

LAPP's turbine components have been expertly designed and field-proven to withstand humidity, condensation, vibration, extreme temperatures, exposure to oil, and electromagnetic interference – any of which could cause unwanted downtime and a negative impact on your bottom line. You'll find our products hard at work in just about every area of the turbine.

1 BLADES

De-ioning: ÖLFLEX® / UNITRONIC®

Lightning counter: ÖLFLEX® / UNITRONIC®

2 PITCH SYSTEM: HUB BOX

Battery supply/charger: ÖLFLEX®

Battery heating: ÖLFLEX®

Hub light: ÖLFLEX®

Emergency stop: ÖLFLEX®

Cable glands: SKINTOP®

3 PITCH DRIVES

Power supply: ÖLFLEX®

PTC resistor drive 1, 2 & 3: UNITRONIC®

Resolver drive 1, 2 & 3: UNITRONIC®

Limit switch 1, 2 & 3: UNITRONIC®

Cable glands: SKINTOP®

4 DRIP LOOP

Power supply 230/400/690V: ÖLFLEX®

Signals: ÖLFLEX® / UNITRONIC®

Ethernet: ETHERLINE®

Communication: HITRONIC®

5 TOWER CABLES

Lightning: ÖLFLEX®

Sockets: ÖLFLEX®

6 TOP BOX & BOTTOM BOX

Internal wiring: ÖLFLEX® single core

Ethernet: ETHERLINE®

Cable glands: SKINTOP®

Cable bushing system: SKINTOP® CUBE

Marking system: FLEXIMARK®

7 YAW DRIVES

Main power supply: ÖLFLEX®

Brake: ÖLFLEX®

Heater: ÖLFLEX®

Limit switch: ÖLFLEX® / UNITRONIC®

Sensor yaw bearing: UNITRONIC®

Cable glands: SKINTOP®

Plug & play: EPIC®

8 GEAR BOX

Heating/cooling: ÖLFLEX®

Cooling fluid pressure gauge: UNITRONIC®

Sensors PT 100: UNITRONIC®

Signals (gear box to top box): UNITRONIC®

Temperature bearings: UNITRONIC®

Cable glands: SKINTOP®

9 SLIP RING: HUB BOX CONNECTION

Supply drives/control: ÖLFLEX®

Battery supply: ÖLFLEX®

Signals: ÖLFLEX®

Heating: ÖLFLEX®

CAN Bus: UNITRONIC® BUS CAN
Ethernet: ETHERLINE® 2 pair

Cable glands: SKINTOP®
Plug & play: EPIC®

10 GENERATOR: SECOND TERMINAL BOX

Heating/cooling: ÖLFLEX®

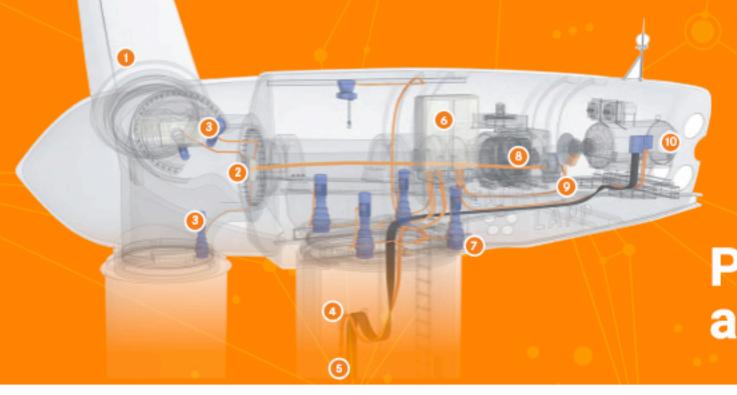
Sensors PT 100: UNITRONIC®

Signals (generator to top box): UNITRONIC®

Temperature bearings: UNITRONIC®

Cable glands: SKINTOP®

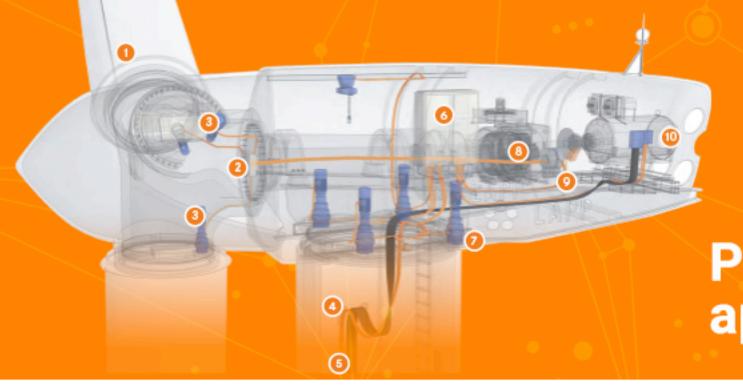




Products for wind energy applications at a glance

		1 Blades 2 Pitch System - Hub Box								6	Pitch Dri	vee	4 Drip Loop						
	3	De-ioning	Lightning	Battery Supply /	Battery	Hub Light	Emergency	Cable	Power	PTC Resistor	Resolver	Limit Switch	Cable	Power Supply	Signals	Ethernet	Other		
	ÖLFLEX*	-	Counter	Charger	Heating	-	Stop	Glands	Supply	Drive 1,2 & 3	Drive 1,2 & 3	1,2 & 3	Glands	230/400/690V	√	Communication	Communication		
	191 ÖLFLEX*	✓	✓	✓	✓	✓	Y		√					V	*				
	TRAY II ÖLFLEX*	√	√	√	∀	√	√		√					√	V				
2	CONTROL TM ÖLFLEX*	√	V	✓	V	V			V					V	*				
ÖLFLEX®	CLASSIC 110 CY ÖLFLEX®	-			,	-	V												
:0	HEAT 180 SIF A H07RN-F	√	√	✓	√	√	√		√					✓	*				
	ÖLFLEX* SF	V	V	V	1	V	V		V					V	V				
	ÖLFLEX* TORSION FRNC													V	✓				
	ETHERLINE*													7.5	- A	✓			
	CAT.6A FLEX ETHERLINE®															~			
	TORSION CAT.5 ETHERLINE®																		
SE IN	TORSION CAT.6A EPIC®									2						Y			
ETHERLINE®	DATA RJ45 EPIC®															V			
	DATA M12D ETHERLINE®															✓			
	ACCESS TOSIBOX																		
											100								
ONIC	UNITRONIC® 300	V	V							✓	\checkmark	✓			~				
UNITRO	UNITRONIC® BUS	✓	✓							✓	✓	✓			✓				
HITRONIC*	HITRONIC* TORSION																✓		
EX* CONNECT	ÖLFLEX* CONNECT CABLE SOLUTION			✓					✓	✓	✓								
åLFLEX*	ÖLFLEX* CONNECT SERVO			✓					✓										
	EPIC® HB ULTRA housings EPIC®																		
	HA series inserts									S 6									
EPIC®	POWER LS1 EPIC® H-BE series inserts																		
	EPIC® MC series modules																		
	EPIC® SIGNAL M23									9									
	SKINTOP® metallic glands							\checkmark					\checkmark						
NTOP®	SKINTOP® MS-SC							✓		S A			\checkmark						
SKIN	SKINTOP® non-metallic							✓					✓						
	glands SKINTOP®							✓					V						
SILVYN®	CUBE SILVYN* conduit							•					*						
FLEXIMARK* S	Plastic & stainless steel marking			✓	✓	✓	✓		✓	✓	✓	√		✓	✓	√	✓		

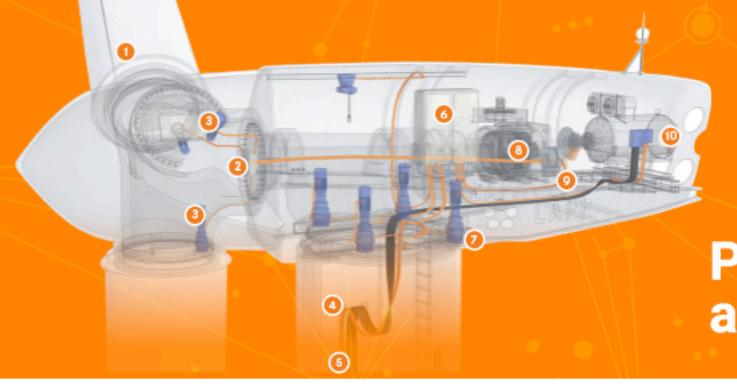




Products for wind energy applications at a glance

			G	Tower Cables	6 Top 1	7 Yaw Drives												
		5 Tower Cables Lighting Sockets Ethernet Other			Internal	Ethernet	Cable	Cable	Marking	Main	Mantes	72 × 25 × 56	Limit Sensor Cable Plug					
	ÖLFLEX*			Communication	Communication	Wiring	Communication	Glands	Bushing System	System	Power Supply	Heater	Brake	Switch	Yaw Bearing	Glands	& Play	
	191 ÖLFLEX*	V	V								V	V	V	V				
	TRAY II ÖLFLEX*	V	V								V	V	V	V				
	CONTROL TM	V	V								V	V	V	V				
ÖLFLEX®	ÖLFLEX* CLASSIC 110 CY	V	V								V	V	V	V				
凉	ÖLFLEX* HEAT 180 SIF A	V	V								V	V	V	V				
	H07RN-F ÖLFLEX*	V	V								V	V	V	V				
	SF	\checkmark	√								✓	\checkmark	√	V				
	ÖLFLEX* TORSION FRNC																	
	ETHERLINE® CAT.6A FLEX						✓											
	ETHERLINE® TORSION CAT.5			~			✓											
ů	ETHERLINE® TORSION CAT.6A			V			✓											
ETHERLINE®	EPIC® DATA RJ45			V			V											
Ē	EPIC*			***			~											
	DATA M12D ETHERLINE®						V											
	ACCESS TOSIBOX						V											
							•											
ONIC	UNITRONIC® 300													V	✓			
UNITRO	UNITRONIC® BUS													✓	✓			
HITRONIC*	HITRONIC* TORSION				✓													
CONNECT	ÖLFLEX* CONNECT CABLE SOLUTION					✓					✓							
ÖLFLEX® CONNE	ÖLFLEX* CONNECT SERVO										✓							
	EPIC* HB ULTRA housings																\checkmark	
	EPIC ⁶ HA series inserts																\checkmark	
EPIC	EPIC* POWER LS1 EPIC* H-BE																V	
	series inserts EPIC® MC				7												V /	
	series modules																V	
	SIGNAL M23 SKINTOP®				7											11,000	√	
	metallic glands							V								\checkmark		
NTOP	SKINTOP* MS-SC							√								√		
SKIIN	SKINTOP ^e non-metallic glands							\checkmark								\checkmark		
	SKINTOP* CUBE							✓	✓							✓		
SILVYN®	SILVYN* conduit																✓	
FLEXIMARK*	Plastic & stainless steel marking	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓		✓	





Products for wind energy applications at a glance

				8 Gea	r Boy				Slip Ring - Hub Box Connection							Generator - Second Terminal Box						
		Heating /	Cooling Fluid	Sensors	Olamaka	Temperature	Cable	Supply Drive /	Battery			CAN Due	Ethernet	Cable	Plug &	Heating /	Sensors	Signals (Generator to	Temperature	Cable		
	ÖLFLEX*		Pressure Gauge	PT 100	Top Box)	Bearings	Glands		Supply			CAN BUS	Communication	Glands	Play	Cooling	PT 100	Top Box)	Bearings	Glands		
	191 ÖLFLEX*	V						V	V	V	V					V						
	TRAY II ÖLFLEX*	V						*	V	V	V					V						
٤	CONTROL TM ÖLFLEX*	V						V	V	V	V					V						
ÖLFLEX®	CLASSIC 110 CY ÖLFLEX*	V						*	V	V	√					√				2		
Ö	HEAT 180 SIF A H07RN-F	✓						✓	✓	Y	✓					✓						
	ÖLFLEX*	V						V	√	✓	✓					V						
	SF ÖLFLEX*	•							•	•	×					•						
	TORSION FRNC ETHERLINE®												V									
	CAT.6A FLEX ETHERLINE®						4						V									
	TORSION CAT.5 ETHERLINE®						4															
LINE	TORSION CAT.6A EPIC®												✓									
ETHERLINE®	DATA RJ45						19													6		
<u></u>	EPIC® DATA M12D																					
	ETHERLINE® ACCESS																					
	TOSIBOX																					
RONIC®	UNITRONIC® 300		~	✓	✓	✓											✓	~	✓			
UNITRON	UNITRONIC* BUS		✓	✓	✓	✓						✓					✓	✓	✓			
HITRONIC	HITRONIC* TORSION																					
CONNECT	ÖLFLEX* CONNECT CABLE SOLUTION	✓			✓											✓		✓				
ÖLFLEX®	ÖLFLEX* CONNECT SERVO																					
	EPIC® HB ULTRA housings EPIC® HA series inserts														✓							
EPIC®	EPIC* POWER LS1														\checkmark							
8	EPIC® H-BE series inserts														\checkmark							
	EPIC® MC series modules														✓							
	EPIC® SIGNAL M23														√					9		
	SKINTOP® metallic glands						✓							✓						V		
SP C	SKINTOP*						V							V						1		
KINTO	MS-SC SKINTOP® non-metallic						1							1						1		
S	glands						٧							V .						V		
	SKINTOP* CUBE						√							√						✓		
SILVYN®	SILVYN* conduit				✓										✓							
FLEXIMARK*	Plastic & stainless steel marking	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓			