



KONGBERG
AUTOMOTIVE

ARC ACTUATOR

ELECTRIC ROTARY ACTUATOR ARC



PRODUCT DESCRIPTION

This ARC rotary compact actuator offers a unique performance in operating forces and world-class packaging and weight. The actuator is available both with embedded HW and SW as a stand-alone unit. It is also available with HW containing only a sensor system for applications operated by a separate control unit. The ARC actuator is a gear shift actuator that can function as a rotary actuator on other powertrains. It includes a variable gear system designed to have variable torque and speed behavior at a specific position.

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AT A GLANCE

- > FEW PARTS AND LOW COMPLEXITY
- > UNIQUE GEAR TRAIN DESIGN WITH HIGH EFFICIENCY ON KA DESIGNED WORM GEAR PROVIDING COMPACT PACKAGING
- > UNIQUE VARIABLE REDUCTION GEAR, GIVING TORQUE AND SPEED BOOST IN CORRECT GEAR SELECTION
- > BACK DRIVABLE GEAR TRAIN GIVING THE OPTION OF MANUAL OVERRIDE
- > KA DEVELOPED CONNECTOR OPTIMIZED FOR MANUFACTURING, WITH LOW COST AND ROBUST PCB CONNECTION.
- > UNIQUE ROBUST SEALING AND VENTILATION
- > CAN BE SUPPLIED WITH OR W/O KA DEVELOPED CONTROL LOGICS
- > COMPACT AND LIGHT PACKAGING
- > SUITABLE APPLICATION MIGHT BE PRND/ P-LOCK ACTUATION ON AT, DCT, CVT AND EV TRANSMISSIONS.
 - » FOR THESE APPLICATIONS, PARTICULARLY PRND SHIFTING, IT HAS A VERY NEAT AND UNIQUE FEATURE, A VARIABLE FINAL GEAR DELIVERING MAXIMUM POSSIBLE TORQUE IN ONE END OF STROKE AND MAXIMUM POSSIBLE SPEED AT THE OTHER END OF STROKE.
 - » BY PLACING P AT STRONG END AND D AT FAST END, TWO GOOD BENEFITS CAN BE ACCOMPLISHED, I.E. GETTING OUT OF P EVEN AT HIGHEST POSSIBLE FRICTION INSIDE P-LOCK AND FAST SHIFTING IN DRIVE MODE (RND).

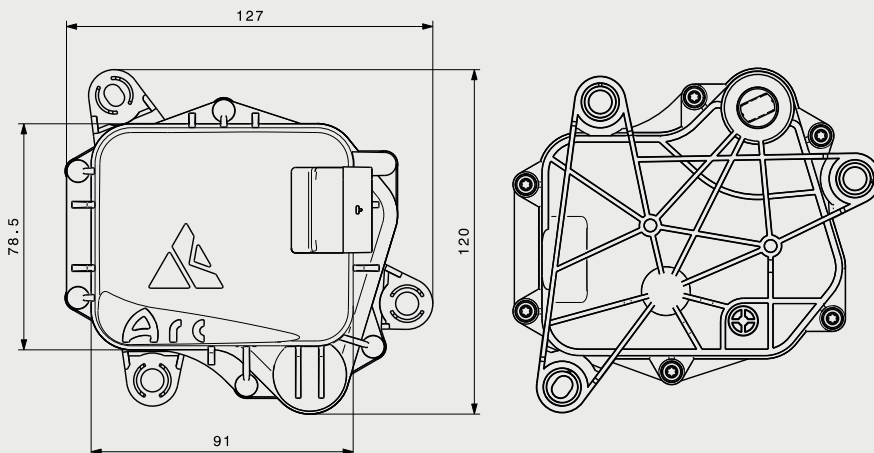
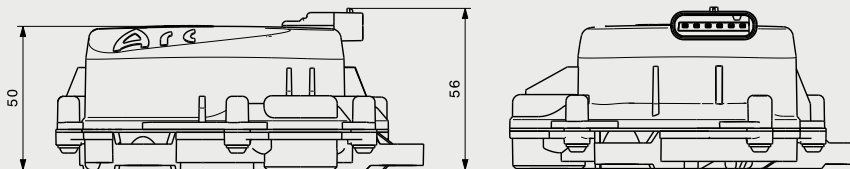


MECHANICAL SPECIFICATION

AMBIENT TEMPERATURE RANGE:	-40°C to 125°C
DURABILITY:	>300 000 cycles
TORQUE GUARANTEED OVER VOLTAGE AND TEMP RANGE:	>14Nm
SHIFT STROKE	>40°
SHIFT TIME	<300ms
INGRESS PROTECTION	IP6K7 / IP6K9K

ELECTRICAL SPECIFICATION

MOTOR OPERATING VOLTAGE	12V
MOTOR TYPE	DC 35W
ISO 26262 COMPLIANCE	ASIL B
COMMUNICATION	CAN FD
EMC COMPLIANCE	CISPR 25 class 3



MODULAR ELECTRONICS DESIGN

MODULAR ELECTRONICS DESIGN WITH OR WITHOUT ECU TO COMPLY WITH VARIOUS TYPES OF VEHICLE SYSTEM INTEGRATION AND CONTROL ELECTRONICS.

- > ARC G2 IS INTEGRATED IN VEHICLE ELECTRICAL ARCHITECTURE AS A DC SERVO WITHOUT ECU.
 - » ARC IS CONTROLLED BY EXTERNAL ECU
 - » MOTOR IS POWERED BY A ~16KHZ 12V PWM, MAX 20A
 - » OUTPUT SHAFT POSITION FEEDBACK BY SENT OR PWM
 - » SENSOR SYSTEM WITH INTERNAL DIAGNOSTICS AND E2E PROTECTION OF DATA TRANSMISSION FOR ASIL C COMPLIANCE
 - » USCAR-2-6 COMPLIANT TE MCON 1.2 CONNECTOR

- > ARC G3 IS INTEGRATED IN VEHICLE ELECTRICAL ARCHITECTURE AS COMPLETE STANDALONE ECU.
 - » ALL CONTROL ELECTRONICS INCLUDED
 - » CAN FD WITH PARTIAL NETWORK
 - » UDS ACCORDING TO ISO 14229
 - » SW DOWNLOAD VIA CAN BOOT LOADER
 - » ASIL C COMPLIANT
 - » LIN AS OPTIONAL COMMUNICATION
 - » HARDWIRED WAKE UP INPUT (TYPICALLY KL15) ALSO ACTS AS REDUNDANT POWER SUPPLY FOR MCU AND SENSOR SYSTEM
 - » USCAR-2-6 COMPLIANT TE MCON 1.2 CONNECTOR