TAPESWITCH CONTROL UNIT TYPE SRUS INSTALLATION INSTRUCTIONS

1. INTRODUCTION

The SRUS control unit is designed to work in conjunction with the Guardscan range of light curtains. The SRUS provides output relays, reset and external device monitoring functions for GS 120 and GS140 light cu rtains. Information about the installation of safety systems is provided with the light curtain.

2. PRODUCT DESCRIPTION

The SRUS must be connected to a 24Vdc supply. The housing incorporates cage-clamp connections and can be mounted on DIN rail. The equipment must be mounted in a control cabinet which has at least IP54 protection.

3. RESET MODES

The unit is equipped with automatic and manual reset.
The manual mode gives Start and Restart functions as follows:

START Interlock – When the supply is connected to the unit the output contacts will not close until a reset signal is reconnected.

RESTART Interlock– When the protection field is obstructed and the output contacts open they can only close again when the obstruction is cleared and a reset signal is reconnected.

It is absolutely essential that a Start/Restart interlock is incorporated in the safety system of the machine. This interlock could be carried out by equipment other than the light curtain and be already integrated into the machine control circuit. In this case it may be necessary to use the SRUS in automatic reset mode.

In the automatic reset mode the outputs will be closed whenever a supply is connected to the unit and the protection field is clear.

In both automatic and manual reset modes the Start/Restart function is prevented when the protection field is obstructed, when a fault exists in the reset circuit and when the output relays are in different states.

The safety contacts of the SRUS control unit must be interfaced to the Machine Primary Control Element (MPCE) so that if one output contact of the SRUS is no longer closed the machine comes to standstill irrespective of the state of the other contact of the SRUS.

Please note: The Machine Primary Control Element is defined as the electrically powered element that directly controls the normal operation of the machine in such a way that it is the last element (in time) to function when machine operation is to initiated or arrested.

If the machine has two of these MPCEs they can be monitored by connecting normally-closed contacts of each in series with the reset input. Disparity between the two will prevent the reset function.

4. INSTALLATION

WARNING

Tapeswitch safety systems are intended for the protection of persons at or near dangerous machinery. They can only do this when they are correctly installed on a suitable machine. Persons responsible for the product must therefore ensure that everyone involved in the installation, commissioning, operation, service and repair of the product has access to information from the machine manufacturer and about the safety system.

4.1 MECHANICAL INSTALLATION

4.1.1. GENERAL

The SRUS control unit should be mounted in a control cabinet on a rail conforming to EN 50022-35. The control cabinet must have IP54 protection according to IEC60529. The dimensions of the SRUS unit are shown in Fig 1.

Mechanical vibration greater than 5G/33Hz should be avoided during transportation and operation.

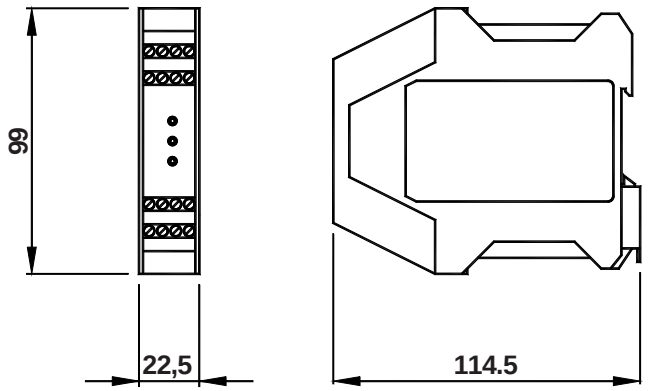


Figure 1

4.1.2. RESET INPUT

A normally-open switch, such as a 22mm industrial push button, should be used to provide the reset input. The push button should be fitted in a suitable housing and mounted so that it is protected from external damage. Also take care that any person operating the push button can monitor the whole of the danger area.

4.2 ELECTRICAL INSTALLATION

4.2.1. GENERAL

The outputs of the SRUS are described in section 6.

We recommend that ferrules are used on the end of wires. The exact details of the wiring are in the hands of the installer and are largely independent of the layout of the various system components. However, we strongly recommend that high-power and low-power cables are kept separate.

4.2.2. CONNECTING TO THE LIGHT CURTAIN

Connect the fail-safe PNP outputs 4 & 5 of the GS120 or GS140 Series light curtain (yellow and grey wires) to terminals S12 & S22 (see section 6).

4.2.3. CONNECTING THE SUPPLY

Connect +24Vdc to terminal A1 (+) and 0V to terminal A2 (-) (see section 6). The power requirement is approx 2.5VA.

4.2.4. CONNECTING THE RESET CIRCUIT

For Auto reset, terminal Y1 must be connected to Y2 and terminal BR1 must be connected to BR2. External device monitoring can be connected in series with the Y1/Y2 connection

For manual reset, a normally-open push button should be connected between terminals Y1 and Y2. External device monitoring can be connected in series with this switch. BR1 must not be connected to BR2.

5. TECHNICAL SPECIFICATION

Supply voltage	**24Vdc (with electronic fuse)**
Power requirement	**Approx 2.5VA**
Response time	**10ms**
Temp. range	**-25°c to +55°c**
Contact configuration	**3 x normally-open safety outputs**
Contact type	**Force-guided**
Contact rating	**1500VA (resistive)**
Switching voltage	**250Vac 24vdc**
Max. current	**6A**
Safety standard	**EN13849 Performance Level PLd** **PFHd = 7.77 x 10^{-8}**
Housing protection	**According to DIN VDE 0470** **Part 1, IP40**
Cable connection	**2 x 2.5mm²** **DIN VDE 0295** **2 x 1.0mm² with ferrule** **DIN VDE 46228**
Shock resistance	**5G 33Hz**

Table 1

6. CONNECTION DIAGRAM

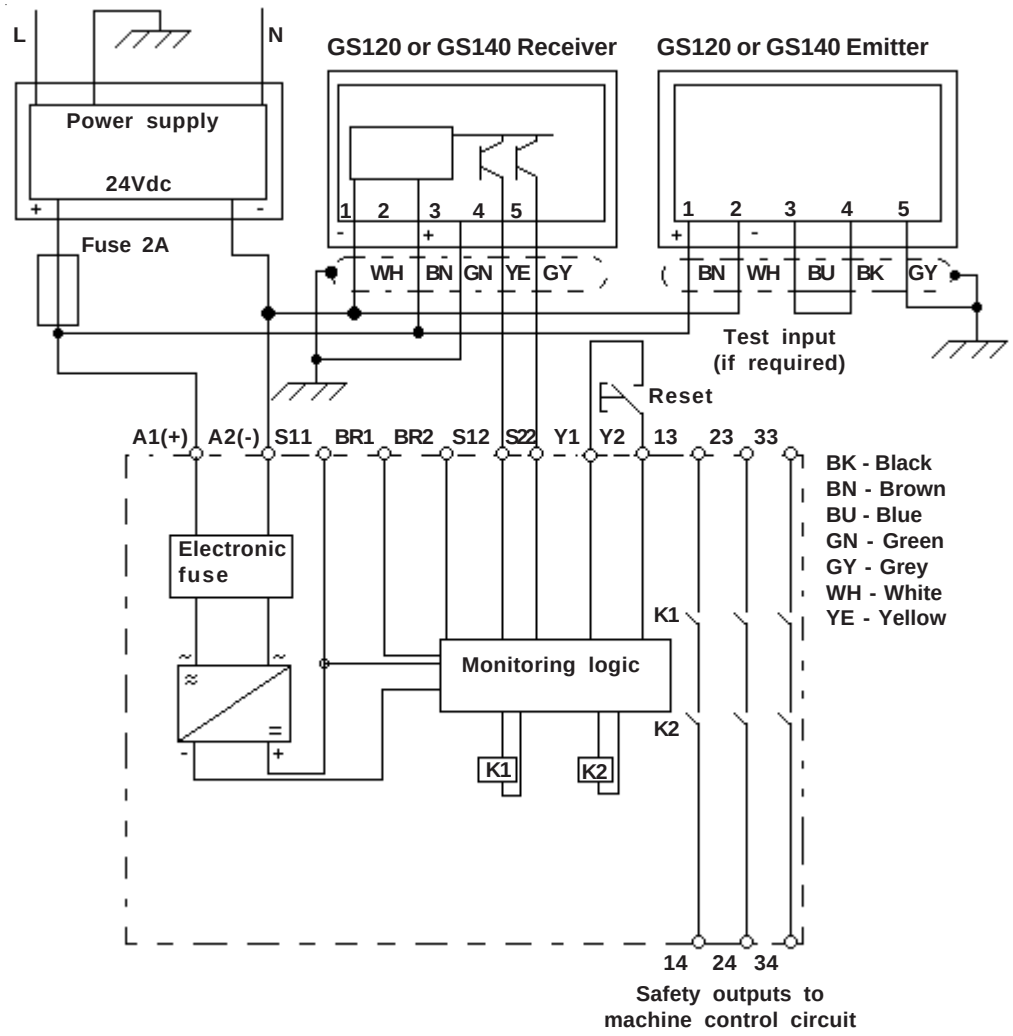
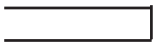
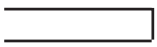
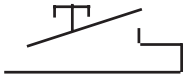


Figure 2

A1		**(+) Supply**
A2		**(-) Supply**
S12		**Light curtain ouptut 1**
S22		**Light curtain output 2**
BR1		**Bridge for Auto Reset**
BR2		**Otherwise no connection**
Y1		**Bridge for Auto Reset**
Y2		
Y1		**Reset push button**
Y2		
13		**Normally open**
14		
23		**Normally open**
24		
33		**Normally open**
34		

Note

In order to use the SRUS with the GS120 light curtain, the GS120 must be configured for Auto-Reset.