

input by Customer			
weight of load incl. lifting equipment	m		15240,00 kg
rope drum diameter	d_T		1,80 m
rotation speed of rope drum	n_T		5,33 rpm
total rotatory inertia	J_R		8846,28 kgm ²
gear box ratio	i_G		248,60
reeving ratio	i_F		1,00
efficiency of rope reeving	η_F		0,94
mechanical efficiency of drive system	η_G		0,98
closing time	t_0		0,25 s
total force of load on rope drum	$S_T = \frac{m \times 9,81 \times \dots}{i_F}$		140.534,14 N
overspeed, lowering with load	$n_T' = n_T + \frac{187,35 \times t_0}{S_T \times d_T \times \eta_G} + d_T$		19,97 rpm

This is $g/(\pi/60)$, should be $g/(2\pi/60)$

This is $4 \cdot g$... 2 is from the use of dt in this sum (torque is load \cdot radius), the other 2 is from the "+ dt ", I'm guessing they want radius there too,

This should be radius, or $dt/2$

I think they really want radius here, $dt/2$

So that should read $(g/2\pi \cdot 60) \cdot t_0 / ((g \cdot J_r) / (S_T \cdot (dt/2) \cdot \eta_u) + (dt/2))$;

The presence of "g" in two terms suggests ...

$(1/2\pi \cdot 60) \cdot t_0 / (J_r / (S_T \cdot (dt/2) \cdot \eta_u) + (dt/2)/g)$

They're getting a rotational speed (omega) as rad/sec (converted to rpm), dimensionally sec^{-1} ...

This follows (!?) from $g \cdot t$ on the top = m/sec and the denominator reducing to meters, so sec^{-1}

Now Torque = $J \cdot \omega_{\text{double_dot}}$, so $J/T = \omega_{\text{double_dot}}$, and r/g is ?