

- ▶ Industrial design
- ▶ Width 22.5mm
- ▶ 1-phase control
- ▶ Reduced mechanical stress on drives
- ▶ Maintenance-free



▶ Technical data

▶ 1. Functions

Reducing mechanical stress on drives during the acceleration phase of motors

▶ 2. Time ranges

Acceleration time	Adjustment range	0s	20s
Retardation time		-	-

▶ 3. Indicators

Green LED ON:	indication of supply voltage
Yellow LED ON:	indication of max. output voltage

▶ 4. Mechanical design

elf-extinguishing plastic housing, IP rating IP40
 Mounted on DIN-Rail TS 35 according to EN 50022
 Mounting position: any
 Shockproof terminal connection according to VBG 4 (PZ1 required), IP rating IP20
 Terminal capacity:
 1 x 0.5 to 2.5mm² with/without multicore cable end
 2 x 0.5 to 1.0mm² with/without multicore cable end

▶ 5. Input circuit

Supply voltage:	internally generated
Duration of operation:	100%

▶ 6. Power circuit

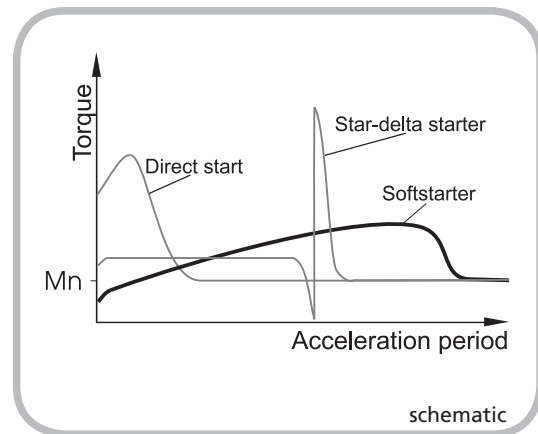
Supply voltage:	
3~230V	terminals L1-L2-L3 (TSG 2,2-230VAC)
3~400V	terminals L1-L2-L3 (TSG 2,2-400VAC)
Tolerance:	±20%
Rated frequency:	50 to 60Hz
Starting torque:	0% to 100%
Starting current:	max. 16A
Start-up cycles:	max. 30/h at medium load
Impulse series relay:	internal
Load:	max. 1.3kW (TSG 2,2-230VAC)
	max. 2.2kW (TSG 2,2-400VAC)
Surge voltage:	2.5kV (according to IEC 60947-1 and DINVDE 0110 Teil1)
Insulation voltage:	345/600V (according to IEC60947-1, 4.3.1.2)

▶ 7. Ambient conditions

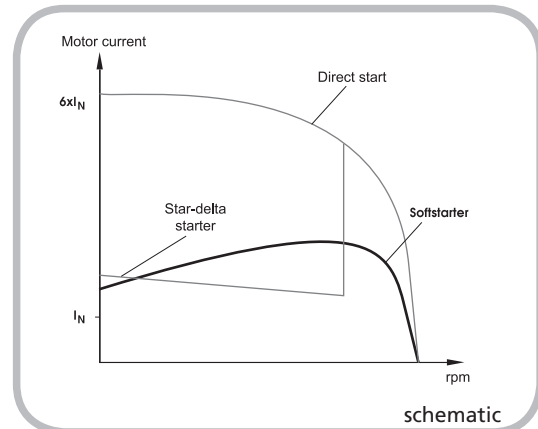
Ambient conditions:	-20 to +45°C (according to IEC 68-1)
Storage temperature:	-10 to +70°C
Transport temperature:	-10 to +70°C
Relative humidity:	5% to 95% not condensing
Pollution degree:	2 (according to EN 60947-1 and DINVDE 0110, Part 1, 4.2)

▶ Advantages of softstarters

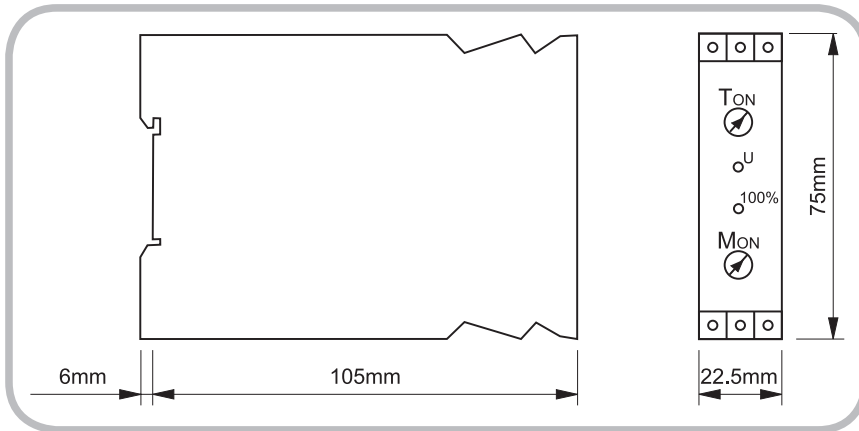
Reduced starting torque



Reduced starting current



Dimensions



Functions

Controllable softstart of a motor

The softstarters of the TSG series have been designed for asynchronous machines with squirrel-cage rotors to counter the disadvantage of these units, namely the high startup current and the associated jerky startup of the motor.

The ramped increase of the motor voltage is achieved with phase control in one phase. Control over acceleration is performed by a special processor.

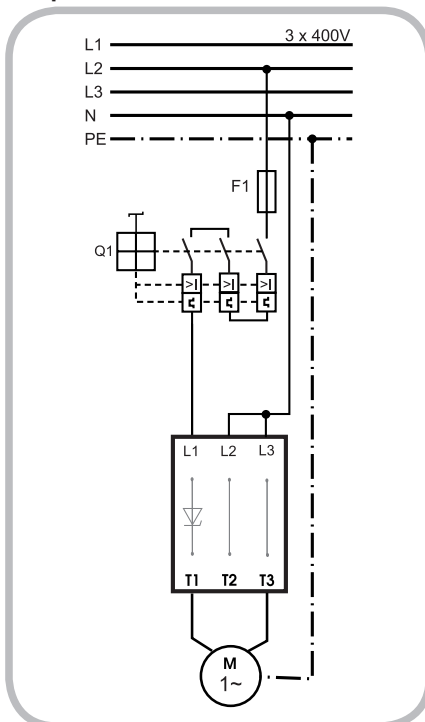
When the supply voltage is applied, the TSG increases the stator voltage of this phase linearly over the entire interval of the acceleration time (T_{ON}) to full control voltage. The two other phases are connected directly to the mains. The time for this voltage ramp can be set on the T_{ON} controller to any value from 0 to 20 seconds. As the voltage increases, so too does the torque, just rising above the load moment. The motor therefore starts

with slow acceleration.

By specifying a motor-specific startup moment the voltage (torque) increases rapidly when the softstarter is activated, until the startup torque set on the M_{ON} controller is reached. Only then does the voltage start increasing slowly for the remaining acceleration time until full system voltage is reached. In this way, more effective use is made of the startup time and wear and tear is kept to a minimum.

Connections

1-phase connection



3-phase connection

