



EZG 703, 705 typed DC servomotors

3. Working principle

The magnetic field of EZG 703, 705 typed servomotors is assured by strontium ferrite permanent magnets. A special feature of these servomotors is their speed that can be adjusted in a very large range and they can be significantly overloaded for a short period of time. The in-built thermal resistant insulation materials assure a high operating temperature. The servomotors may be optionally equipped with tachogenerators, incremental encoders or both.

4. Feed-back devices

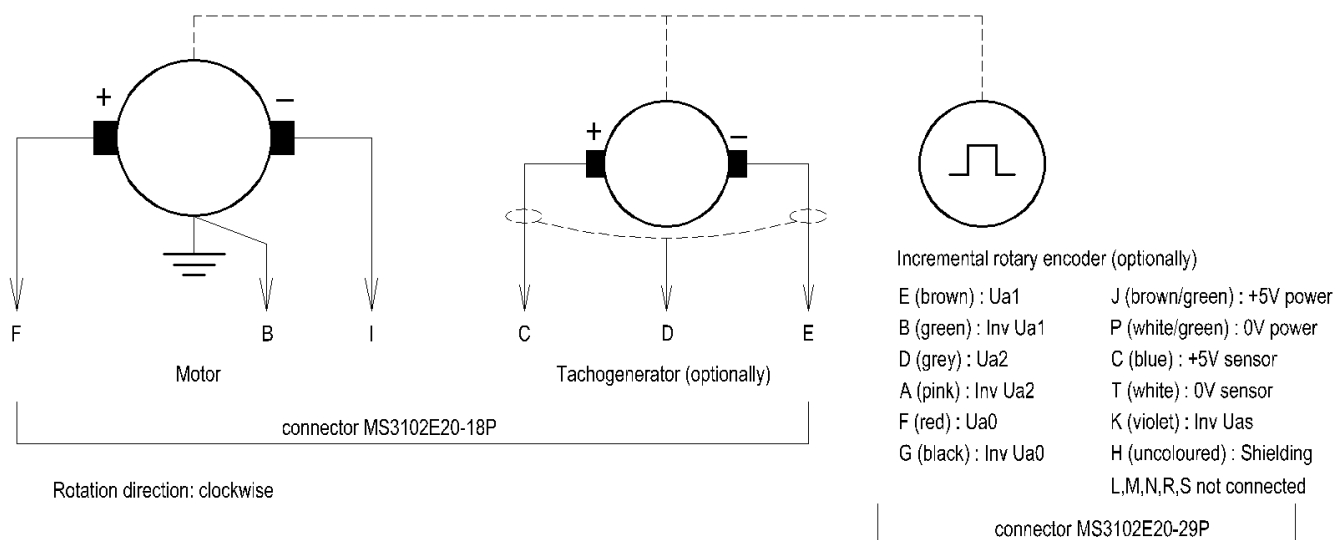
4.1. Tachogenerator. It provides a DC voltage proportionally with motor speed. Technical data are contained in below table.

Nomination	Abrev.	Unit	Value	Remark
Voltage coefficient	K_e	$V/1000\text{min}^{-1}$	10	No-load conditions
Linearity error		%	$\leq 0,15$	
Reversing error		%	$\leq 0,4$	
Voltage wave		%	$\leq 0,6$	
Nominal current	I_n	mA	1	
Max. current	I_{max}	mA	25	
Rotor resistance	R_a	Ω	85	
Loading resistance	R_L	$k\Omega$	10	

4.2. Incremental encoder (1500 or 2500 signals/revolution)

The encoder is attached to the motor shaft by a coupling element. Turning the shaft, two synus signals are generated by fotoelectrical scanning. These signals are then electronically transformed into two square signals U_{a1} and U_{a2} which are 90° shifted and their negations $\text{Inv}U_{a1}$ and $\text{Inv}U_{a2}$. A reference pulse and its negation is also generated U_{a0} and $\text{Inv}U_{a0}$.

5. Electrical connection of servomotor and feed-back devices





6. Safety instructions



The outer surface of the servomotor may exceed 100⁰C, therefore the touching may cause serious burning injuries!



The connection, putting into operation, reparation should be made by skilled personel, this way a safe and reliable operation can be reached and unnecessary costs are avoided.



Any connection must be made only under no-voltage conditions!



The metal frame must be always grounded thru the grounding pin of the connector.



It is strictly forbidden to touch the moving parts! Keep away your hand, fingers and any other part of your body from the turning motor parts.



In case of any deviation from the normal operation (higher current, temperature, vibration, unusual noises or smell), a specialist must be informed immediately. In unambiguous cases the servomotor must be switched off urgently.

Pulleys or couplings may be monted onto the shaft only with suitable tools. When pushing on, the shaft must be choked from the opposite drive end in order to prevent bearing damage.

7. Storage.

The servomotor has to be stored in a dry place. In case of a longer storage period the insulation resistance should be checked prior connection and the shaft should be protected against rusting.

8. Maintenance

After 2000 working hours the lenght of brushes should be checked. If needed all brushes must be replaced by new ones. The accumulated coal powder must be also eliminated from the servomotor.