Pilot-operated Control Valve

MANKENBERG

CrNiMo stainless steel (316) deep drawn, corrosion-resistant, light-weight and compact
long operational lifespan, easy installation 1

a wide variety of connection types
no adapters or fitting pieces required 2

standard body surface
RA ≤ 1,6 µm
easy-to-clean 3

pilot valve control
precise regulation also with large volume flows 4

Special Feature

large control surface
allows to regulate the set pressures up to 0.002 bar 5

Options

various elastomers
can be adapted to different media

various body materials
can be adapted to different media

Pilot-operated Millibar Control Valve RP 840

Mankenberg Pilot-operated Control Valves in Action

MANKENBERG

Pilot-operated Millibar Control Valve — RP 840

pilot-operated pressure reducing valves consisting of a main valve for large flow rates, combined with a High Grade millibar valve acting as pilot valve | available as prefabricated unit in a rack

DN	25 - 150	PN	16
		T	130 °C
P_2	0.002 - 0.52 bar	K_{VS}	4 - 160 m^3/h

HIGH GRADE

Explosion Protection for Tanks containing Nitric Acid

Tank farms are complex installations where a large number of products with various chemical and physical properties is stored. Therefore, proper storage of the product in consideration of all technical possibilities is of particular importance in order to protect the plant itself, the environment and the operating personnel from damage.

In the port of Antwerp a Dutch company operates an area of large tanks with capacities of up to 8,300 m^3. Ships are loaded and unloaded at seven berths. In addition, a railway connection and load/unload sites for road tankers, tank containers and flexitanks are available. Amongst others, mineral oils, biofuels and oils and grease are stored in the tanks, but also hazardous chemicals such as nitric acid. It is a mineral acid used for example for the production of fertilizers, colouring agents and explosive material. In high concentrations it accelerates ignition and has strong oxidising properties. It can cause severe burns on living tissues.

Tank blanketing with inert nitrogen ensures the safe storage of the nitric acid. Air is prevented from getting into the tank because a slight overpressure is permanently maintained with the aid of the nitrogen gas cushion. Furthermore, no nitrous gases, which may form by the decomposition of nitric acid, can escape from the tank. A pilot-operated pressure reducing valve RP 840 is used for tank blanketing. In this valve a millibar reducing valve as pilot valve controls a main valve adapted to the plant. Thanks to the large diaphragm of the pilot valve, very small pressures can be pre-set, thus combining high control accuracy at very small pressures with the volume flow required for big tanks and pumps. If the pressure within the tank falls below 0.014 bar, the valve opens and continues to supply nitrogen until the control limit has been reached. The self-acting pressure reducing valve is made from deep-drawn stainless steel with excellent corrosion resistance. This is of particular importance for its intended use in the highly corrosive atmosphere of the tank.