Solenoid plug with economy circuit
Type MSD 4 P53 for 230 VAC and MSD 4 P63 for 115 VAC

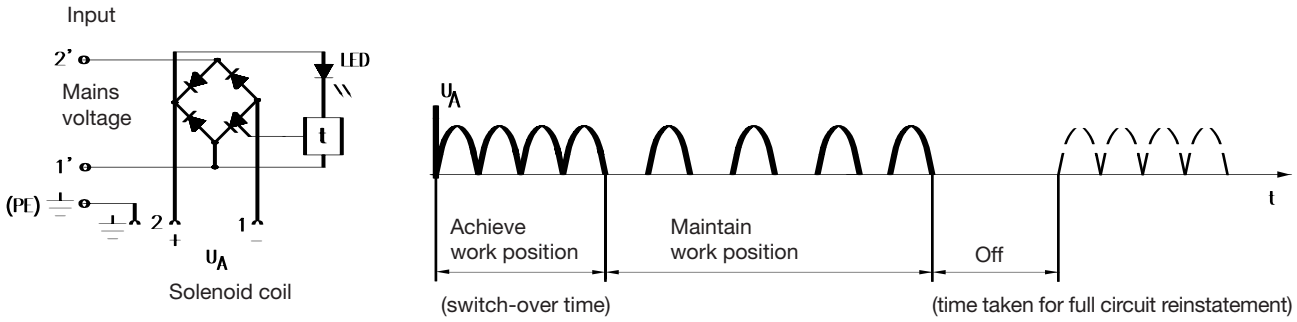
for directional valves with single lift solenoid actuation WG 220 and WG 110

1. General

As a rule, the power of a solenoid when in its working position is considerably higher than the power necessary to hold the valve continuesly in its position. By means of what is known as economy circuit it is possible the final power of the solenoid to be reduced by reducing the voltage applied. As the heat of a solenoid rises by the square of the voltage applied, it is possible to achieve a reduction in the excess temperature of the coil and consequently a considerable lengthening of the life of the solenoid coil. For these reasons, if the solenoid remains energized permanently with only short breaks, or in general where used at high ambient temperatures it can be reasonable to use the economy circuit not required for ordinary occasions of use.This also applies where at directional valve banks, valves which are directly one behind the other are in operation simulteneously and for long periods of time. In general, due to the low final temperature, increased security is achieved during switching procedures with the hydraulic limit factors Q_{max} and p_{max}.

2. Description of operation

The full-bridge rectifier circuit, occurring when connection is made is reduced after a certain time to half-bridge, with the valve then continuing to be supplied with only half voltage. When the circuit is live, this is indicated by a red LED.



3. Specification

3.1 General features

Type designation	Economy circuit type MSD 4 P 53 for 230 VAC Economy circuit type MSD 4 P 63 for 115 VAC
Nomenclature	Solenoid socket with economy circuit for 230 VAC Solenoid socket with economy circuit for 115 VAC
Delivery conditions	see sect. 4
Connection requirements	acc. to EN 175 301-803 A, 2-pole + PE
Cable input connecting	Pg 9 for external insulation diameter 4 ... 8 mm
Cables	Recommended cross section max. 3 x 1 mm^2
Protection category IEC 60529	IP 65 when properly assembled and fixed Attention: Enclosed seal must always be used when mounting the solenoid plug
Protection class	I
Installed position	Any

Attention: The solenoid plug cannot be used for double or reverse lift solenoids type MD and MU acc. to D 7055, acc. to D 6460 and twin solenoids acc. to D 7785 A.

3.2 Electrical features

Input voltage (AC):	
Mains voltage U_{mains}	**MSD 4 P53** 200 ... 250 VAC **MSD 4 P63** 98 ... 130 VAC
Mains frequency f	50 ÷ 60 Hz
Ambient temperature range ϑ_{13}	0° ... + 40°C
Output voltage (DC):	
Initial voltage	0.89 x U_{mains}
Reduced voltage	0.45 x U_{mains}
Output current (DC):	
Initial current	max. 1 A
Reduced current	max. 0.6 A
Switch-over time [1]	0.5 ... 7 s (higher figure when in cold condition, lower figure in hot condition)
Restoration time [2]	approx. 0.4 ... 0.8 s

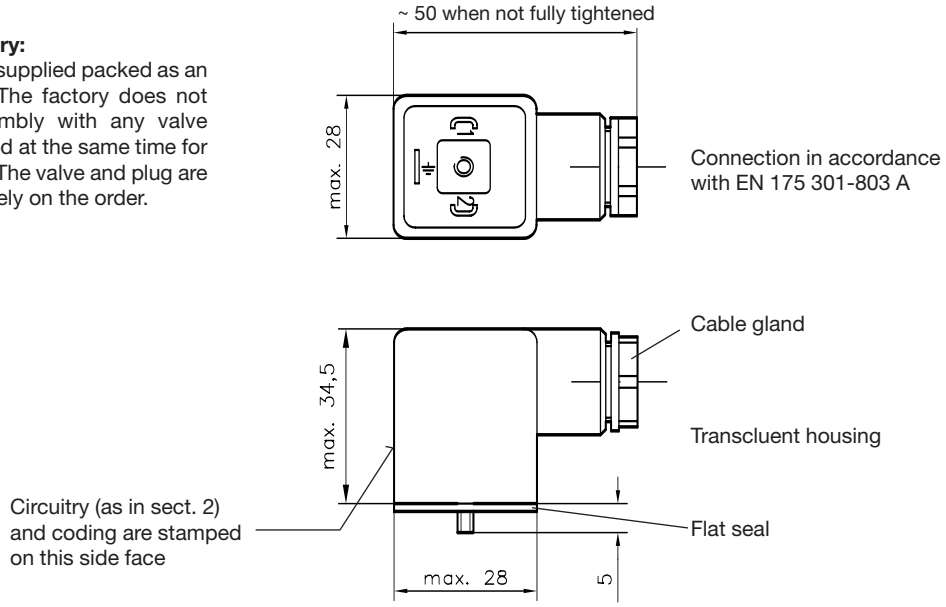
[1] Switch-over time is the time from start on until the voltage is reduced.

[2] Restoration time is the time necessary to restore the electronic system without current supply from the restricted state to the original condition.

4. Dimensions

All dimensions are in mm, subject to change without notice!

Condition for delivery:
The solenoid plug is supplied packed as an individual element. The factory does not undertake pre-assembly with any valve which may be ordered at the same time for which it is intended. The valve and plug are to be shown separately on the order.



5. Fitting instructions

When connecting cables care should be taken that the three wires are routed awery from the PTC resistance (blue component) which is hot when in operation. For practical purposes this condition is met if the alignment of the socket insert, as found when delivered, is retained (see sect. 4).

Attention: Always fit with the seal supplied.