Technical data sheet

for rotary actuator

Type : HSE S 04 SG

Article number : 3511252

hense systeme

Fluid Drive Systems

Rotary Actuators

Rotary Lift Systems

Test Stand Technology (Torsion)

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design ..... rotary actuator in ring-cell type of construction
Because of its design the rotary actuator has an internal leakage which changes according to the applied pressure. E.g. if a load moment acts against the direction of rotation, the rotary actuator yields slightly to this torque in the end position as a result of this internal leakage!

type series ..... HSE S: Rotary actuator with an end position damping and without internal rotating angle limitation as a special design.
The rotary actuator can be retrofitted optional with two proximity switches for indication the both end positions of the operating angle of rotation (0°/180°).

size 04

manner of fastening
- housing of the rotary actuator ..... single-sided flange mounting with through hole d=10,5
property class of the fastening screws ≥ 10.9
- shaft end ..... cylindrical for clamping set with d=70h7
- centring at the shaft end ..... DIN 332-D M10-T2

manner of connection ..... Whitworth pipe thread according to DIN ISO 228 T1
A and B G3/8, axial in the rear end-position damping block

mounting position ..... arbitrary; According to the case of operation and mounting position a lowering load can provoke the leading of the shaft of the rotary actuator and then lowering brake valves shall be provided!

assembly advise ..... see the operating instructions

rotating angle limitation ..... an external limitation of rotating angle is necessary!

maximum nominal pressure	$p_{N\,max}$	bar	100		1)
least pressure	$p_{M\,min}$	bar	15	for an unobjectionable function of the unloaded actuator required	
max. starting pressure without load	$p_{St\,max}$	bar	6	at an outlet pressure of p= 1 bar	
specific torque	M_{sp}	Nm/bar	7,77	torque constant	2)
theoretical torque	M_{th}	Nm	777	at $\Delta p=p_N$	2)
mechanical efficiency ≈	η_{mec}	-	0,94	at $\Delta p=p_N$ and $\omega=\omega_{max}$	3)
effective torque	M_{eff}	Nm	730	at $\Delta p=p_N$ and $\omega=\omega_{max}$	3)
number of working chambers	z	-	2		
nominal angle of rotation	φ_N	grad	290	It is not allowed to move against to the internal stop!	2)
maximum operating angle of rotation	$\varphi_{A\,max}$	grad	180	The functional area of the end position damping is limited to the max. operating angle of rotation.	
maximum radial force	$F_{r\,max}$	kN	10	acting in the middle of the shaft end	
maximum axial force	$F_{ax\,max}$	kN	30	acting in the centre of the shaft end	
masse ≈	m	kg	65,0	± 10%, incl. oil infill	
mass moment of inertia of the shaft	$J_{W\,0}$	kgdm²	1,28	± 5%, without other parts like hub, coupling, rotation angle measurement system etc.	
maximum swiveling speed	ω_{max}	rad/s	1,0	this comply to 57 grad/s respectively n= 10 min^{-1}	1)
specific swept volume	v_{sp}	cm³/°	1,36	this results in a theoretical operating volume of V_A= 244,8 cm³	2)
required theoretical volume flow rate	Q_{th}	l/min	4,7	at $\omega=\omega_{max}$	2)
internal leakage volume flow rate	$Q_{L\,max}$	l/min	1,0	at $\Delta p=p_N$ and ν=50mm²/s	3) 4)
required effective volume flow rate	Q_{eff}	l/min	5,7	at $\Delta p=p_N$, $\omega=\omega_{max}$ and ν=50mm²/s	3) 4)
permissible pressure fluid				HLP-mineral oil according to DIN 51524 T2	
pressure fluid temperature range	$\vartheta_{Öl}$	°C	–20… +80	permissible limit of viscosity is to observe	1)
range of the kinematic viscosity	ν	mm²/s	18… 150	short-time, the optimal operation viscosity is 30 up to 50 mm²/s	
permissible cleanliness class for pressure fluid				Max. limit of pollution degree according to ISO 4406 class 18/16/13. For increase the life cycle we recommend according to ISO 4406 class 17/15/12.	
ambient temperature range	ϑ	°C	0... +50		
style of surface				metallic bright, moistened with anticorrosive agent	

technical subject to change without notice!

1) The contemporaneous incidence of two or more maximum values of temperature, pressure and slew velocity is not allowed!

2) Theoretically computed value without consideration of fabrication tolerances and when indicated the efficiency.

3) In test trials determined median; an inferential variance is possible!

4) In mint condition of the internal seals and in mint condition of the sliding surfaces.

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