

F-DIESEL Electronic Actuator for Gasoline Application

► Waste Gate Actuator 废气阀门电控执行器

► Non-Smart(DC) 非智能(有刷电机)

- Permanent operating torque 持续输出扭矩..... 0.925Nm(+160°C)
- Permanent holding torque 持续保持扭矩..... >1.24Nm(+160°C)
- Weight 重量..... 370g
- Commucation 通讯..... ANALOG/PWM/SENT



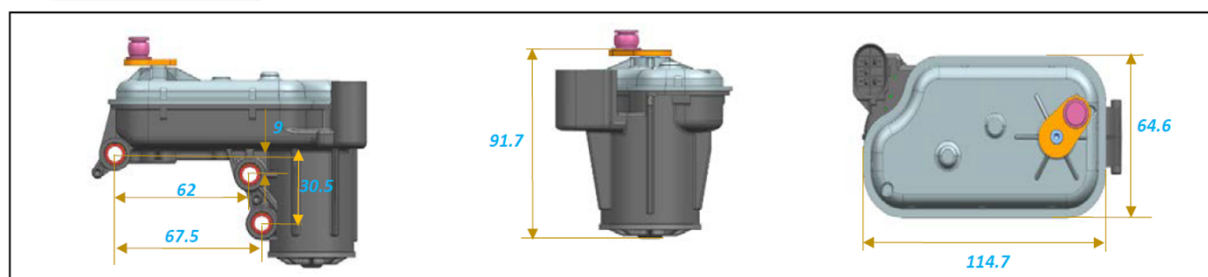
► Performance 性能

Gearing ratio 齿轮传动比	3 stage spur gear(gear ratio: 77:1) 3级齿轮传动 (传动比77:1)	Sensor signal(%) 信号输出 (4.75±0.11V) 95±2.2 (0.25±0.11V) 5±2.2 Lever angle(°) 摇臂角度 Internal lower mechanical STOP 内部机械下止点 Internal upper mechanical STOP 内部机械上止点 Sensor Voltage-Angle characteristic curve 传感器电压-角度特性曲线
Actuating time 响应时间	~160 ms(60° working range) 60毫秒 (工作角度60度范围)	
Working Ange 工作角度	110°±3°	
Linearity 线性度	±2%	
Temperature range 温度范围	-40°C~+160°C	
Position Sensor 位置传感器	3D Hall Sensor 3D霍尔传感器	

► Electrical and Mechanical Interface 电气和机械接口

Operation Voltage 工作电压	Motor operation voltage 9V~16V 马达工作电压9V~16V	Pin(Heat treatment) 输出销 (热处理方式)	Plasma carburizing/等离子渗碳 ARCOR PV/盐浴渗氮 Electro less nickel plating/化学镀镍 Induction hardening/感应淬火
Bushing diameter 安装孔径	3xΦ8	Output Position 输出方向	Cover side/Housing side 上盖端/壳体端
Connector Type 接插件类型	MLK	MCON	RD
Lever Type (according request) 摇臂参考(根据客户要求)	10	11	13
Pin image(according request) 输出销参考(根据客户要求)	9.79 Φ10	11.2 Φ10	6.95 Φ9.9

► Dimensions All dimensions is mm, Drawing not to scale(Lever and pin accrding customer request)

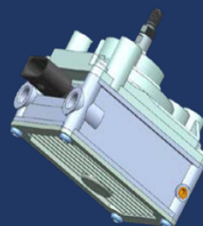


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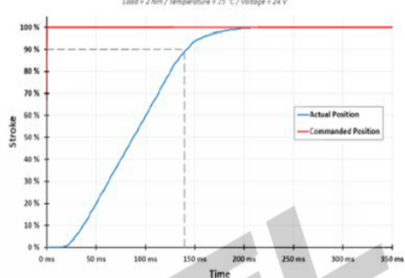
► Smart Actuator 废气阀门电控执行器

► Smart(BLDC) 智能(无刷电机)

- Peak Dynamic Torque 最大峰值扭矩..... 9.5Nm
- Continuous Holding Torque 持续保持扭矩..... 5.4Nm
- Weight 重量..... 1.0kg
- Commucation 通讯..... CAN



► Performance and Endurance 性能和耐久

Resolution 分辨率	0.24°	
Work Range 工作角度	110°	
Speed 速度	92 RPM(2Nm load @24V)	
Response Time 响应时间	140 ms @ T90 to a 70° step	
Gear Ratio 齿轮传动比	1:49.2,2 stages	
Lifetime 生命周期	10M,cycles @ 2Nm over T°C	

► Electrical and Mechanical Interface 电气和机械接口

Operating Voltage 工作电压	6 to 36V with Integrated over and reverse-voltage protection according to ISO 16750-2 6至36V，根据ISO 16750-2的集成和反向电压保护
Integrated Connector 接插件	4 Pins: Kostal SLK2.8/4Pins:Kostal AMPSEAL 16
Wire Harness alternatives 接插件备选方案	4 to 8 Pins, Tyco, Deutsch, Kostal...
Customer Specific Communication 客户具体通讯	Standard: CAN (Baud Rate: 250 or 500 kbits/s, automatic detection possible) Option: PWM, SENT, ANALOG, EASYPLUG
Failsafe 失效保护	Clockwise, counter clockwise and intermediate stroke positions, various torque available 顺时针、逆时针和中间冲程位置，各种扭矩可用
Output shaft 输出轴	2 flats, knurls or M8 available and other design possible
Connector Type 接插件类型	 Kostal SLK2.8 4-pin  Kostal AMPSEAL 16

► Operating conditions工作条件

Operating Temp. Range 工作温度范围	-40°C / +160°C (with water-cooling)
Vibration Level 振动级别	Up to 26.5gRMS – Bandwidth 20-2000Hz
Protection Class and Waterproof 防护等级	IP 6K9K (DIN 40050-9)
ROHS (Lead Free) and IMDS 环保满足ROHS(无铅)和IMDS	Compliant 满足
EMC 电磁兼容性	OEM standard compliance 根据客户标准

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