

“tough tech for tough environments”

PA-RR-260-8 redundant actuator

Pegasus

Actuators GmbH



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General Description

Pegasus redundant servo actuators have been developed for applications that require extraordinary operating reliability. The actuator's two channel design allows for continuous operation even after a single point failure has occurred.

Redundancy Architecture

The actuator hardware consists the following:

Multiple master control units allow for a majority decision, 2 independent servo controllers each controlling one brushless motor and 3 contact-less position angle sensors in order to detect and rectify an incorrect output shaft position signal. During standard mode the actuator exchanges signals thru both actuator channels.

In standard mode motor no. 1 and its power stage unit are working, meaning that the motor no. 2 and its power stage unit will only be engaged after no.1 unit has failed. The actuator performance is not negatively effected after a motor/ power stage failure.

An example for a single point failure management: in case of a defective motor, the multiple master controllers immediately recognise that the actuator did not reach the desired position in time. The back up motor/ servo controller unit will be switched on without requiring the assistance of the AP. In principle all possible single point failures are handled accordingly.

Another example: in case of a broken signal cable, the multiple master controllers will diagnose a missing or invalid signal and switch to the other channel. In case of two different but valid signals, the master-controllers will stay with the original communication channel.

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REDUNDANT PA-RR-260-8 UAV SERVO ACTUATOR



Operating Data

Supply data:

Operating voltage: 18V - 32V
Operating voltage typical: 24V
Standby current: 250mA

Performance data :

Stall torque: > 500 Ncm / > 710 oz-in.
Rated torque**: 300 Ncm / 425 oz-in.
Speed at rated torque: 130°/sec.
No load speed: 210°/sec.
Gear train backlash: < 0,5°
Travel angle: standard $\pm 90^\circ$
Max. travel angle (optional): $\pm 170^\circ$
PA-SC release point: 500Ncm / 710 oz-in.
Peak current - short time: 1950mA
Stall current - cont.: 1150mA (limited)
Weight: 520g / 18,3 oz

**according Pegasus Actuators GmbH specs.
(please inquire the test-specifications)

Environmental data:

Axial load on output shaft: < 100N
Lateral load on output shaft: < 600N
Operating temperature: -40°C - +70°C
Storage temperature: -40°C - +85°C

Environmental specifications:

DO-160 F (RCTA)
MIL-STD-810G

Product features:

Redundant PA-ME³ magnetic deflection angle sensor
Dual brushless motors
Dual servo controller PCB
Dual Glenair Mighty Mouse Series 801, 7-pin connector
Single Point Failure redundancy architecture
Oil lubricated gear-box
Unparalleled anti flutter circuit
Enhanced positioning resolution
Inbuilt (switchable) termination resistor
Inbuilt safeguarding fuses
Inbuilt power supply filter
Enhanced feedback signal resolution

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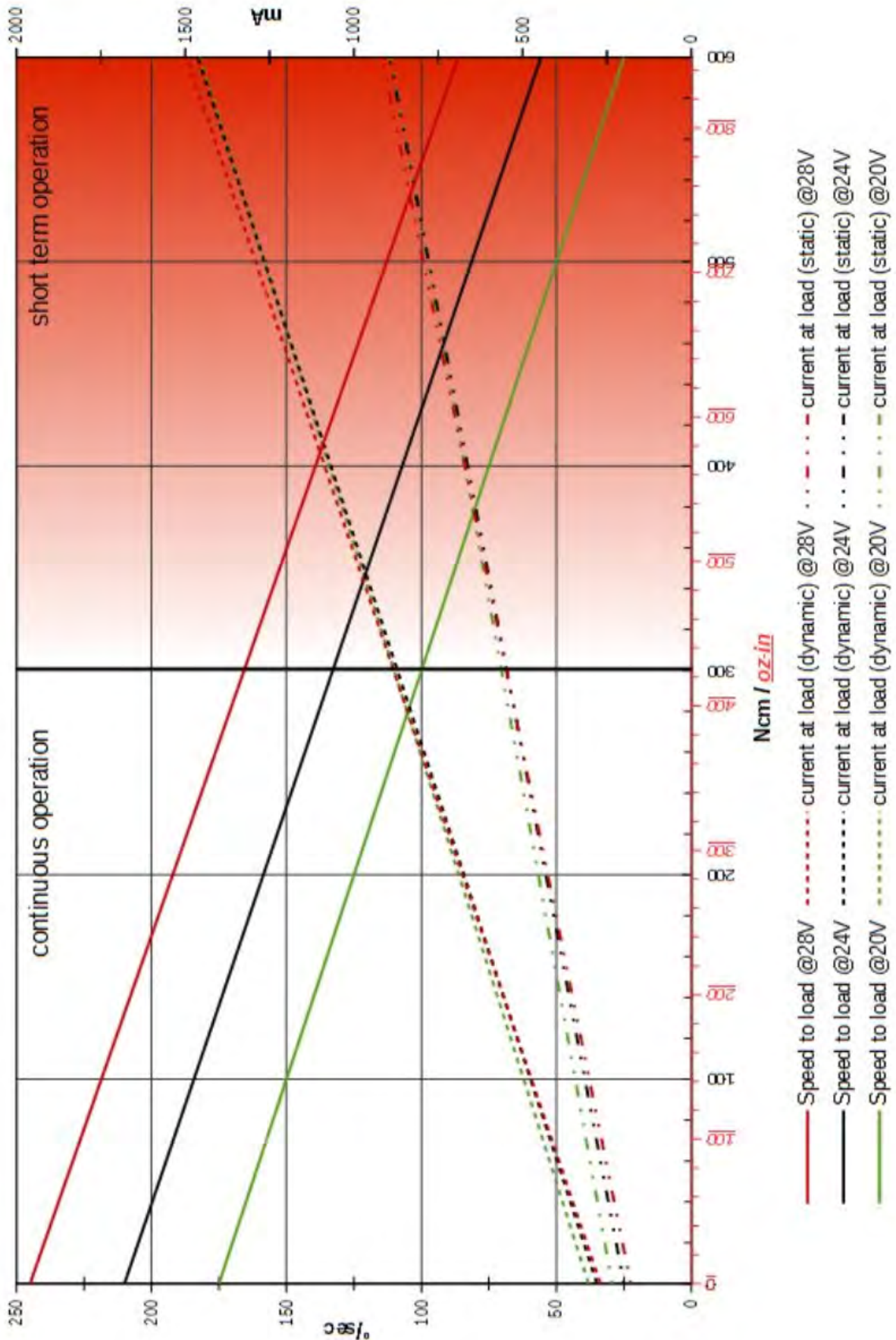
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**PA-RR-260-8-C-24-C-XXX-XX
24V**



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RS485 Interface Description

Baud-Rate	115200 bit/sec. $\pm 1,357\%$
Resolution	$< 0,022^\circ$

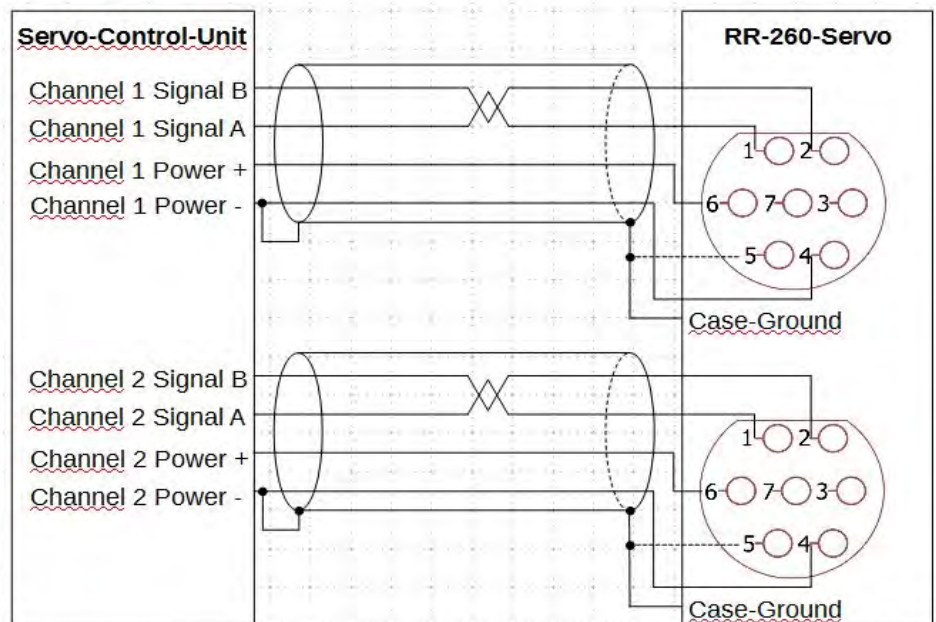
Connector:

Glenair Series 801 MightyMouse:801-011-07NF6-7PA

Mating connector: Glenair Series 801-007 or 801-008 with shell size 6-7 and Key position A

Pin Assignment:

1	Signal A
2	Signal B
3	
4	Power - (GND)
5	
6	Power + (VCC)
7	

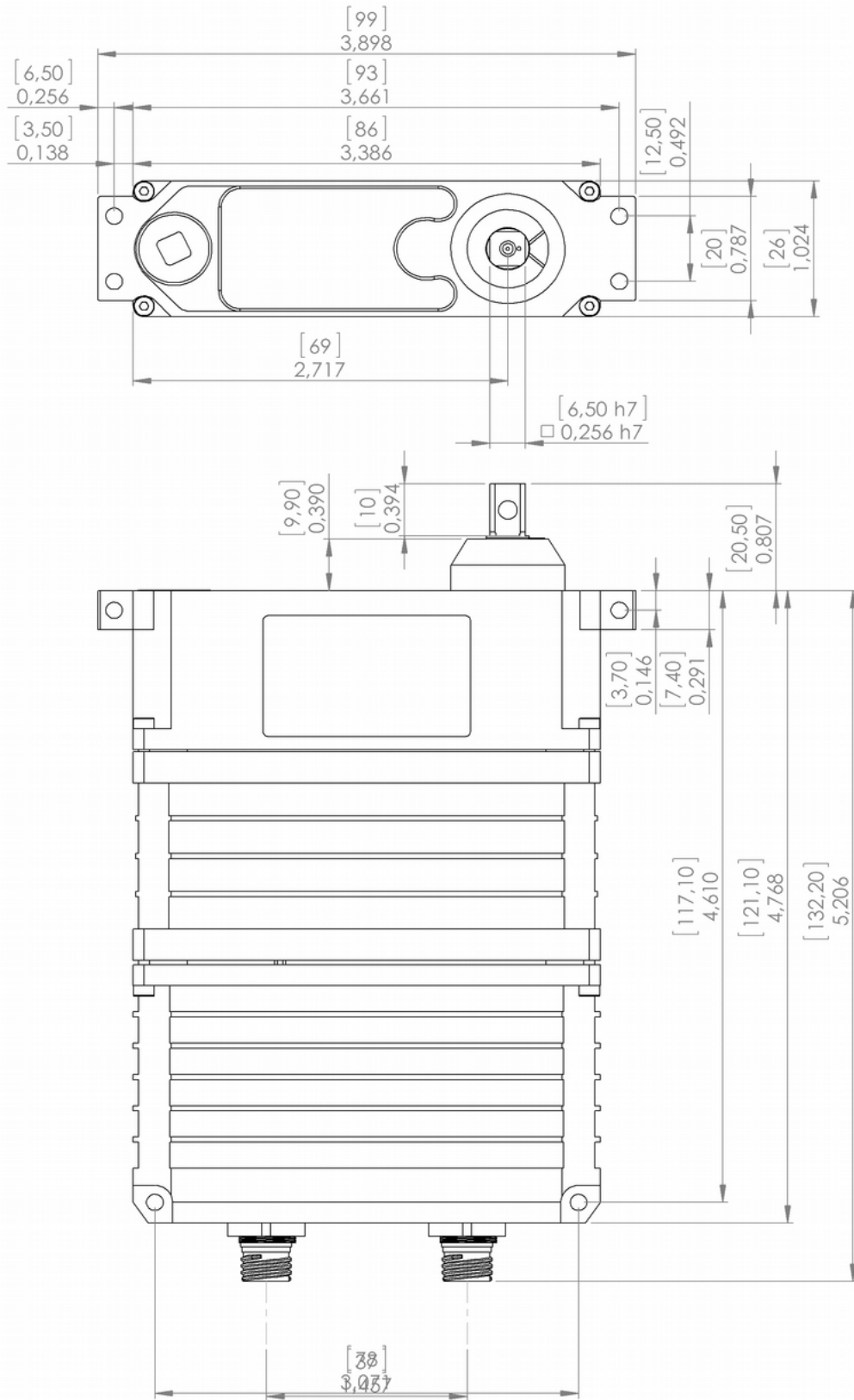
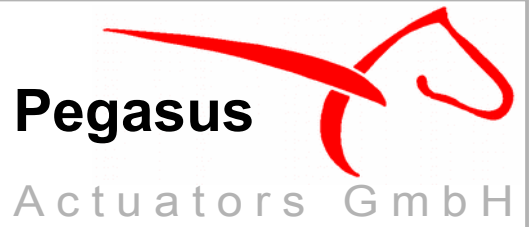


Dimensions:

Case Dimensions	86 x 121,1 x 26 mm 3,386 x 4,768 x 1,024 in
Weight:	520gr. 18,3 oz

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DIMENSIONS. [mm]
inch

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Order Code:

PA-RR-260-8-C-24-C-315-00

- revision index
- max. travel angle: 315°
- input signal: redundant RS485
- nominal operating voltage: 24V
- PA-SC overload gear protection
- Actuator type



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