

OVERVIEW INVERTER TESTING



Product phase	Development / Validation	Long-term tests (Endurance)	Pre-series & small series, optimization	Production, EOL		System test benches
Test bench type	Stand Alone	Stand Alone	Stand Alone / Inline	Inline system	Robot cell	Robot cell
Operator	OEM, Tier 1, testing service provider	Testing service provider, Tier 1, OEM	OEM, Tier 1, Tier 2	OEM, Tier 1	OEM, Tier 1	OEM, Tier 1
Goals	<ul style="list-style-type: none"> Investigations during development Investigations (electronics, software, housing design, thermal management, EMC, control engineering, etc.) Define test scenarios Create controllable testing conditions Mapping of the electronic basic data required in the project 	<ul style="list-style-type: none"> Behavior of the test specimen under extreme conditions (duration, ambient temperatures, etc.) Stress test artificial aging 	<ul style="list-style-type: none"> Tests during production Analysis of returns Optimization of cycle time, software for EOL Delivery test bench (prototype tests) Pre-series 	<ul style="list-style-type: none"> Product quality control Short test time Energy efficiency of the test bench in operation Function test / ISO test / Leak test 		<ul style="list-style-type: none"> Test the entire system - Inverter - Motor - Housing - Differential
Test specimen supply / manipulation	manually	manually	manually / semi-automated	automated via transport system	automated via robots	automated via robots
Contacting	manually	manually	manually / semi-automated	automated	automated	automated
Tempering Test specimen	if needed	if needed	if needed	Yes	Yes	Yes
Performance	real	blind / real	blind / real	blind / real	blind / real	real
Testing equipment	Electric motor emulator	Passive load (choke), Active load	Passive load (choke), Active load	Passive load (choke), Active load	Passive load (choke), Active load	real motor in connection with Inverter / load machine
Test duration / cycle time	1 hour - 1 day	2-3 months	5-20 minutes	ca. 180-240 seconds	ca. 25-40 seconds	180 seconds
Scope of delivery AUTFORCE	Components	Testing equipment Passive load (choke)	Full service provider	Full service provider		-

