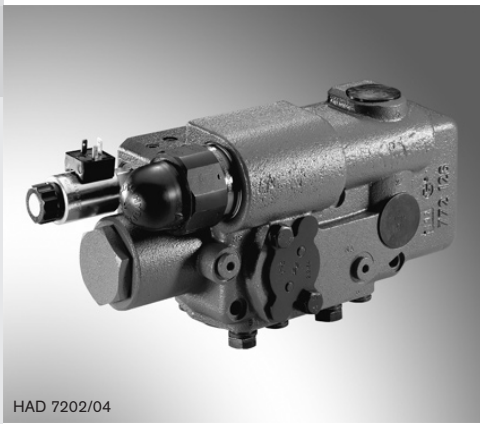
Rexroth
Bosch Group

# Stabilising module

**RE 64618/05.04** 1/4

## Type RSM2

Nominal size 25
Component series 2X
Maximum operating pressure:
• Actuator connections A, B 420 bar
• Accumulator connections X1, X2 350 bar
Nominal flow 300 L/min



HAD 7202/04

## Overview of contents



## Features

The RSM2 stabilising module reduces pitching movements on wheeled vehicles that effect the vehicle and driver. For this the lifting line is connected to the hydro-pneumatic accumulator, via a switching valve, that absorbs the loads caused by the pitching movements.

**Applications:**

– Wheeled loaders
– Telescopic handlers

**The following advantages apply when the RSM2 system is fitted:**

– Higher transport speeds
– Higher handling rates
– Stable steering characteristics
– Shorter braking distances
– Higher comfort for the driver
– Lower mechanical loading of the entire machine
– Fewer repairs or down times with identical handling times

## Ordering details

| RSM2 – 25 | B | 2X / | | G24 | | V | 11 | * |
|---|---|---|---|---|---|---|---|---|

Stabilising module

Nominal size 25 = **25**

**Design**

Block design = **B**

Component series 20 to 29 = **2X**
(20 to 29: unchanged installation and connection dimensions)

**Accumulator pressure limitation**

Without accumulator pressure limitation = **A000**

With accumulator pressure limitation, pressure details in bar = **A . . .**

**Pressure limitation**

Pressure limitation 90 bar = **B090**

Pressure limitation 120 bar = **B120**

Pressure limitation 160 bar = **B160**

Further details in clear text

**Connections**

**11 =** SAE flange

**V =** FKM seals

**Electrical connection**

**C4 =** Plug, 2-pin, Junior Timer

**K42L =** Plug, 2-pin, Junior Timer, and diode P6KE47CA (24 V)

**Supply voltage**

**G24 =** 24 V DC

## Function, circuit

**Design**

The stabilising module basically comprises of a housing into which are built:

- Valve spool (2)
- 3/2-way directional valve, solenoid operated (3)
- Pressure relief valve (EC design tested) (4)
- Emergency drain screw (5)

**Function**

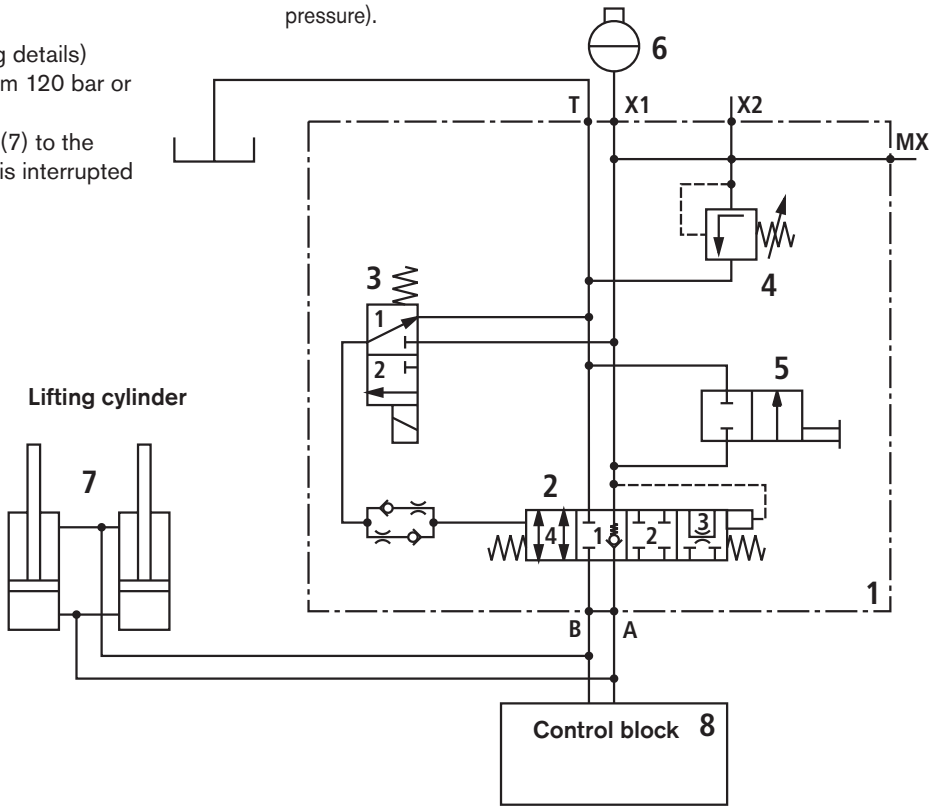
If the lifting cylinder (7) has pressure applied to the piston side, then the pressure is also applied to the check valve in the valve spool (2) and the accumulator (6).

Dependent on the design (see ordering details)
...**B090** –> from 90 bar, ...**B120** –> from 120 bar or
...**B160** –> from 160 bar
the connection from the lifting cylinder (7) to the accumulator (6) via the valve spool (2) is interrupted (switched position 2).

A pressure reducing function for the accumulator (6) is integrated in the valve spool (2) (switched position 3). The opening pressure lies approx. 30 bar higher than the switch off pressure (switched position 2).

The damping valve can be automatically activated via the travel speed. The 3/2-way directional valve (3) is switched into the switched position 2. The valve spool (2) is switched to the switched position 4 and connects the piston side of the lifting cylinder (7) with the accumulator (6) as well as the rod side of the lifting cylinder (7) with the reservoir.

The pressure relief valve (4) prevents unpermissible high pressures in the accumulator (opening pressure < permissible accumulator pressure).



## Parking the vehicle, maintenance and service work

Via the emergency drain screw (5) (shown in the circuit as a mechanically operated 2/2-way directional valve) it is possible to unload the accumulator so that the above mentioned work can be carried out.

⚠ **Attention:**
The safety technical requirements of the vehicle have to be taken into account!

The lifting system must firstly be secured against lowering.

## Regularity requirements and safety guidelines

Accumulators are required for the RSM2 stabilisation system. If, due to the operation situation of the machine, the danger exsists that the accumulator's permissible pressure limit can be exceeded, then a pressure relief valve has to be fitted. For this system regularity requirements and those from the authorities have to be complied with.

The RSM2 is fitted with a design tested pressure relief valve which complies with the pressure component directive 97/23/EC.

If a RSM2 is ordered without a pressure relief valve (example: RSM2-25 B2X/A000...), Rexroth assumes that the appropriate pressure safety function has been foreseen by the vehicle manufacturer or that accumulator pressure overloads are prevented in a different manner within the vehicle's design.

In addition for the vehicle other national and international regulations may apply.

The entire responsibility lies with the vehicle manufacturer.

## Installation guidelines

- The number of accumulators is dependent on the lifting cylinder size. Accumulators have to be ordered separately.
- The pressure relief setting (safety valve for the pressure vessel) **must** be lower than the permissible accumulator.

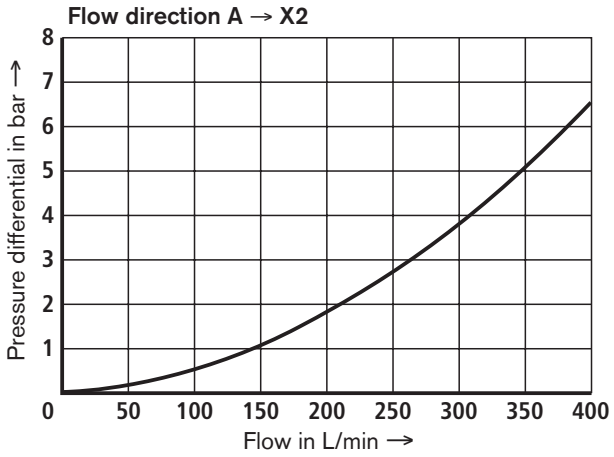
⚠ **Attention:**

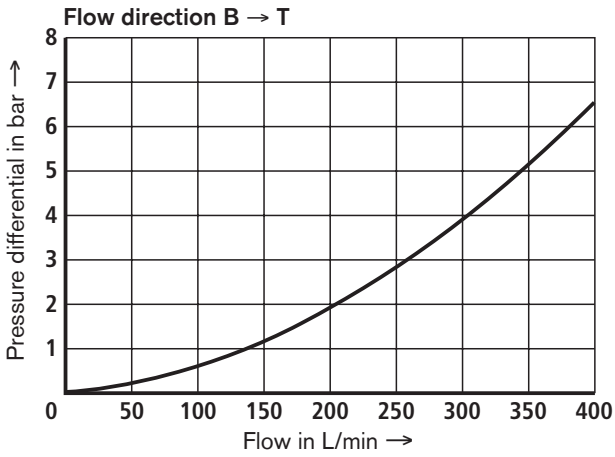
- Before carrying out any maintenance work the accumulators must be unloaded (zero pressure).
- For this, unscrew the plug then rotate the valve spindle, located under the plug (3A/F), 2 turns anti-clockwise.
- The lifting system must firstly be secured against lowering.

## **Technical data** (for application outside these parameters, please consult us!)

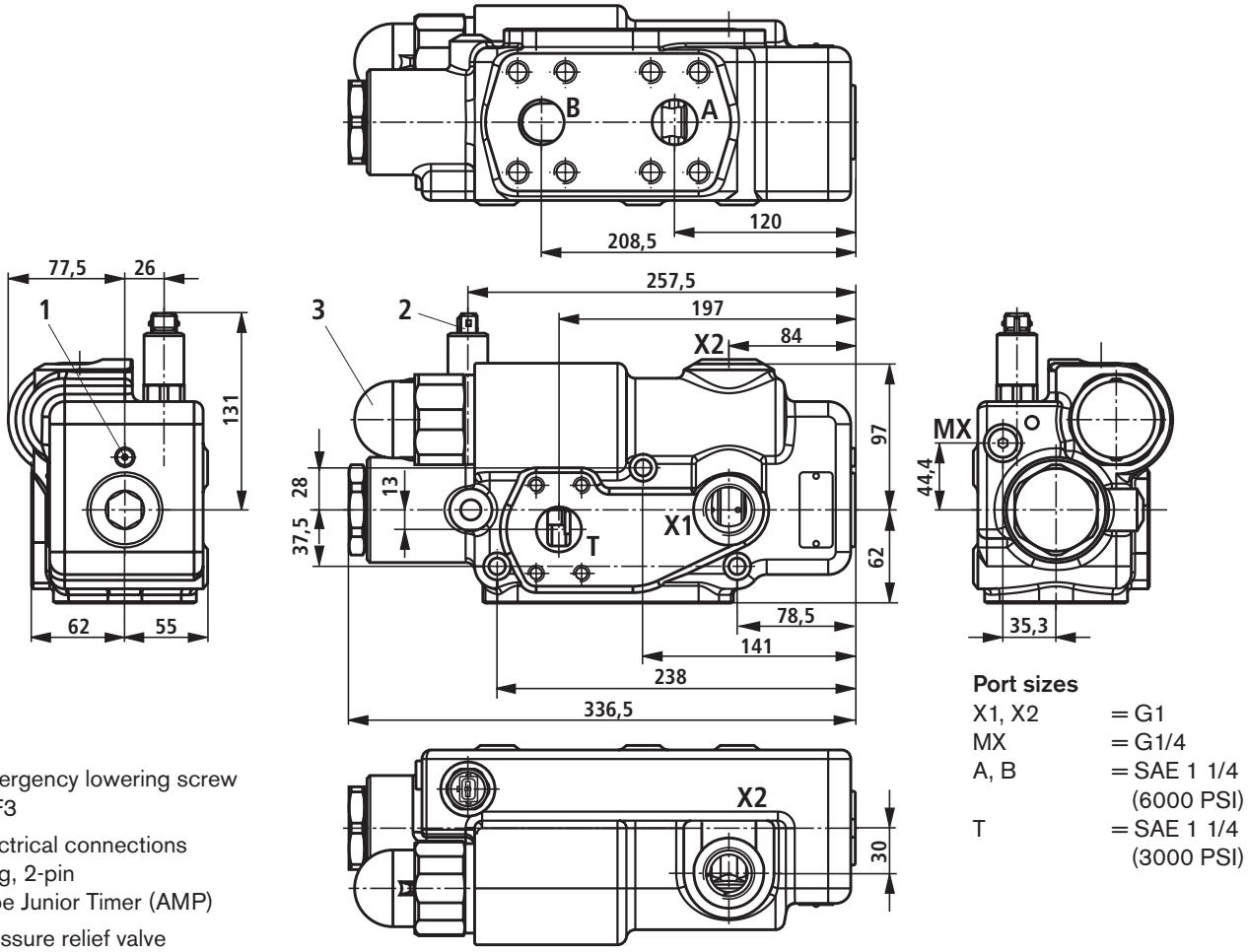
| | | | |
|---|---|---|---|
| **General** | | | |
| Installation | | | Optional |
| Ambient temperature range | | °C | – 20 … + 80 |
| Weight | | kg | 27.5 |
| **Hydraulic** | | | |
| Operating pressure | Ports A, B | bar | 420 |
| | Port X | bar | 350 |
| | Port T | bar | 30 |
| Max. nominal flow | Ports A, X | L/min | 300 |
| Pressure fluid | | | Mineral oil (HL, HLP) to DIN 51 524;<br>Other pressure fluids on request! |
| Pressure fluid temperature range | | °C | – 20 … + 80 |
| Viscosity range | | $mm^2/s$ | 10 … 380 |
| Degree of contamination (max. permissible) | | | ISO 4406 (c) class 20/18/15 |
| **Electrical** | | | |
| Control voltage | | V | 24 |
| Power consumption (solenoid) | | W | 14.4 |

## **Characteristic curves** (measured with HLP68, $\vartheta_{oil} = 40\ °C \pm 5\ °C$)




## **Unit dimensions** (in mm)




**1** Emergency lowering screw A/F3

**2** Electrical connections
Plug, 2-pin
Type Junior Timer (AMP)

**3** Pressure relief valve

**Port sizes**

| | |
|---|---|
| X1, X2 | = G1 |
| MX | = G1/4 |
| A, B | = SAE 1 1/4 (6000 PSI) |
| T | = SAE 1 1/4 (3000 PSI) |

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