



Safety brakes RD50/70/85/115-RSV

Light-weight safety brakes with hollow-shaft designed for servo kits ILM



RoboDrive safety brakes RD-RSV allow the design of compact and light-weight actuators and robotic joints. The brakes stop motion and keep position reliable and safe in case of power switch-off or emergency stop events. The hollow-shaft design of the brakes allows to guide signals, media and fluids, rays and cable through the brake.

The spring applied, electromagnetic safety brakes are available in four sizes and two braking torques for each size matching the nominal torque of the corresponding RoboDrive servo kit.

In applications combined with gearheads assured maximal braking torque levels protect gears from overload. The low power consumption and heat dissipation fit perfectly to the motor performance.

Key features:

- Hollow-shaft capability
- Light-weight design
- Low power consumption and heat dissipation
- Fail-safe in case of power loss
- Narrow braking torque tolerances
- Dimensions and braking torques match corresponding RoboDrive servo kits

Basic data

	RD50-RSV50	RD70-RSV60	RD85-RSV80	RD115-RSV100
Nominal braking torque T_{Br}^* [Nm]	0.30/0.60	0.84/1.44	1.68/3.12	6.8/13.4
Maximum braking torque $T_{B,max}^*$ [Nm]	0.75/1.50	2.10/3.60	4.20/7.80	17.0/33.5
Maximum rotation speed n_{max} [rpm]	10,000/7,000	7,000/4,400	6,000/3,800	1,500/1,000
Brake diameter D [mm]	53.4	72.4	88.4	118.4
Brake length L [mm]	15.9	17.9	17.9	26
Weight m [g]	110	210	300	820
Inertia J [kgmm ²]	2.10	6.95	18.6	98.6

* Braking torque can be adapted on request. Given values for the two standard configurations are valid for a operational temperature range of +5°C to +80°C. Maximum temperature: 130°C.

Electrical data

	RD50-RSV50	RD70-RSV60	RD85-RSV80	RD115-RSV100
Rated voltage U_{Br}^* [V]	8	8	8	8
Rated current I_{Br}^* [A]	0.31	0.46	0.63	1.20
Thermal losses $P_{B,L}$ at U_{Br} [W]	2.6	3.7	5.0	9.8
Overexcitation voltage U_{Bo}^* [V]	24	24	24	24
Overexcitation current I_{Bo}^* [A]	0.94	1.37	1.90	3.70
Thermal losses P_{Bo} at U_{Bo} [W]	23.4	33.4	45.0	88.2
Overexcitation time t_{Bo} [ms]	40	40	40	100
Coil resistance R_B [Ω]	25.48	17.52	12.70	6.50

* Adaption of voltage level can be realized on request.

Dimensions

	RD50-RSV50	RD70-RSV60	RD85-RSV80	RD115-RSV100
Brake diameter D [mm]	53.4	72.4	88.4	118.4
Brake length L [mm]	15.9	17.9	17.9	26.0
Hollow-shaft diameter dw [mm]	20	30	40	60
Pitch circle diameter LkG/LkB [mm]	49/25	66/36	80/46	108/67
Mounting thread G/ Hole B [mm]	M2/2.4	M2.5/2.9	M2.5/2.9	M3/3.4
Cable length K [mm]	250	250	250	250

