Project Details for Secondary control

RE 57049/04.04 1/4
Replaces: 07.94

The following technical data must be known for the dynamic design and simulation of system performance free of overswing for secondary units:

1. Application

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.....

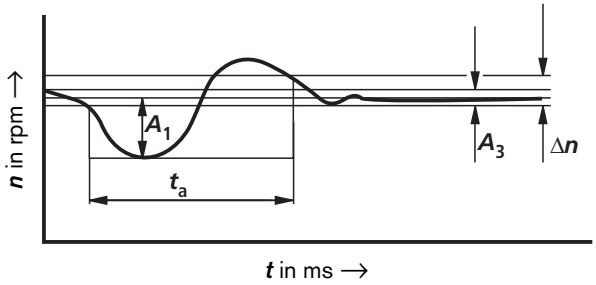
2. Control type

2.1 Speed control

perm. rotation deviation Δn:

static $A_3 = \pm$ ..... rpm
dynamic $A_1 = \pm$ ..... rpm

Definition of Parameters to VDI/VDE 2185:



2.2 Torque control

perm. torque derviation ΔM: static ± ..... Nm
dynamic ± ..... Nm

2.3 Position control

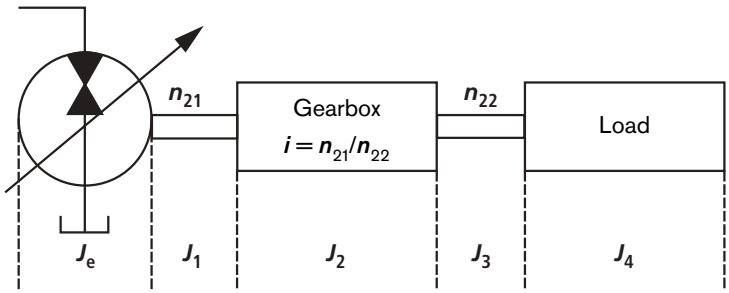
Positioned travel .....° or ..... mm
Position accuracy (referring to shaft of secondary unit) .....° or ..... mm
Stopping at end position with mechanical stop ☐ yes ☐ no

2.4 Data for all control types

Maximum speed n_{max} ..... rpm
Minimum speed n_{min} ..... rpm
Acceleration time ..... ms
Deceleration time ..... ms
Maximum torque ..... Nm
Starting torque ..... Nm
Friction torque ..... Nm
Disturbance torque ..... Nm
Rise time of disturbance torque t_L ..... ms
Control time of disturbance t_a ..... ms
Control time of reference input ..... ms

2.5 Moments of inertia *J*

Total J (not backlashfree) reduced to shaft of the secondary unit $J_{tot\ red}$ ..... kgm²



$$J_{tot\ red} = J_e + J_1 + J_2 + \frac{(J_3 + J_4)}{i^2}$$

Backlashfree, reduced moment of inertia J_1 ..... kgm²

Moment of inertia of a disc

$$J_{disc} = \frac{\pi \cdot \rho \cdot d^4 \cdot h}{32}$$

(ρ in kg/m³; h in m; J in kgm²; d in m)

3. Secondary controlled axial piston unit

Maximum torque	M_{max} ..... Nm
at speed	$n_{M\ max}$ ..... rpm
Maximum speed	n_{max} ..... rpm
at torque	$M_{n\ max}$ ..... Nm
Maximum power	P_{max} ..... kW
Perm. pressure	p ..... bar
Connection element	☐ Chain | ☐ Gearbox | ☐ cardan | ☐ linkage | ☐ belt | ☐ gear wheel / pinion | ☐ coupling
Total torsional stiffness (referring to secondary unit)	..... °/Nm
Total backlash (referring to secondary unit)	..... °
Radial loading of shaft with belt is $F_R = F_{torque}$ + pre-tension	$F_R =$ ..... N
Distance to shaft end	..... mm
External torque at standstill	..... Nm
Holding brake	☐ yes ☐ no

3.1 Gearbox

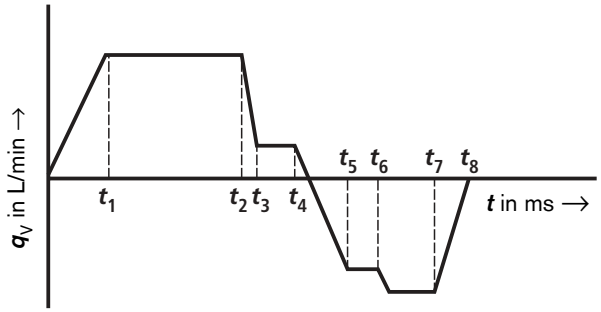
Ratio(s)	$i_1 =$ ..... $i_2 =$ .....
Gearbox efficiency	$\eta =$ ..... %
Gearbox backlash (referring to secondary unit)	..... °
Torsional stiffness of gearbox (referring to secondary unit)	..... °/Nm

4. Pressure oil supply (primary side)

Central oil supply	☐ yes ☐ no
Distance primary unit – secondary unit	..... m
How many secondary units can be run simultaneously and with what power?	Number ..... $\sum P$ ..... kW
Pressure fluid	.....
Max. entry temperature of cooling fluid	..... °C
E-Motor Data	Voltage ..... V Frequency ..... Hz Speed ..... rpm Insulation type IP .....

5. Design of accumulator

Performance cycle



6. Control technology

Power electrics by Rexroth	☐ yes ☐ no
Insulation type	IP .....
System control and system monitoring by Rexroth	☐ yes ☐ no
Control	☐ PLC ☐ conventional
Control voltage	 V
Signal level	 V
Operation	☐ on location ☐ remote control
Ambient temperature	..... ° C
Cable length between servo valve and control cabinet	..... m
Should an external machine control also be monitored?	☐ yes ☐ no
Bus connection	.....

7. Control electronics

Control electronics by Rexroth	☐ yes ☐ no
Emergency-Stop-Definition	.....
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8. Standards, conditions and special requirements

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