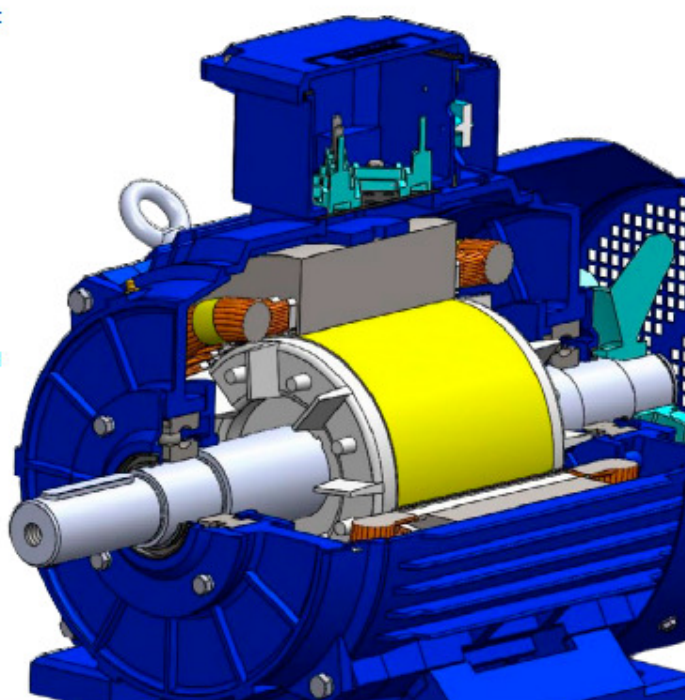
- Internal & external earth points

Energy Efficient Winding Design:

- IE3 Efficiency (0.18-55kW)
- IE4 Efficiency (75-200kW)
- Class F Insulation (Rise B)
- VPI Vacuum Pressure Impregnated

Flexible Connectivity:

- Auxiliary terminal box for Thermal Protection Heater connection (160 frame and above)
- LHS/RHS terminal box optional





TEC Spartan Range Compliant with WIMES 3.03, Issue 8

Standard Construction Features

Frame			63	71	80	90	100	112	132	160	180		
Mechanical features													
Mounting form			B3T / B34 / B35										
Frame	Material		Aluminum			Cast Iron EN GJL200							
Degree of protection			IP55										
Grounding			Earth terminals located inside the terminal box and externally on the motor frame & feet										
Cooling method			Totally enclosed fan cooled - IC411										
Fan	Material	2P 4P+	Polypropylene										
Fan cover	Material		Steel										
Endshields	Material		Aluminum			Cast Iron EN GJL 200							
Drain			Rubber drain plug										
Bearings	Drive end	2P	6201 ZZ	6202 ZZ	6204 ZZ	6205 ZZ	6206 ZZ	6306 ZZ	6308 ZZ	6309	6311		
		4P +											
	Non drive end	2P			6204 ZZ	6205 ZZ	6206 ZZ	6306 ZZ	6308 ZZ	6309	6311		
		4P +											
	Locking				Locked on DE - spring washer at NDE								
	Shaft seal				Oil seal with spring and a flinger at DE; oil seal with spring at NDE								
	Brand				NSK								
	Insulated NDE endshield				Without								
Shaft grounding brush at DE													
Lubrication	Type of grease		Lithium							Mobil Polyrex EM			
	Re-Grease Point		Without							With			
Terminal box	Material		Aluminum			Cast Iron EN GJL200							
Cable Entries	Main	Size	2 x M16 x 1.5	2 x M20 x 1.5	2 x M20 x 1.5	2 x M25 x 1.5		2 x M32 x 1.5		2 x M40 x 1.5			
	Accessory	Size	2 x M20 x 1.5										
	Plug		Threaded plastic plug for transport and storage										
Shaft	Material		AISI 1040/45										
	D.E. Threaded hole	2P	M4	M5	M6	M8	M10	M10	M12	M16	M16		
		4P +											
Vibration level			Grade A										
Balancing			With half key										
Provision for vibration sensors			Without								M8 tapped hole for each bearing housing		
Nameplate	Material		Stainless steel AISI 304										
Painting	Plan		Waterborne epoxy acrylic										
	Performance Criteria		Corrosive category C3 Medium. Durability Medium										
	Colour		RAL 5010 - Blue										
Electrical features													
Design			IEC										
Voltage	IE3 IE4		$\leq 3.0\text{ kW } 220 - 240/380 - 415\text{ V}/50\text{ Hz } 440 - 460\text{ V } 60\text{ Hz}$ $\geq 4.0\text{ kW } 380 - 415/660 - 720\text{ V}/50\text{ Hz } 440 - 460\text{ V } 60\text{ Hz}$										
Winding	Impregnation		VPI Vacuum Pressure Impregnated										
	Insulation class		F (DT 80K)										
Service factor			1.00										
Space heaters (with WIMES warning label)			110 V								110/230 V		
Rotor			Aluminium die cast										
Thermal protection			PTC 130°C (1 per phase)			PTC 155°C (1 per phase)							

TEC Spartan Range Compliant with WIMES 3.03, Issue 8

Standard Construction Features

Frame			200	225S/M	250S/M	280S/M	315S/M	315L	355M/L
Mechanical features									
Mounting form			B3T / B3S						
Frame	Material		Cast Iron EN GJL 200						
Degree of protection			IP55						
Grounding			Earth terminals located inside the terminal box and externally on the motor frame & feet						
Cooling method			Totally enclosed fan cooled - IC411						
Fan	Material	2P 4-8P	Polypropylene					Aluminium	
Fan cover	Material		Steel	Cast Iron EN GJL200					
Endshields	Material		Cast Iron EN GJL 200						
Drain			Rubber drain plug						
Bearings	Drive end side	2P	6312	6313	6314	6316	6317	6317	6319
		4P +					NU319	NU319	NU322
	Non drive end side	2P	6212				6317	6317	6319
		4P +					6319	6319	6322
	Locking		Locked on DE - spring washer at NDE						
	Shaft seal		Oil seal with spring and a finger at DE; oil seal with spring at NDE						
	Brand		NSK & 280+ SKF Insulated bearing NDE						
	Insulated NDE Bearing		Without				With		
Shaft grounding brush at DE		Without				With			
Lubrication	Type of grease		Mobil Polyrex EM						
	Re-Grease Point		With grease fitting						
Terminal box	Material		Cast Iron EN GJL200						
Cable Entries	Main	Size	2 x M50 x 1.5		2 x M63 x 1.5			2 x M63 x 1.5 (removable gland plate)	
	Accessory	Size	2 x M20 x 1.5						
	Plug		Threaded plastic plug for transport and storage						
Shaft	Material		AISI 1040/45					AISI 4140	
	D.E. Threaded hole	2P	M20	M20	M20	M20	M20	M20	M20
		4P +						M24	M24
Vibration level			Grade A						
Balancing			With half key						
Provision for vibration sensors			M8 tapped hole for each bearing housing						
Nameplate	Material		Stainless steel AISI 304						
Painting	Plan		Waterborne epoxy acrylic						
	Performance Criteria		Corrosive category C3 Medium, Durability Medium						
	Colour		RAL 5010 - Blue						
Electrical features									
Design			IEC						
Voltage	IE3		380 - 415/660 - 720V 50HZ/440 - 460V 60HZ						
	IE4								
Winding	Impregnation		VPI Vacuum Pressure Impregnated						
	Insulation class		F (DT 80K)						
Service factor			1.00						
Space heaters (with WIMES warning label)			110/230V						
Rotor			Aluminium die cast						
Thermal protection			PTC 155°C (1 per phase). Motors rated at 200kW and above also fitted with RTD's (PT100 - 2 wire)						



 TA Aluminium Motors 56-132 Frame Multi mount and highly versatile. IE2 <0.75kW, IE3 Above	 ECOL Cast Iron 80-355 Frame Multi-mount robust cast iron frame. IE3 and IE4 0.75-315kW.
 Caprun and Capstart 1PH IE2 Aluminium Motors 56-112 Frame (up to 3.7kW) TPC: Ideal for fan, pump and square law torque applications. TCC: Ideal for applications where high starting torque is required.	 TA BM Brake Motors 71-160 Frame TA IE2/IE3 aluminium range with integrated brake at the none drive end fitted with hand release as standard. Multi mount and highly versatile.
 TEC ATEX Zone 2/22 3GD 63-355 Frame Thermistors as standard throughout the range. 63-132 Aluminium and 160-355 Cast Iron.	 TEC-YBX3 ATEX Range ATEX 2G Ex db IIC T4 Gb (-20° / + 60° amb) motors in 2/4/6 Pole. Flameproof motors engineered for hazardous environments, delivering exceptional safety, reliability, and performance.
 Large Frame Motors Available from stock up to 630kW 2 and 4 pole, in both standard and compact frames. IE3 efficiency with WIMES specification. MV and HV motors available on short lead times up to BMW.	 WKM Hypoid Helical Gear Units Lightweight, high efficiency Hypoid Helical gear units - WKM50 to WKM90, interchangeable with worm gears from many popular manufacturers.
 TCNDK Worm Boxes Size 30-150 Ratios from 5/1 to 100/1. Helical worm and combination worms available.	 Modular MK/MR Gearbox Range Our new bevel helical and inline modular gearbox range covers ratios from 3/1-250/1 and shaft sizes of up to 120mm with standard IEC input flanges and bolt on output flanges/accessories. The modular design allows for super quick build-times at competitive price levels.
 Official UK Varvel Distributor TEC are an in-house build centre for Varvel and can create custom ratios and outputs throughout the RO/RV/RD from stock components, in addition to having access to all of Varvel's extensive product range on short lead times.	 TEC DC motors Many styles, speeds and powers available for a variety of hydraulic applications.
 B48 and B56 Motors Imperial framed B48 and B56 motors available.	
 Specials and Extras Epoxy painting, anti condensation heaters, special bearings, IP upgrades, slide bases and rails, shaft extensions, retro fit brake motors, vector motors, forcevent motors, flying lead motors and much more.	



The Motor Control
Warehouse