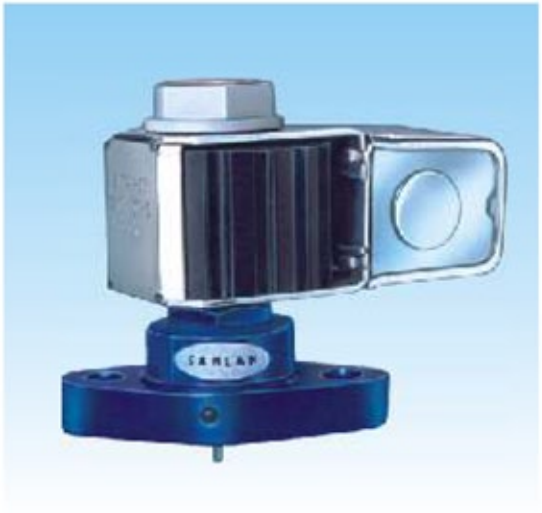
Capacity Control Solenoid Valve Type SVRF-3W



INTRODUCTION

'SANLAN' Solenoid Valve Type SVRF-3W is a specially designed 3-way capacity control solenoid valve for compressor. It is applicable for working media of fluorinated refrigerants.

TECHNICAL INFORMATION

The valve SVRF-3W has three ports, at the base of the valve body. These are IN, UNL and SUCTION ports respectively. (Refer figure 1.)

1. IN - This is normally closed port located at the central position of the valve body base. High-pressure gas from the discharge line is let in through this port, when the solenoid valve is energized.

2. UNL - UNL is the common port provided with a guide split pin for identification. High pressure or low-pressure refrigerant gas from the discharge or suction side of the compressor is given below the unloader piston through this port depending upon the solenoid valve condition.

3. SUCTION - This is normally open port connected to low-pressure suction side.

SPECIFICATIONS

Standard Coil Ratings: - 17.5W molded coil type SVRA-GP with cable connection. Coil can be supplied with a wide choice for a.c. or d.c.

Maximum Opening Pressure Differential MOPD: - 25bar/350psig.

Safe Working Pressure SWP: - 28bar/400psig.

Net Weight: - 1.2 kg.

PRINCIPLES OF OPERATION

Loading the cylinders one by one as required, increase compressor capacity. Similarly, unloading one or more cylinders, as and when required, can reduce the compressor capacity. Externally mounted solenoid valves, controlled by a signal from a remote device provide reliable response to system load.

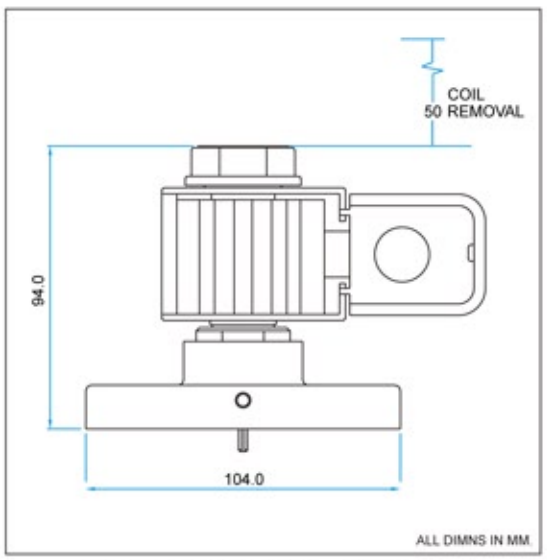
In one of the methods for loading and unloading the cylinders, high pressure and low pressure refrigerant gas from the discharge or suction side of the compressor is used to actuate the unloader piston mechanism. An internal passage from suction and discharge chamber is connected to an internal passage in the compressor solenoid valve plate. Capacity control solenoid valves SVRF-3W are mounted on this plate.

During energized condition of the solenoid valve SVRF-3W; high-pressure gas is fed below the unloader piston, moving it up against unloader spring pressure plus the suction pressure (top portion of the piston is exposed to suction pressure). The unloader piston moves up, sealing the suction port seat. This allows the compression to take place and the cylinder gets loaded.

During the de-energized state, low-pressure gas from the suction side is admitted below the unloader piston. Since the top portion of this piston also is exposed to low pressure, the unloader spring pushes the piston away from the seat, thus unloading the cylinder.

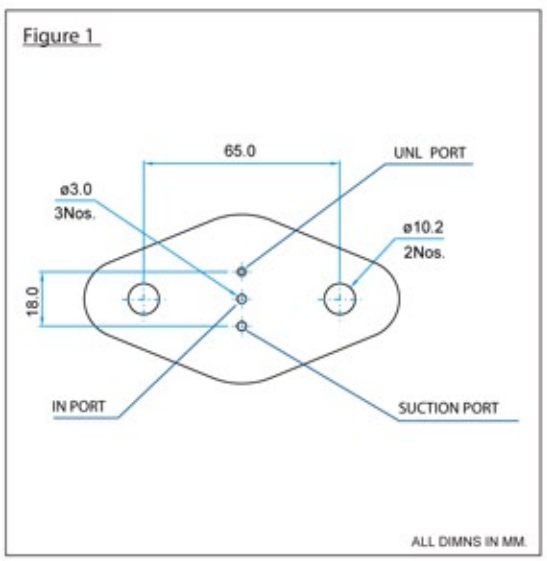
Thus, solenoid valve type SVRF-3W is energized to load the compressor and de-energized to unload the compressor.

IMPORTANT - As it is recommended to start the compressor in unloaded condition, the solenoid valve type SVRF-3W should be energized only after the compressor motor is switched from star to delta connection, and should be wired accordingly.



TOTAL VALVE ASSEMBLY SVRF-3W

Figure 1



SANLAN CONTROLS

475 - B, Shukrawar Peth, Subhash Nagar, Lane No. 1, Pune - 411 002 (Maharashtra) India.
Ph. : 91-020-24421400, 24493671, 24475851 **Email** : contact@sanlancontrols.com
Web : www.sanlancontrols.com