D8400 Automatic Rising Kerb

O & M Manual

Important safety notice: Only competent/skilled persons should carry out procedures detailed in this manual.

Safety Notice

Automatic rising kerbs are designed to control the flow of motor vehicles and motorcyclists. It is dangerous to permit pedestrians, cyclists and equestrians to pass and travel through the barrier when it is in motion.

It is recommended that easy alternative routes are provided for non-vehicular traffic and that suitable warning and direction signs are placed on either side of the barrier.

Index

General Safety Standards

Before attempting to install and maintain the automatic rising kerb it is important that the following notes are read and understood. Competent and skilled persons should always carry out any work. Keep these instructions for future use.

Electrical wiring and adjustments must be carried out in compliance of current safety standards.

NOTE:-

The automatic rising kerb is essentially a robust barrier designed for entry/exit for motorised vehicles and is not designed for pedestrian use. Any other usage will be deemed improper and dangerous.

Employers have a responsibility under Section 2 of the health and safety at work act 1974 to ensure as is reasonably practicable the health and safety of employees and other persons who may be affected by work activities. The management of health and safety at work regulations 1999 further imposes a specific duty upon employers to carry out suitable and sufficient risk assessment of all risks to health and safety of employees and others. Therefore it is recommended a risk assessment be carried out by a competent person in accordance with regulations 3 (I) management of health and safety at work regulations 1999.

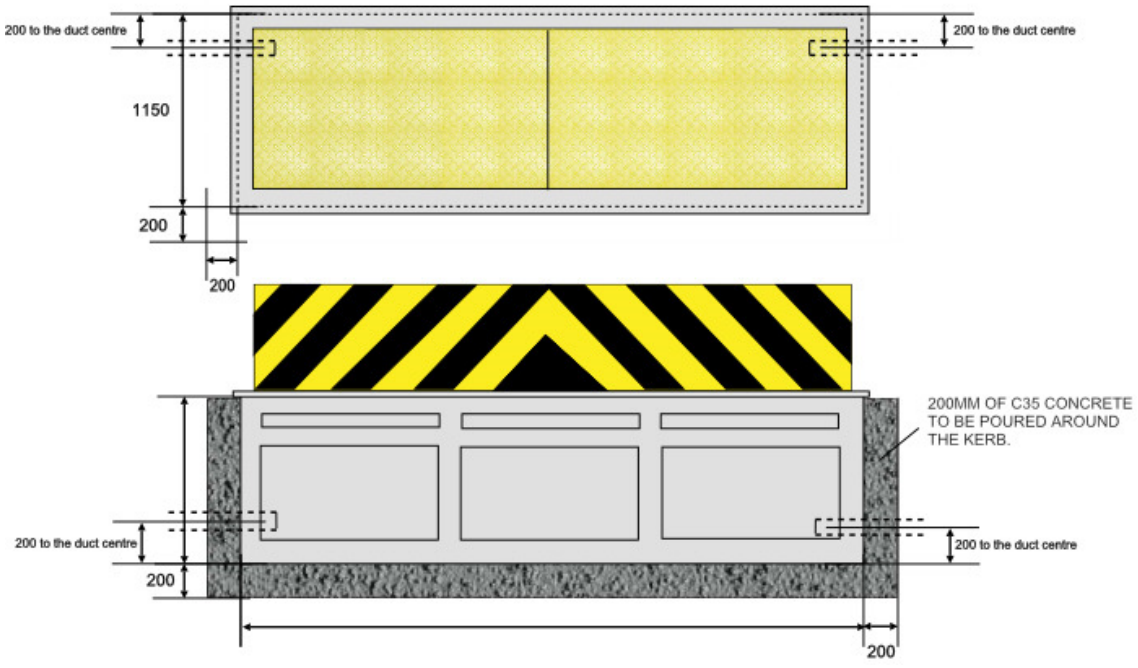
Transportation, handling and general layout

The following section describes how your equipment will be delivered to you.

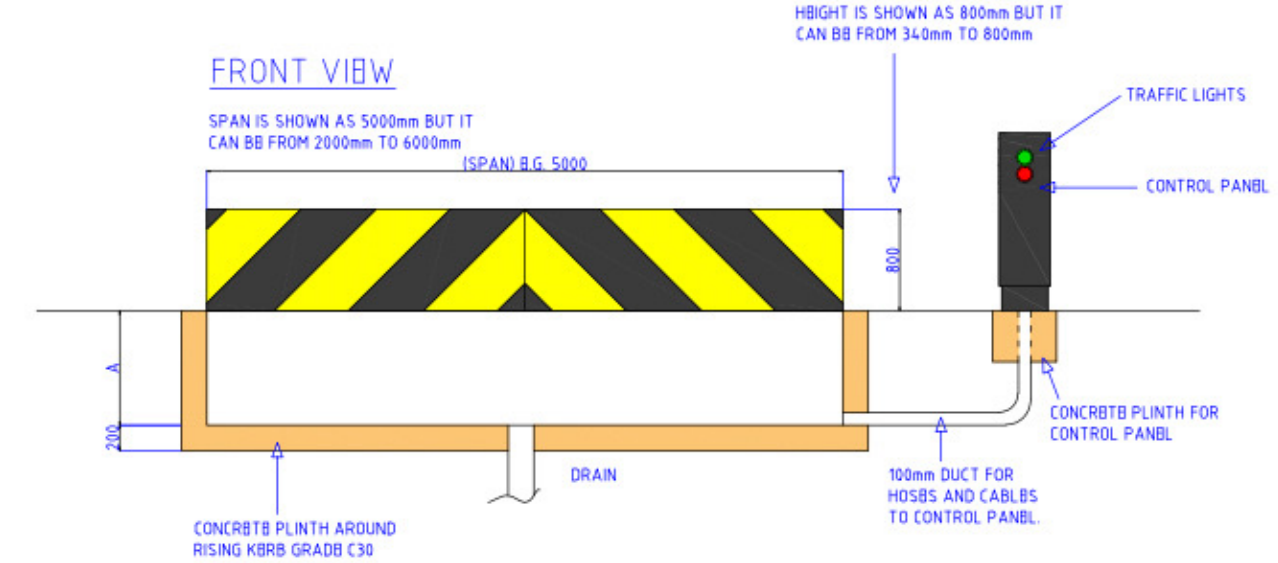
We will always use a qualified transport company to deliver the product conforming to the necessary regulations as detailed below:-

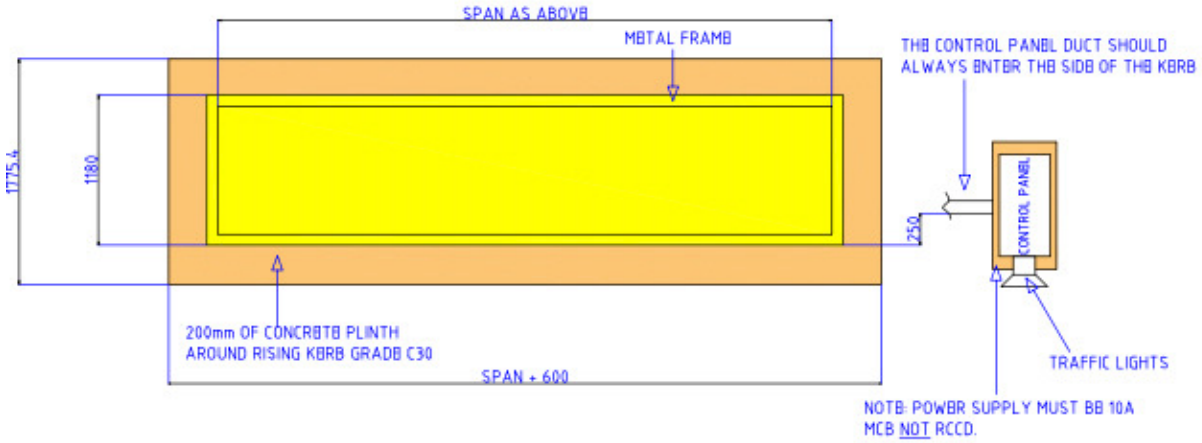
- All drivers are qualified hi-ab certified
- All drivers are tested once annually
- All drivers carry risk assessments and method statements (available on request)
- They are controlled under law to conform, as there are no trade regulation standards to comply with.

General layout



Installation Schematic





HEIGHT OF RISING KERB	HEIGHT OF DIMENSION A	
340mm HIGH	A	600mm
500mm HIGH	A	700mm
600mm HIGH	A	800mm
800mm HIGH	A	1000mm

Installation note

The pit for the rising kerb to be dug out fully prior to kerb being installed and a dry mix bed is recommended to lower the kerb onto, once in position the kerb is to be levelled and then concrete to be poured around the kerb to secure

Foundation for Control panel

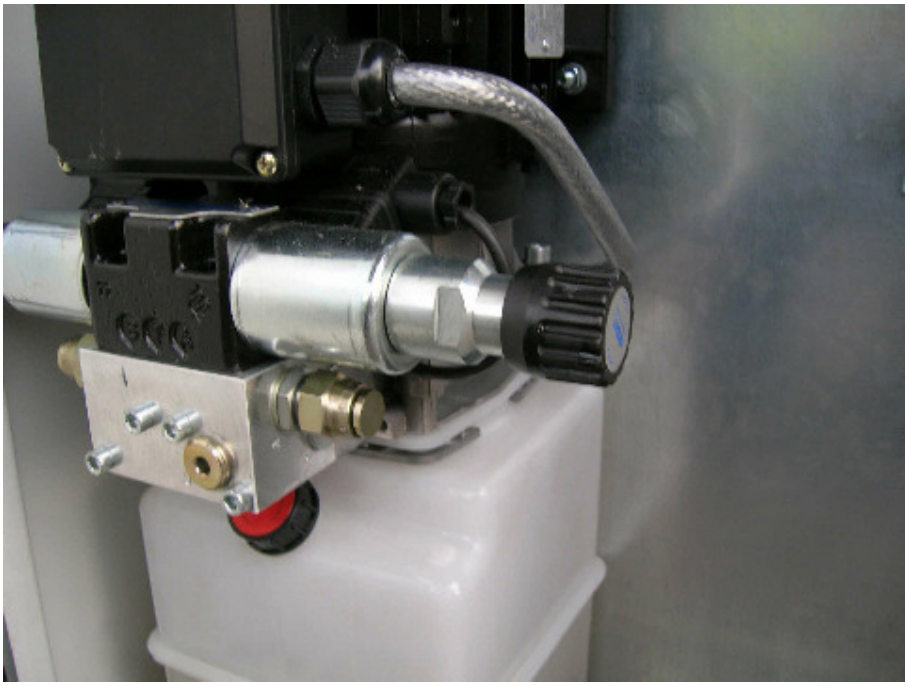
Concrete to be cast a minimum of 7 days before installation of panel.
Panel to be fixed down to concrete with self expanding bolts (Para bolts).
Holes to be drilled on installation.

IMPORTANT NOTICE

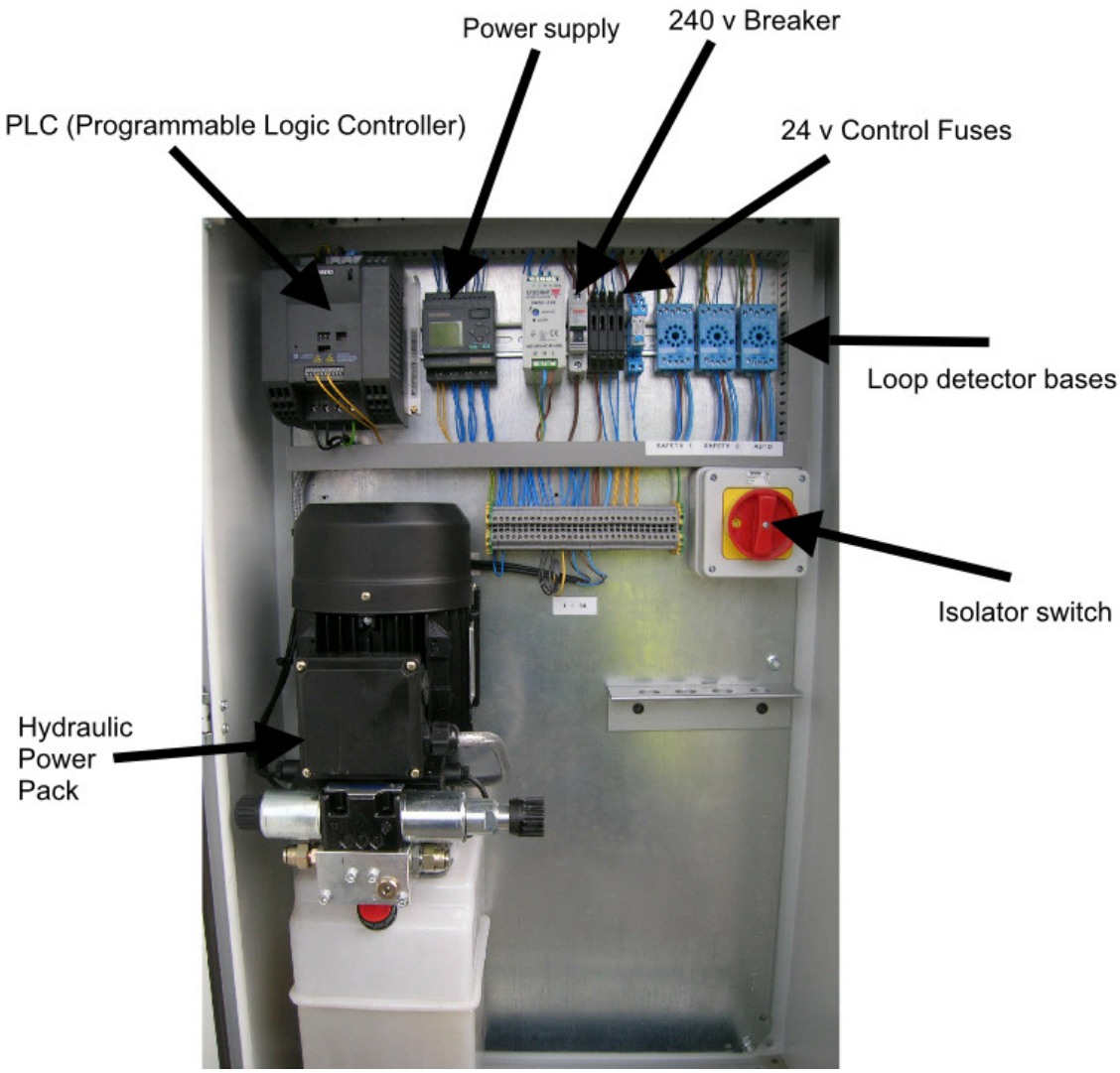
It is the clients responsibility to advise Ultimation Direct of any underground services, cables, pipes and ducts in the vicinity of any foundation prior to any work being carried out by Ultimation Direct.
Ultimation Direct reserve the right to suspend all civil work until all issues that interfere with the installation have been rectified.

Manual Release

To lower the kerb manually the black knob as shown in the picture below must be turned clockwise, until the kerb is fully lowered. The knob must then be turned back anti-clockwise as far as it will go, otherwise the kerb will remain inoperative even when the power is restored and/or fault is fixed.



Control Panel Layout



D8400 Connection diagram

Paragon Automotive

U - Motor
V - Motor
W - Motor
Earth to motor

1) Common 24VDC
2) Stop N/C
3) Lower N/O
4) Raise N/O
5) Common 24VDC
6) Lower Prox switch N/O
7) Raise Prox switch N/O
8) - 24VDC
9) + 24VDC — Lower Valve
10) - 24VDC — Lower Valve
11) + 24VDC — Raise Valve
12) - 24VDC — Raise Valve
13) + 24VDC Aux Supply
14) - 24VDC Aux Supply
15) Red Traffic light + 24VDC
16) Green Traffic light +24vdc
17) Safety loop 1
18) Safety loop 1
19) Safety loop 2
20) Safety loop 2
21) Barrier terminal 1 - Common
22) Barrier terminal 2 - Stop
23) Barrier terminal 3 - Safety
24) Barrier terminal 5 - Raise
25) Barrier terminal 6 - Lower
26) Barrier terminal 16 - Kerb lowered

Barrier inputs

27) Barrier terminal 17 - Barrier Lowered
28) Barrier terminal 18 - Barrier Lowered
29) Barrier terminal 19 - Barrier Raised
30) Barrier terminal 20 - Barrier Raised

Kerb inputs

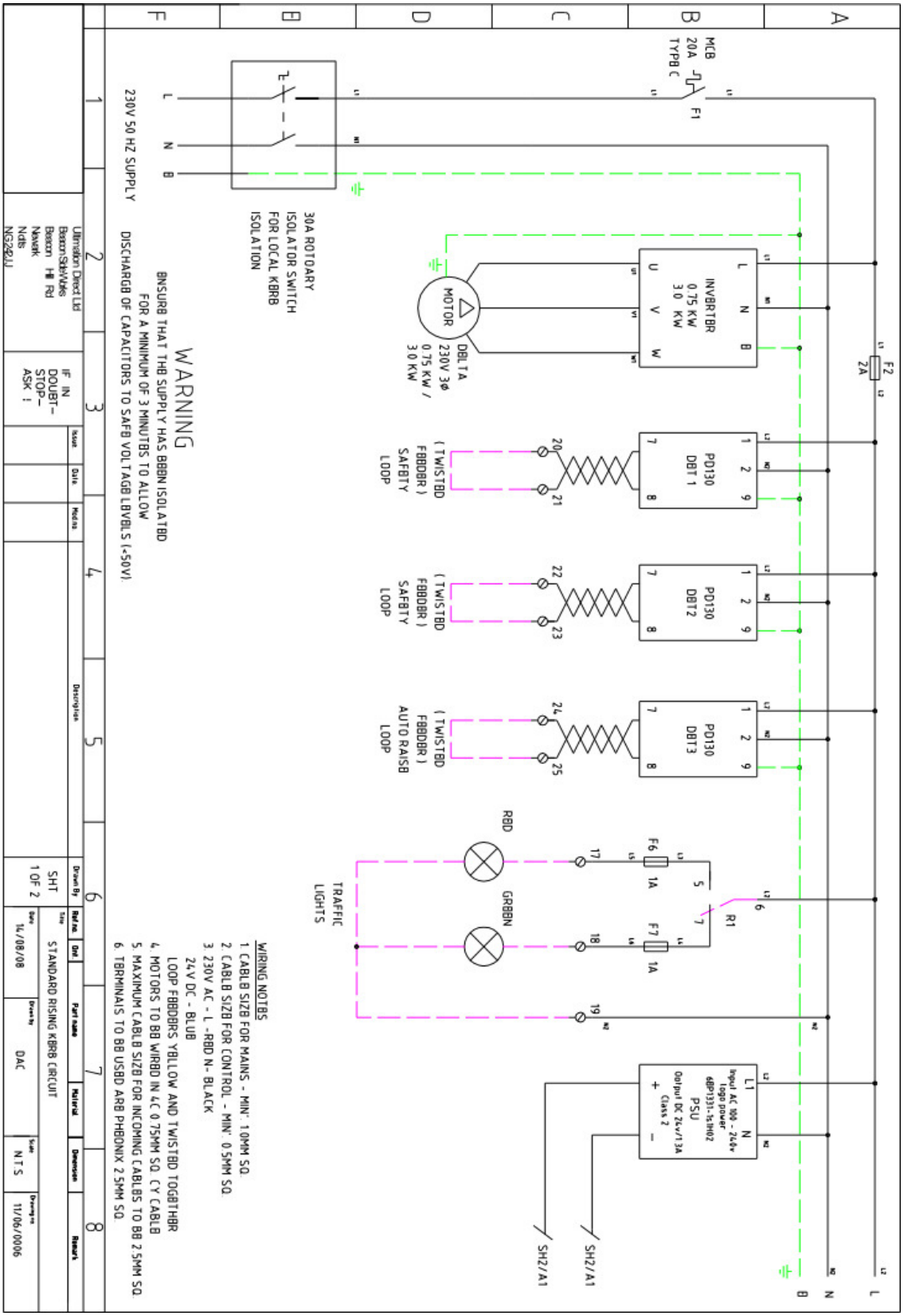
Inputs -

I0 - Barrier lowered
I1 - Stop
I2 - Lower
I3 - Raise
I4 - Lower limit
I5 - Raise limit
I6 - Safety 1
I7 - Safety 2

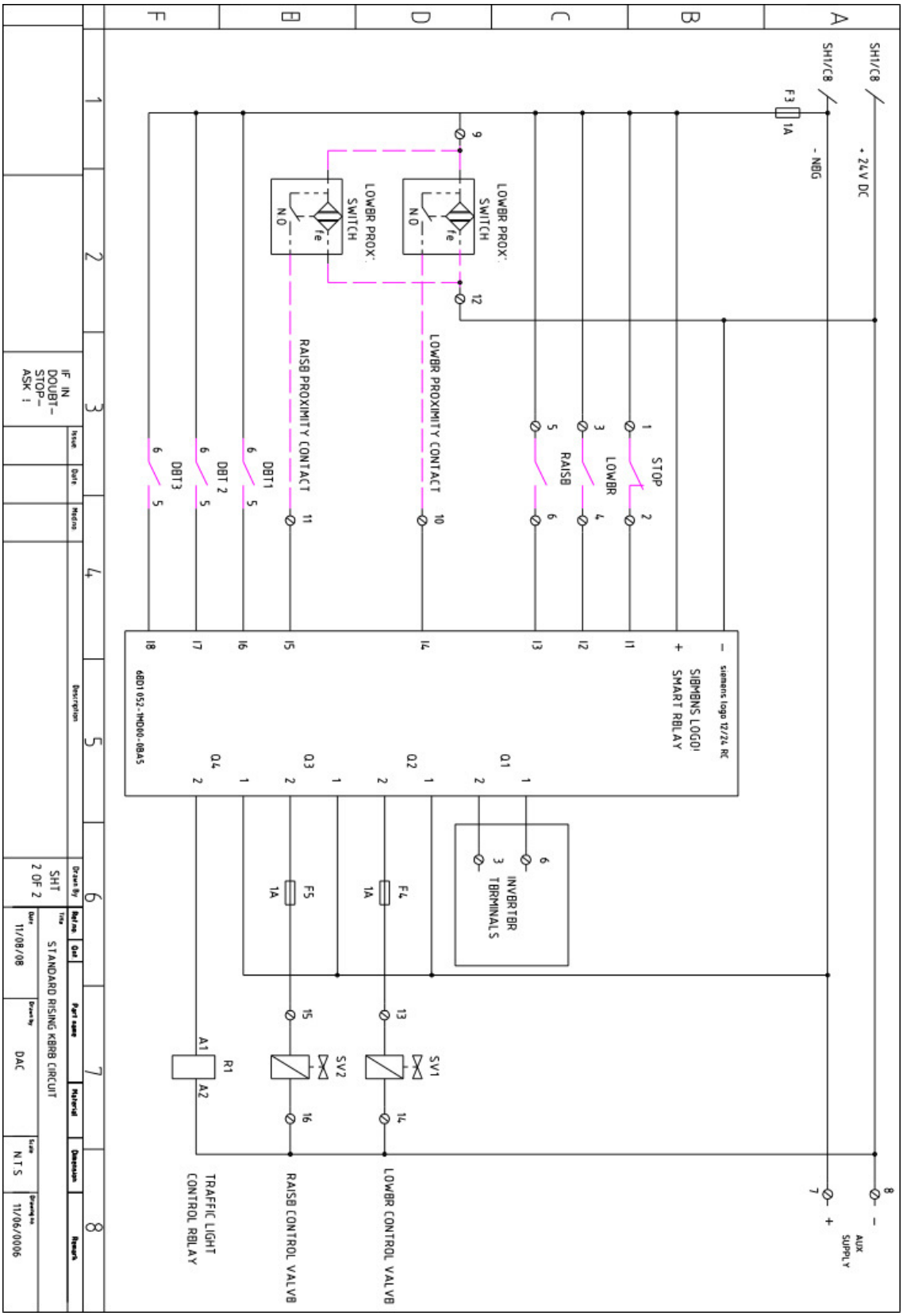
Outputs -

Q0 - Inverter Run
Q1 - Lower Valve
Q2 - Raise Valve
Q3 - Traffic light
Q4 - Kerb Lowered
Q5 - Barrier Safety
Q6 - Barrier Raise
Q7 - Barrier Lower

Wiring Diagram – Page 1

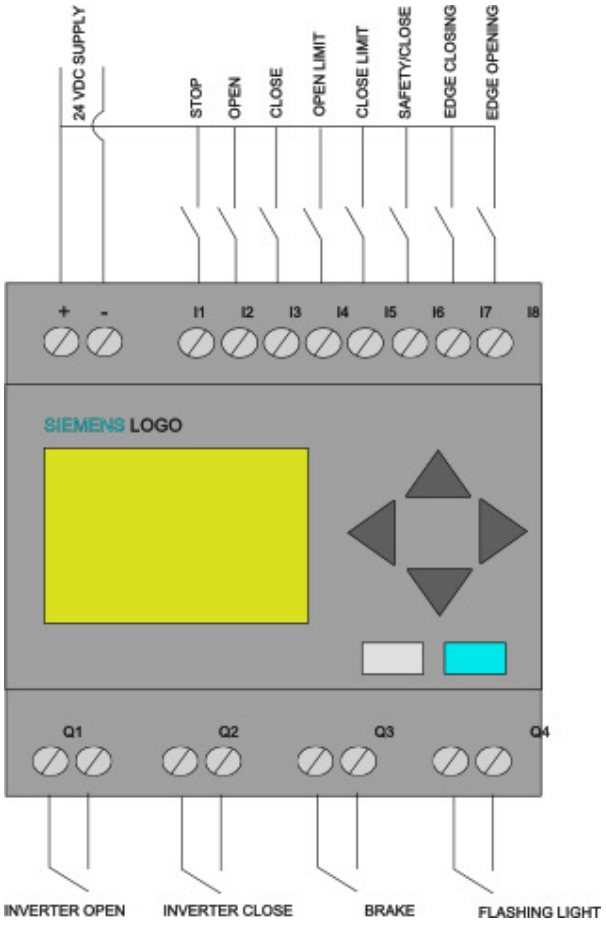


Wiring Diagram – Page 2



The PLC (Programmable Logic Controller)

The rising kerb is controlled by a sophisticated PLC, capable of being programmed for virtually any application. All programs can be modified to suit different sites.



Built in options on PLC

1 Time clock

7 Day, 24 hour time clock can be used to hold open gates at any time of the day or night. Useful for busy times of the day or night, when site access is constant.

2 Flashing lights, Audible alarm

This option allows the user to have either item, or both, to operate while the gate is moving. They can be added at any time, if not already fitted.

3 Auto reverse

This option allows the user to choose whether or not you want the gate to reverse or stop on a safety input being activated. E.g. on a vehicle breaking the safety beam or loop, the gate will reverse if option is switched on and will stop if set to off.

4 Close delay

This option allows the user to set a closing delay time upon vehicles leaving the safety beam/loop.

5 Auto Close

This option enables the auto/close feature which will automatically close the gate as long as safety features are not triggered.

Maintenance of the D8400 Automatic Rising Kerb

The following maintenance procedures should only be carried out by skilled and competent engineers.

- Check oil levels in the hydraulic power pack
- If oil level is low, check for leaks by checking all pipes and connectors. Replace any leaking pipes or connectors.
- Check traffic lights are functioning correctly.
- If the power supply cable is damaged, it must be replaced by the manufacturer or it's technical service, or else by a suitably qualified person, in order to prevent any risk.
- When any operational fault is found, and not resolved, disconnect the mains power supply and request the assistance of a qualified engineer. If kerb is stuck in the up position the manual release can be used, as outlined on page 6, to lower the kerb.
- Make sure the power is disconnected/isolated before any work is commenced on the equipment.

Oil required - Renolin B-10 VG 32 Hydraulic oil

Technical Data

The D8400 Rising Kerb Barrier is essentially a hinged barrier rising above the road surface to prevent unauthorised access. We manufacture sizes from 2 m up to 5 m but can double up to span roads of up to 12 m wide. We also offer a single kerb with the attack face on both sides if required. Our 3-phase motor driven hydraulic power pack, which is mounted within the control cabinet, provides motive power for raising and lowering action. The kerb is fitted with raise and lower limit proximity switches which cable back to the control panel with the hydraulic hoses.

As all sites vary, the kerbs are controlled via a programmable logic controller (PLC), which means it's compatible with all types of access control and can be operated to the customer's exact specification.

Construction	-	All welded steel RHS
Cover Plates	-	10 mm 'Durbar' plates
Drive	-	Remote hydraulic power pack
Finish	-	Galvanised with black/yellow chevrons
Electrical Supply	-	230 v supply (Inverter driven for 3 phase motor output)
Sizes Available	-	2 m to 5 m
Control System	-	To suit site requirements (via a Siemens Logic Controller)
Hand Operation	-	Lowering only, via a pressure release valve
Power rating (Motor)	-	0.75 Kw – 3.0 Kw
Operating Time	-	1.2 – 8 seconds
Lifting Height	-	340 mm, 500 mm or 800 mm
Max Axle Load	-	3 – 12 Tonnes

Optional Extras

Traffic lights

Hand pump for emergency raise

Control Variations

Push buttons

Induction loops

Card readers

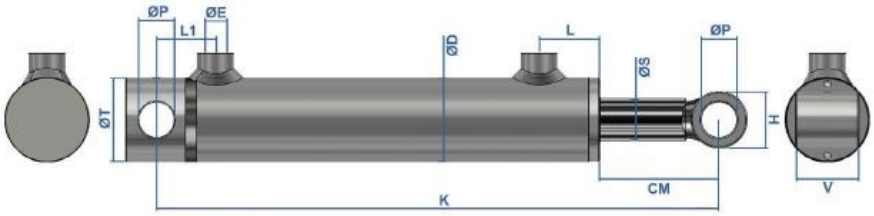
Coin acceptors

Coded keypads

Radio controls

Specification of the Hydraulic Rams

DOUBLE / SINGLE* ACTING HYDRAULIC CYLINDER (*=S/A WITH USE OF A BREATHER)
MAX PRESSURE = 210 BAR (CONTINUOUS) ► 250 BAR (INTERMITTENT)
MAX SPEED = 0.5 M/S
OPERATING TEMPERATURE (°C) = +80°C TO -25°C
TUBE MATERIAL = STEEL - ST52.3 - DIN2393 - ISO H9
ROD MATERIAL = STEEL - UNI C45 (SAE 1045) - 25 MICRON (±5) - EN8 GRADE



NFR1250100				270	100									3
NFR1250150				320	150									3.4
NFR1250200				370	200									3.9
NFR1250250				420	250									4.4
NFR1250300	40	50	25	470	300	3/8"	40	38	65	20.25	35	40	50	4.8
NFR1250400				570	400									5.8
NFR1250500				670	500									6.7
NFR1250600				770	600									7.6
NFR1250700				870	700									8.6
NFR1250800				970	800									9.5