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Latest Revision 22.06.98

Ref. P40p1.cdr
1. PRODUCT PRESENTATION

THE D5 AND A5 GATE OPERATORS ARE SELF-CONTAINED UNITS CONSISTING OF A WORMGEARED ELECTRIC MOTOR, AN ELECTRONIC CONTROL CARD AND A DIGITAL ORIGIN SEEKING SYSTEM (DOSS) WHICH KEEPS TRACK OF THE GATE POSITION.

THE UNITS HAVE A PLEASANT, MODERN DESIGN WHICH INTEGRATE HARMONIOUSLY WITH THE ENVIRONMENT OF HOME OR OFFICE.

THE SERIES 5 RANGE IS A QUALITY PRODUCT MEANT TO GIVE MANY YEARS OF RELIABLE OPERATION.

1.1. - General Features

The D5 & A5 models have been designed for sliding gates weighing less than 500 kg., whether already installed or still to be installed.

<table>
<thead>
<tr>
<th>1.2 Technical Data</th>
<th>D5</th>
<th>A5</th>
<th>A5 + Fan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Power supply</td>
<td>220V, +/-10%, 50Hz</td>
<td>220V, +/-10%, 50Hz</td>
<td>220V, +/-10%, 50Hz</td>
</tr>
<tr>
<td>Motor voltage</td>
<td>12V DC</td>
<td>220V AC</td>
<td>220V AC</td>
</tr>
<tr>
<td>Maximum absorbed current</td>
<td>160mA</td>
<td>3A</td>
<td>3A</td>
</tr>
<tr>
<td>Starting thrust</td>
<td>60kgF</td>
<td>20kgF</td>
<td>20kgF</td>
</tr>
<tr>
<td>Rated thrust</td>
<td>25kgF</td>
<td>50kgF</td>
<td>50kgF</td>
</tr>
<tr>
<td>Duty cycle</td>
<td>50% (subject to battery capacity)</td>
<td>20%</td>
<td>70%</td>
</tr>
<tr>
<td>Speed of motor rotation</td>
<td>2800 r.p.m</td>
<td>2800 r.p.m</td>
<td>2800 r.p.m</td>
</tr>
<tr>
<td>Gear Ratio</td>
<td>37 to 1</td>
<td>37 to 1</td>
<td>37 to 1</td>
</tr>
<tr>
<td>Ambient Temperature Range</td>
<td>-15 to +50 °C</td>
<td>-15 to +50 °C</td>
<td>-15 to +50 °C</td>
</tr>
<tr>
<td>Weight (including 7A/H battery for D5)</td>
<td>13.5kg</td>
<td>12.75kg</td>
<td>13.25kg</td>
</tr>
<tr>
<td>Oil Quantity</td>
<td>75ml</td>
<td>75ml</td>
<td>75ml</td>
</tr>
<tr>
<td>Oil Type</td>
<td>75W90</td>
<td>75W90</td>
<td>75W90</td>
</tr>
<tr>
<td>Gate Speed (Nominal)</td>
<td>16 m/min</td>
<td>16 m/min</td>
<td>16 m/min</td>
</tr>
<tr>
<td>Class of Protection</td>
<td>IP44</td>
<td>IP44</td>
<td>IP22</td>
</tr>
<tr>
<td>Maximum Gate Weight</td>
<td>500kg</td>
<td>500kg</td>
<td>500kg</td>
</tr>
</tbody>
</table>
1.3 STANDARD KIT PRESENTATION

NOTE! D5 OPERATOR IS SHOWN, A5 OPERATOR IS SIMILAR

WARRANTEE

THE SERIES 5 OPERATORS ARE GUARANTEED ONLY IF THE FOLLOWING CONDITIONS ARE ADHERED TO:

- MASS OF THE GATE IS LESS THAN 500kg;
- PULL ON GATE LESS THAN 25kgF;
- DUTY CYCLE IS NOT EXCEEDED (SEE CURVES);
- MAINTENANCE AS SPECIFIED IS CARRIED OUT.

- CENTURION IS AT THE DISPOSAL OF ITS CUSTOMERS FOR ANY FURTHER EXPLANATION TO OBTAIN BETTER PERFORMANCE OF THE AUTOMATION, BUT IS NOT LIABLE FOR ANY DAMAGES CAUSED BY DISREGARD OF THE ABOVE MENTIONED.
2. PRODUCT INSTALLATION

2.1 Recommended Tools

- FLAT and RING SPANNER
  - 13mm
  - 16mm
  - 17mm

- SCREW DRIVER
  - 3.5mm FLAT
  - No 1. PHILLIPS

- CRIMPING TOOL AND PIN LUGS

- PLIERS/SIDE CUTTER

- HAMMER

- TAPE MEASURE

- ALLEN KEYS
  - 6mm ACROSS FLATS

- HACKSAW

- G-CLAMP

- ELECTRIC DRILLING MACHINE

- STEEL BITS - 6,5mm

- WELDING MACHINE

- SPADE

- PICK

- LEVEL

- SOLDERING IRON
2.2 Cable Requirements

![Diagram of cable connections]

**TABLE 1**

<table>
<thead>
<tr>
<th>NO</th>
<th>DESCRIPTION</th>
<th>NO OF CORES</th>
<th>SIZE mm²</th>
<th>OPTIONAL</th>
<th>CABLE TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>†A</td>
<td>EITHER: 220V AC SUPPLY CABLE OR: 15V AC TRANSFORMER SECONDARY</td>
<td>2 + E</td>
<td>0.5</td>
<td></td>
<td>NORSK IN CONDUIT OR S.W.A.</td>
</tr>
<tr>
<td>†B</td>
<td>INTERCOM IN HOUSE &amp; STATUS SIGNALLING</td>
<td>n1 + 6</td>
<td>0.2</td>
<td>X</td>
<td>INTERCOM IN CONDUIT</td>
</tr>
<tr>
<td>C</td>
<td>INTERCOM - GEARBOX TO GOOSENECK</td>
<td>n2</td>
<td>0.2</td>
<td>X</td>
<td>INTERCOM IN CONDUIT</td>
</tr>
<tr>
<td>D</td>
<td>PILLAR LIGHTS</td>
<td>2 + E</td>
<td>0.5</td>
<td>X</td>
<td>NORSK IN CONDUIT OR S.W.A.</td>
</tr>
<tr>
<td>E</td>
<td>REMOTE RECEIVER</td>
<td>3</td>
<td>0.2</td>
<td>X</td>
<td>INTERCOM/CABTYRE/G.P. IN CONDUIT</td>
</tr>
<tr>
<td>F</td>
<td>PEDESTRIAN KEYSWITCH</td>
<td>2</td>
<td>0.2</td>
<td>X</td>
<td>INTERCOM/CABTYRE/G.P. IN CONDUIT</td>
</tr>
<tr>
<td>G</td>
<td>INFRA RED BEAM</td>
<td>3</td>
<td>0.2</td>
<td>X</td>
<td>INTERCOM/CABTYRE/G.P. IN CONDUIT</td>
</tr>
<tr>
<td>H</td>
<td>SOLAR PANEL (not shown)</td>
<td>2</td>
<td>1.5</td>
<td>X</td>
<td>CABTYRE OR G.P. IN CONDUIT</td>
</tr>
</tbody>
</table>

* = CABLE TYPE IS MINIMUM RECOMMENDATION
S.W.A. = STEEL WIRE ARMOURDED
G.P. = GENERAL PURPOSE HOUSE WIRING OR PANEL FLEX
n1 = CONSULT INTERCOM SUPPLIER FOR REQUIRED NO. OF CORES
n2 = CONSULT INTERCOM SUPPLIER FOR REQUIRED NO. OF CORES
† = FOR OPTIMUM LIGHTNING PROTECTION USE SCREENED CABLE EARTHED AT BOTH ENDS

Ref. p36p5.cdr
2.3 Gate Requirements

NOTE: DUTY CYCLE IS SUBJECT TO BATTERY AND CHARGER SIZE.

END STOP (See NOTE 2)

A.1

Ø16 ROUND BAR
STITCH WELDED BOTH SIDES
75x50mm ANGLE IRON

RECOMMENDED OPTION

A.2

Ø16 ROUND BAR
STITCH WELDED BOTH SIDES
75x50mm ANGLE IRON

ALTERNATE OPTION

A.3

ANGLE IRON
STITCH WELDED BOTH SIDES
75x50mm ANGLE IRON

NOT RECOMMENDED

NOTE 1: The Bottom of the Round Bar (or the Angle Iron) should be Level with the Ground (or not exceeding 5 mm High).

NOTE 2: Requirements of END STOP:
- Stop Gate in Fully Open Position;
- Strong Enough to Resist Full Thrust of Motor.

NOTE 3: CATCH BRACKET
- Secure Front of Gate When Fully Closed;
- Prevent Front of Gate from Being Lifted;
- Strong Enough to Resist Full Thrust of Motor;
- Gate Must Slide Smoothly into Catch Bracket.
Gate Requirements continued

**OPTION 1**

STEEL WHEEL V PROFILE

16mm ROUND BAR

GATE MASS: UP TO 400 KG
LOW USAGE

**OPTION 2**

STEEL WHEEL ROUND PROFILE

16mm ROUND BAR

GATE MASS: UP TO 800 KG
HIGH USAGE

**C**

RECOMMENDED ADDITIONAL POST TO PREVENT GATE FROM FALLING OVER IF GUIDE ROLLER FAILS.

GUIDE ROLLERS

IMPORTANT !!!

THIS GAP TO BE SMALL ENOUGH TO ENSURE THAT GATE CANNOT BE LIFTED OFF THE MOTOR PINION (<5mm)

NOTE: See typical designs for anti lift bracket on page 8
TYPICAL DESIGNS FOR ANTI LIFT BRACKET

A

GAP < 5mm

Spacer Plate

B

GAP < 5mm

C

GAP < 5mm

D

GAP < 5mm

WARNING! - FILL WITH OIL PRIOR TO RUNNING

THE GEARBOX DOES NOT CONTAIN ANY OIL.
DO NOT OPERATE UNTIL OIL HAS BEEN ADDED.

FOR TRANSPORT PURPOSES THIS UNIT HAS BEEN SUPPLIED WITH OIL IN A SEPARATE SEALED CONTAINER.

INSTRUCTION FOR FILLING:

1. LIFT OFF THE COVER TO THE OPERATOR
2. REMOVE THE CONTROL CARD AND BATTERY SO THAT YOU CAN GAIN ACCESS TO THE FILLER PLUG
3. UNSCREW THE CAP AND POUR IN THE OIL PROVIDED

SPECIFICATIONS OF OIL:

GRADE: 75W90
QUANTITY: 75ml
2.4 UNIT INSTALLATION

2.4.1 Preliminary Preparations Plate Mounting

- LOCATE CENTRELINE FOR HOLE AND FOUNDATION PLATE AS SHOWN.

- THERE IS NO DIFFERENCE IF MOUNTING ADJACENT RIGHT HAND PILLAR.

- DIG HOLE FOR FOUNDATION PLATE APPROXIMATELY 400 x 400 x 300mm.

2.4.2 POSITIONING OF FOUNDATION PLATE FOR RACK SLIDER

- LOCATE THE FOUNDATION PLATE SUCH THAT THE DISTANCE FROM THE SIDE OF THE GATE TO THE CENTRELINE OF THE HOLDING DOWN STUDS IS 105mm.

- CAST CONCRETE AROUND THE PLATE.

- ALTERNATIVELY USE STRIPS OF ANGLE IRON TO WELD THE FOUNDATION PLATE TO THE ANGLE IRON RAIL.
N.B. ! CHECK FOR CORRECT ORIENTATION OF BASEPLATE.

- PREPARE THE PLATE FOR CONCRETING INTO PLACE.

**NOT CORRECT !!!**

**CORRECT !!!**

- M10 STUD
- BASE PLATE
- ANCHORS

BEND THE ANCHORS VERTICALLY TO FIX THE FOUNDATION PLATE INTO THE CONCRETE

RECOMMENDED CABLE PREPARATION **BEFORE** CASTING CONCRETE PLINTH

- AUXILIARY CABLES
- 220V AC MAINS CABLE
- CABLE SHEATH CUT BACK TO HEIGHT SHOWN

1. Knock out the required cable entry holes.
2. Recommended cable routing is in front of the battery and into terminals of PCB.
3. Use typically silicone sealer to seal off cable entry holes afterwards.
Positioning of Gearbox continued

2.4.3 ADJUSTING THE POSITION OF THE UNIT

- FIT NUT AND WASHER WITH GAP AS SHOWN.

- POSITION GEARBOX ON BASEPLATE WITH FRONT OF PINION +/- 8mm FROM SIDE OF GATE. CHECK ALONG ENTIRE LENGTH OF GATE.
Mounting of the Gearbox continued

2.4.4 BOLTING DOWN THE UNIT

- USE NUTS TO ADJUST LEVEL AND HEIGHT OF GEARBOX USING 17mm FLAT SPANNER.
- BOLT FIRMLY DOWN USING WASHERS, SPRING WASHERS AND M10 NUTS SUPPLIED WITH THE UNIT.

N.B. - G/B MUST BE LOCATED BETWEEN NUTS SHOWN

2.4.5 MOUNTING OF RACK

Positioning of steel rack

- WELD RACK INTO PLACE USING ANGLE BRACKETS
- RACK MUST BE SECURELY SUPPORTED WITH ANGLE BRACKETS EVERY 300mm.
- LEAVE 2 - 3mm GAP AS SHOWN.
N.B. ENSURE RACK IS LEVEL AND MESHES IN THE CENTRE OF THE DRIVE PINION.

25 x 25 x 20 RACK ANGLE BRACKETS WELDED
CENTRELINE OF RACK 20mm FROM EDGE OF GATE

LEAVE 2 - 3mm GAP

N.B. RACK MESH IS CRITICAL FOR RELIABLE OPERATION OF SYSTEM.
Mounting of Rack continued

- **Joining steel rack**
  - Cut off short length of rack (approx. 200mm).
  - Clamp the new pieces to offcut.
  - Weld pieces together where indicated.
  - Weld here.
  - N.B. Do not weld near meshing surfaces.

- **Mounting and Joining of Nylon Rack**
  - Work from RHS of the gate to LHS to ensure rack clips together.
  - Screw nylon rack onto gate using fasteners provided.
  - Use fasteners min 230mm apart.
  - Use an additional fastener to secure the rack where the pinion meshes with the rack in the gate open and closed positions.

Ref. p28p13.cdr
2.4.6 MOUNTING CHAIN

NOTE: Mount chain under idler pulleys and over motor drive sprocket

POSITIONING FRONT ANCHOR BRACKET

- WELD FRONT ANCHOR BRACKET TO FRONT OF GATE.

- HEIGHT OF ANCHOR BRACKET: CENTRELINE IN LINE WITH TOP OF IDLER SHAFT.

PLAN VIEW

ANCHOR BRACKETS MUST BE HORIZONTALLY POSITIONED SO THAT CHAIN IS IN LINE WITH DRIVE SPROCKET AND IDLER PULLEYS.

POSITIONING REAR ANCHOR PLATE WITH TENSIONER

- WELD REAR ANCHOR PLATE TO BACK OF GATE.

- HEIGHT OF ANCHOR BRACKET: CENTRELINE OF HOLE IN ANCHOR PLATE IN LINE WITH TOP OF IDLER SHAFT.

- CUT CHAIN TO LENGTH.

- TENSION CHAIN USING TENSIONER PIN.
3.0 ACCESSORIES

RACK & ATTACHMENTS

MACHINED STEEL RACK

NYLON RACK

25 x 25 RACK ANGLE SUPPORT BRACKET

SPECIAL RACK FASTENERS

FASTENERS

M10 NUT(S) FLAT WASHER(S)

LOCK WASHER

CHAIN & ATTACHMENTS

M12 x 85mm LONG CHAIN TENSIONER PIN

CHAIN - 4m or 5m LENGTHS

MASTER LINK(S)

CHAIN ANCHOR BRACKET (FRONT)

BATTERIES (D5 ONLY)

35AH BATTERY 6.5AH BATTERY
(LIGHT INDUSTRIAL) (DOMESTIC)

POWER SUPPLY

D5 CHARGER - CP84E A5 POWER SUPPLY - CP83E

PLUG IN TRANSFORMER (CP83) (USE WITH CHARGER CP84XTE) D5 ONLY

ENCLOSURES (OPTIONAL)

35 A/H BATTERY ENCLOSURE (CP 6)

ELECTRONICS

CP80 CONTROL CARD (D5)

CP81 CONTROL CARD (A5)

Ref. p26p15.cdr
4. ELECTRICAL CONNECTIONS

NB.

The controllers on the A5 and D5 versions are different. Make sure you are connecting the correct controller:

CONTROLLER TYPES

1) CP80 - USED ON D5 OPERATOR

2) CP81 - USED ON A5 OPERATOR

NOTES:

Select which pieces of equipment need to be connected and then link to one of the controllers shown below.

- 220V AC MOTOR CONTROLLER

CP81 CONTROL CARD
Electrical Connections continued

CP80 CONTROLLER - 12V DC MOTOR CONTROLLER

CP80 CONTROL CARD

MOTOR CONNECTIONS

12V DC MOTOR

GATE CLOSING DIRECTION

12V DC MOTOR

12V DC MOTOR

M 12V DC

Motor Fuse
20A Slow Blow

Ref. p24p17.cdr
SAFETY BEAM

N.B. IF BEAMS ARE NOT USED THEN ENSURE THAT A LINK IS FITTED FROM "COM" TO "IRB" TERMINAL ON CONTROL CARD.

NOTE - TYPICAL SAFETY BEAM IS SHOWN. REFER TO MANUFACTURER FOR DETAILS.
**Electrical Connections continued**

**RADIO CONNECTIONS**

- (REFER TO CENTURION FOR CODING DETAILS)

---

**EXAMPLE 1**

SMART RX CENTURION

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>+12V</td>
<td>AC/DC</td>
<td>COM</td>
<td>NC</td>
<td>NO</td>
</tr>
<tr>
<td>LEARN</td>
<td>ERASE</td>
<td></td>
<td></td>
<td></td>
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</table>

TX

NO CODING SWITCHES

---

**EXAMPLE 2**

TYPICAL RADIO RECEIVER

- POWER SUPPLY
  - +12V

- COM

- TRG

TYPICAL TRANSMITTER (REMOTE)

- CODE SWITCHES

- FOR DETAILS OF SETTING CODE SWITCHES REFER TO RADIO MANUFACTURER

- OPTIONAL EXTERNAL LINK IF NOT INTERNALLY FITTED

CONTROLLER MODEL

- CP80
  - 12V
  - COM
  - TRG

- CP81
  - 12V
  - COM
  - TRG

---

**REMOTE GATE STATUS LIGHT EMITTING DIODE (LED)**

Fitted to handset base separately

- ANODE +

- CATHODE -

- STATUS LED

- LED

- SIGNAL COMMON

- 0,2mm² CABLE

**GATE STATUS**

<table>
<thead>
<tr>
<th>GATE STATUS</th>
<th>LED INDICATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PILLAR LIGHT ON CONTINUOUSLY</td>
<td>1 FLASH / 2 sec</td>
</tr>
<tr>
<td>MAINS LOSS</td>
<td>2 FLASHES / 2 sec</td>
</tr>
<tr>
<td>BATTERY LOW</td>
<td>3 FLASHES / 2 sec</td>
</tr>
<tr>
<td>COLLISION DETECTION</td>
<td>4 FLASHES / 2 sec</td>
</tr>
<tr>
<td>GATE CLOSED</td>
<td>OFF</td>
</tr>
<tr>
<td>GATE OPEN</td>
<td>ON</td>
</tr>
<tr>
<td>GATE OPENING</td>
<td>SLOW EVEN FLASH</td>
</tr>
<tr>
<td>GATE CLOSING</td>
<td>FAST EVEN FLASH</td>
</tr>
</tbody>
</table>

---

CONTROLLER MODEL

- CP80
  - COM
  - LED

- CP81
  - COM
  - LED

---

Ref. p22p19.cdr
**Electrical Connections continued**

**POWER SUPPLY / BATTERY CHARGER**

**OPTION 1**
- 220V AC SUPPLY TO GATE (A5 or D5)
- D5 - CP84E CHARGER
- A5 - CP83E POWER SUPPLY

**OPTION 2**
- LOW VOLTAGE (+/- 19V) AC SUPPLY TO GATE (D5 ONLY)

**PILLAR LIGHT(S)**

- CABLE TO LIGHT(S)
- CABLE FROM SUPPLY TO MOTOR CONTROLLER

**Controller Model**

<table>
<thead>
<tr>
<th>Controller Model</th>
<th>Light</th>
<th>Light</th>
<th>Light</th>
</tr>
</thead>
<tbody>
<tr>
<td>CP80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP81</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
- 0,5mm² NORSK CABLE OR (S.W.A.)
- 220V AC supply (or other voltage to suit type of the globes used)
Electrical Connections continued

HOLIDAY LOCKOUT

RELAY MUST HAVE LATCHING CONTACT.
LOCKOUT IS ACTIVE WHEN CONTACT IS OPEN.

NB: IF HOLIDAY LOCKOUT IS NOT USED, ENSURE THAT A LINK IS FITTED FROM "COM" TO "LCK" TERMINAL ON CONTROL CARD.

REMOTE PROGRAMME SWITCH (Activate pillar lights)

TYPICAL PUSHBUTTON IS SHOWN FITTED TO AN INTERCOM TELEPHONE

TO MOTOR CONTROLLER
PEDESTRIAN KEYSWITCH

FREE EXIT LOOP - LD 100 OR 101 INDUCTIVE LOOP DETECTOR IS SHOWN BELOW. MODIFY WIRING IF OTHER MAKES OF DETECTORS ARE USED.

See details A & B next page

POWER SUPPLY
LD100 - 220V AC
LD101 - 12V DC

CONTROLLER MODEL
CP80 FRX COM
CP81 FRX COM

CONTROLLER MODEL
CP80 PED COM
CP81 PED COM

0,2mm² CABLE

TWISTED WIRES FROM LOOP

11 PIN PLUG IN RELAY BASE

NEG OUT
LOOP DETAILS

STANDARD FEATURES OF THE DETECTOR ARE:

- **Reset Switch.**
  The reset switch enables the detector to be manually reset during commissioning and testing.
  This results in the detector re-tuning the sensing loop and becoming ready for vehicle detection.

- **Selectable Pulse Time.** This feature sets the length of time that the pulse relay will be energised for.

- **Pulse Relay Selection.** The pulse relay may be configured to energise on detection of vehicle leaves the loop.

- **Second Presence Relay output.**
  This option is used to provide a second presence relay output by changing the mode of the pulse relay to presence mode.

- **Switch selectable Sensitivity.** Four sensitivity settings are available on the switches to allow flexibility in configuration.
  - High  - 0.02% ; Medium High  - 0.05%
  - Medium Low  - 0.1% ; Low  - 0.5%

- **Switch selectable Frequency.** Two frequency settings are available to prevent cross-talk between adjacent loops.

- **Permanent Presence Option.**
  This feature ensures detection of the vehicle will be maintained when the vehicle is parked over the loop for extended periods.

---

**DETAIL A**

**VEHICLE LOOP DETECTOR**

**LD 101**

**WIRING CONNECTIONS**

**CONNECTION PIN**

- ON OFF
- S7/S8/59
- S9/S7/S8
- S8/S9/S7
- S7/S9/S8
- S7/S8/S9
- S7/S8/9
- LOW HI
- ASB ON OFF
- FILTER 25SEC OFF
- PERM PRES ON OFF
- PULS MODE UNDET DET
- PULS TIME 1SEC 0.2SEC

**NOTE:** DO NOT OPEN HOUSING WITH POWER ON.

---

**DETAIL B**

(Recommended settings)

**POWER**

**DETECT**

**LOOP FAULT**

**RESET**

**SENS**

**SENS**

**SENS**

**SENS**

**SENS**

**SENS**

**SENS**

**FREQ**

**ASB**

**FILTER**

**PERM PRES**

**PULSE MODE**

**PULSE TIME**

**PROCEN**

**ELECTRONICS**

**ROAD**

**LOOP CIRCUMFERENCE**

**NO. OF TURNS**

<table>
<thead>
<tr>
<th>METRES</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 10</td>
<td>2</td>
</tr>
<tr>
<td>6 - 10</td>
<td>3</td>
</tr>
<tr>
<td>&lt; 6</td>
<td>4</td>
</tr>
</tbody>
</table>

---

**NOTES:**

- WIRE: 1.5mm SQUARED MULTI STRANDED CABLE (USE SILICON COATED IF PLACED DIRECTLY INTO THE GROUND)
- SPACING BETWEEN TWO ADJACENT LOOPS > 2 METRES. ALTERNATE ADJACENT LOOPS USING DIFFERENT NUMBERS OF TURNS.
- LOOP AND FEEDER SHOULD COM普PE ONE LENGTH OF UNJOINED WIRE. IF JOINTS ARE MADE, THEN SOLDER JOINT.
- USE SCREENED FEEDER CABLE IN ELECTRICALLY NOISY ENVIRONMENTS OR WHERE FEEDER RUNS PARALLEL TO POWER CABLES.

Ref. p18p23.cdr
**INTERCOM CONNECTIONS**

**NOTE:**
- Many different intercom types are available.
- Only signals necessary to interface intercom to Centurion’s controller are shown.

**EXAMPLE 1**  
COMMAX 1 - 1 (12V)

**EXAMPLE 2**  
BPT 1 - 1 (WITH 12V DC POWER SUPPLY)

**EXAMPLE 3**  
TEGUI 12V DC INTERCOM (LUX KIT)

**EXAMPLE 4**  
TYPICAL 220V AC POWERED INTERCOM
5. COMMISSIONING

5.1 APPLYING MAINS POWER

OPTION 1  220V AC SUPPLY TO GATE
- APPLY 220V AC POWER
- CHECK POWER ON INDICATION

OPTION 2  LOW VOLTAGE SUPPLY TO GATE (D5 ONLY)
- PLUG IN TRANSFORMER AND SWITCH ON CIRCUIT
- CHECK POWER ON INDICATION

CONNECTING BATTERY (D5 ONLY)

NOTE: IF A LARGE BATTERY IS USED,
THE CABLES CONNECTING THE BATTERY TO THE CP80 CARD
SHOULD BE BETWEEN 6 & 10 mm²
FOR CABLE LENGTHS LESS THAN 5 METRES.
Commissioning continued

5.2 SETTING CLUTCH ON A5 MOTOR

NOTE: This can only be carried out after the control card, CP81, has been programmed.

STEP 1
- If fan is fitted, disconnect power cable to fan.

STEP 2 - Remove Fan Cowling from Motor.
STEP 3  Adjust grub screw to correct gate pulling / push force.

CLOCKWISE TO REDUCE SENSITIVITY (i.e. INCREASE FORCE)

13mm SPANNER TO LOCK SHAFT

RECOMMENDED FORCE < 15KGF

STEP 4  Remount cooling fan, where applicable, and connect power.
Commissioning Procedure continued

5.3 PROGRAMMING THE CP80/CP81 CONTROL CARD

N.B. * Procedure 1 to 4 MUST be performed on initial commissioning. Procedure 5 & 6 are required ONLY if the default settings on the PCB need to be changed. The procedure is shown in the following block diagram.

* PROCEDURE 1
CHECK FOR CORRECT MOTOR DIRECTION

* PROCEDURE 2
GET INTO PROGRAMME MODE

* PROCEDURE 3
SET D.O.S.S.

* PROCEDURE 4 - GATE LIMITS
- SET GATE OPEN LIMIT, THEN
- SET GATE CLOSED LIMIT, THEN
- SET PEDESTRIAN OPEN POSITION

* PROCEDURE 5 - FUNCTION SELECT
- AUTOCLOSE ON/OFF, or
- SELECT MODE OF OPERATION, or
- SELECT COLLISION SENSITIVITY, or
- SELECT POSITIVE CLOSE MODE (PCM), or
- SELECT PREFLASHING MODE

* PROCEDURE 6 - SET TIMERS
- AUTOCLOSE TIME, or
- PEDESTRIAN AUTOCLOSE TIME, or
- COURTESY LIGHT TIME, or
- AUTOCLOSE OVERRIDE TIME, or
- PREFLASHING TIME, or
- NO. OF COLLISIONS, or
- COAST MODE

EXIT TO PROGRAMME START
PROCEDURE 1 - CHECK FOR CORRECT MOTOR DIRECTION

N.B. Procedure 1 to 4 MUST be performed on initial commissioning:

1. Check motor direction

If the gate closes to the RIGHT, then swap wires as shown below:
**Commissioning Procedure continued**

**PROCEDURE 2 - GETTING INTO PROGRAMME MODE**

**STEP 1**  Remove the electronics power from the PCB.

**12V DC MOTOR**
- CP80 control card
- 13.8V STATUS
- Remove 13.8V Supply from socket
- Remove Lug Off Battery Negative

**220V AC MOTOR**
- CP81 control card
- STATUS
- Remove 12V Supply from socket

**OR**

**STEP 2**  Fit SET link to PCB

**12V DC MOTOR**
- CP80 control card
- L1 L2
- STATUS
- SET

**220V AC MOTOR**
- CP81 control card
- L1 L2
- STATUS
- SET

**STEP 3**  Reapply power (Reversal of STEP 1 above).
Check that STATUS LED flashes 5 times and then "L2" LED must be illuminated indicating PROGRAMME MODE.

**12V DC MOTOR**
- CP80 control card
- L1
- L2
- ON
- STATUS
- SET

**220V AC MOTOR**
- CP81 control card
- L1
- L2
- ON
- STATUS
- SET

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Commissioning Procedure continued

PROCEDURE 3 - SETTING DOSS

STEP 1 - Put the gate into manual mode.

ROTATE MANUAL DISCONNECT THUMBWHEEL CLOCKWISE UNTIL GATE IS RELEASED.

STEP 2 - Manually push the gate fully closed.

STEP 3 - Remove the protective cap from the DOSS.

NB - Do not throw away the cap, it must be replaced after setting the DOSS.
Procedure 3 - Setting DOSS continued

STEP 4  - Rotate DOSS wheel in either direction until STATUS LED, is OFF (if already off then proceed to STEP 5).

STEP 5  Rotate DOSS wheel, click by click, in direction shown below, till STATUS just comes ON, then add 2 clicks.

OBSERVE DIRECTION AS SHOWN BELOW

IF GATE CLOSING DIRECTION
THEN ROTATE CLOCKWISE

IF GATE CLOSING DIRECTION
THEN ROTATE ANTI - CLOCKWISE

CP80 or CP81
Commissioning Procedure continued

PROCEDURE 4 - SETTING GATE LIMITS

NB. - Gate limits must be set up on initial commissioning, or, if rack and pinion
lose mesh.
- Steps 1 to 5 must be followed in order and completed.
- If not already done put motor into manual mode (See Procedure 3 Step 1).
- Make sure gate is in closed position.

STEP 1 Hold TEST P/B down until L1 LED flashes once, then release P/B.

ENSURE GATE IS CLOSED

CP80 & CP81 control card

ON WHILE SET LINK IS FITTED

ON WHILE TEST P/B IS PRESSED

STEP 2 - L1 will be flashing once per second;
- Press TEST P/B until STATUS LED illuminates;
- Release P/B;
- STATUS, L1, L2 will now be off.

STEP 3 - Push gate OPEN without reversing and stop gate, 20mm from mechanical endstop.
- Press TEST P/B until STATUS illuminates.
- Release P/B
Procedure 4 - Setting Gate Limits continued

STEP 4 - Push gate closed without reversing and stop gate, 20mm from mechanical endstop;
- Press TEST P/B until STATUS LED illuminates;
- Release P/B.

![Diagram showing gate and control card]

STEP 5 - Push the gate to the REQUIRED PEDESTRIAN OPEN position making sure the gate direction is not reversed.
- Press TEST P/B until STATUS illuminates; if not then increase the pedestrian opening, bit by bit until STATUS illuminates;
- Release P/B
- L2 will illuminate.

![Diagram showing gate and control card]

NOTE: 'STEP 5' MUST BE PERFORMED EVEN IF THE PEDESTRIAN FACILITY IS NOT USED.
Procedure 4 - Setting Gate Limits continued

STEP 6  - Re-engage gate by turning manual release thumbwheel anti-clockwise.
- Slide gate manually until drive re-engages.

ROTATE THUMBWHEEL ANTI - CLOCKWISE TO RE-ENGAGE

STEP 7  - Exit PROGRAMME MODE, if not proceeding to procedure 5 or 6 by removing SET LINK.

L1, L2 OFF after exiting PROGRAMME MODE

REMOVE BRIDGE FROM SET LINK TO EXIT PROGRAMME MODE
(If not proceeding to Procedure 5 or 6)
Commissioning Procedure continued

PROCEDURE 5 - FUNCTIONS SELECTION

TURBO SETUP: To speed up the selecting of "menus" turbo mode should be used. This is done by connecting "COM" to "PED". The counting speed on L1 will be increased.

STEP 1  Ensure that PCB is in PROGRAMME MODE i.e. LED, L2, MUST be illuminated (if not refer Procedure 2 ).

STEP 2  Hold TEST P/B DOWN until LED L1, flashes the required number of times as shown in TABLE 5.1, then release P/B.

<table>
<thead>
<tr>
<th>FUNCTION TO BE SELECTED</th>
<th>NO. OF TIMES L1 FLASHES</th>
<th>DEFAULT STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTOCLOSE ON / OFF</td>
<td>2</td>
<td>OFF</td>
</tr>
<tr>
<td>MODE OF OPERATION</td>
<td>4</td>
<td>STANDARD</td>
</tr>
<tr>
<td>COLLISION SENSITIVITY</td>
<td>7</td>
<td>HIGH</td>
</tr>
<tr>
<td>PCM</td>
<td>9</td>
<td>OFF</td>
</tr>
<tr>
<td>PRE - FLASHING MODE</td>
<td>10</td>
<td>OFF</td>
</tr>
</tbody>
</table>

TABLE 5.1
Procedure 5 - Functions Selection continued

STEP 3  Press & Hold TEST button while monitoring STATUS LED; Release the Pushbutton after STATUS LED Flashes the required number of times to select the required mode. (See Table 5.2)

<table>
<thead>
<tr>
<th>FUNCTION TO BE SELECTED</th>
<th>No. of times L1 is flashing</th>
<th>REQUIRED NO. OF FLASHES OF STATUS LED TO SELECT MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTOCLOSE ON / OFF</td>
<td>2</td>
<td>ON      OFF</td>
</tr>
<tr>
<td>MODE OF OPERATION</td>
<td>4</td>
<td>STANDARD CONDOMINIUM PIRAC REVERSING</td>
</tr>
<tr>
<td>COLLISION SENSITIVITY</td>
<td>7</td>
<td>HIGH    MEDIUM LOW</td>
</tr>
<tr>
<td>PCM</td>
<td>9</td>
<td>ON      OFF</td>
</tr>
<tr>
<td>PRE - FLASHING ON / OFF</td>
<td>10</td>
<td>MODE 1  MODE 2  MODE 3  OFF</td>
</tr>
</tbody>
</table>

**TABLE 5.2**

L1 will extinguish & L2 will illuminate allowing selection of more functions if required.

**PREFLASHING MODES:**

MODE 1 - LIGHT PREFLASHES AT 1 HZ, THEN ACTS AS COURTESY LIGHT
MODE 2 - LIGHT FLASHES AT 1 HZ FOR PREFLASH TIME AND MOTOR RUN TIME ONLY
MODE 3 - LIGHT ON CONTINUOUSLY FOR PREFLASH TIME AND MOTOR RUN TIME ONLY

STEP 4  Exit PROGRAMME MODE, if NOT proceeding to procedures 4 or 6, by removing set bridge.

* ONLY applicable to D5. See page 26 for adjustment of A5 Clutch.

Ref. p4p37.cdr
Commissioning Procedure continued

PROCEDURE 6 - SETTING DURATION OF TIMERS

STEP 1  Ensure that PCB is in PROGRAMME MODE i.e. LED, L 2, MUST be illuminated (if not refer Procedure 2).

STEP 2  Hold TEST P/B DOWN until number of flashes of LED, L1, corresponds to the TIMER to be selected as shown in TABLE 6.1, then release P/B.

<table>
<thead>
<tr>
<th>TIMER</th>
<th>NO. OF TIMES LED L1 SHOULD FLASH</th>
<th>DEFAULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUTOCLOSE</td>
<td>3</td>
<td>15 secs</td>
</tr>
<tr>
<td>PEDESTRIAN AUTOCLOSE</td>
<td>5</td>
<td>5 secs</td>
</tr>
<tr>
<td>COURTESY LIGHT (see note overleaf)</td>
<td>6</td>
<td>120 secs</td>
</tr>
<tr>
<td>AUTOCLOSE OVERRIDE</td>
<td>8</td>
<td>3 secs</td>
</tr>
<tr>
<td>PREFLASHING TIME</td>
<td>11</td>
<td>5 secs</td>
</tr>
<tr>
<td>COLLISION COUNTER</td>
<td>12</td>
<td>4 counts</td>
</tr>
<tr>
<td>COAST MODE</td>
<td>13</td>
<td>* 3 counts</td>
</tr>
</tbody>
</table>

TABLE 6.1

* NB. Each count represents 10mm of coast for the gate.
Procedure 6 - Setting Duration of Timers continued

STEP 3  Press and Hold TEST button while counting the number of times STATUS LED flashes;
Release the Pushbutton when the flashes count = time (or count ) required.

NOTE:

-1FLASH OF STATUS = 1 second of timer duration (approx.),
EXCEPT for the courtesy light timer where
-1 FLASH OF STATUS = 10 seconds of timer duration (approx.).

For COAST MODE: (see page 40 for more detail)
- 1 FLASH OF STATUS=10 mm of COAST DISTANCE (maximum 250mm)

![Diagram of CP80 & CP81 control card]

L 1 will extinguish & L 2 will illuminate allowing selection of more timers or functions. ( See Procedure 4 or 5 ).

STEP 4  Exit PROGRAMME MODE, if NOT proceeding to Procedure 4 or 5, remove SET bridge.

![Diagram of CP80 & CP81 control card with SET bridge removal]
5.4 PROCEDURE TO PROGRAM THE CP80/CP81 TO DEFAULT SETTINGS

1. REMOVE POWER (POWER SUPPLY AND BATTERY IF D5).
2. FIT THE "SET" LINK.
3. CONNECT "PED" AND "FRX" TO "COM".
4. RECONNECT POWER. L1 AND L2 WILL ILLUMINATE.
5. REMOVE THE POWER (BATTERY AND POWER SUPPLY).
6. REMOVE THE "SET" LINK AND DISCONNECT "PED" AND "FRX" FROM "COM".
7. THE CARD IS NOW PROGRAMMED TO DEFAULT SETTINGS AS SHOWN IN TABLES 5.1 (see page 36) AND 6.1 (see page 38) (GATE END POINTS ARE NOT AFFECTED)

5.5 COAST DISTANCE

(LEVEL 13 in Programme Mode)

- COAST DISTANCE IS FACTORY SET AT 30mm.
- IT CAN BE VARIED IN INCREMENTS OF 10mm (1 flash of status) FROM 10mm to 250mm (25 flashes).

NB: Gates typically do not FREEWHEEL (RUN ON) the same amount each time. DO NOT set the COAST DISTANCE too long, otherwise on occasion, the gate could stop short (i.e. allow a little "clunk").