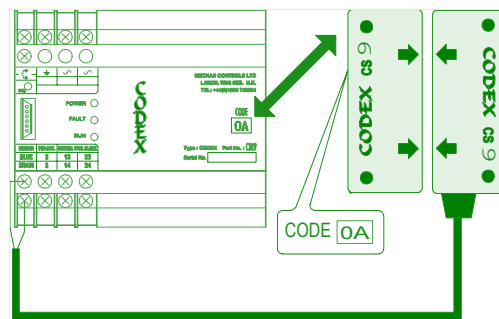


MECHAN CONTROLS

CODEXTM

ADDITIONAL INFORMATION FOR UNIQUELEY CODED SYSTEMS



Part Numbers For Uniquely Coded Components

CM9 Control Module
CX9 Extender Module
CS9 Safety Switch

CAUTION!

This information is designed to help suitably qualified personnel install and operate Mechan Safety Switch equipment. Before using this product, read this guide thoroughly along with any relevant European and/or National standards (e.g. Machinery Directive 89/392/EEC and it's amendments, Provision and Use of Work Equipment Regulations, further information can be obtained from Mechan Controls Limited or the European Hotline)
***** Keep this guide for future reference. *****

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2)

DESCRIPTION

The CODEX safety switch system is a 'fail safe' proximity switch suitable for machinery guard monitoring. The system comprises of a control unit and safety switch sensors. The control unit (CM9) is DIN rail mounting and houses the power supply, dual control relay outputs, external relay monitoring output and one safety switch sensor input and indicator output. This can be added to, making larger systems for monitoring more guards, by using the extender modules (CX9), each providing one safety switch sensor input and indicator output. The safety switch sensors are fully sealed, IP67, and are mounted on the machine guards. (See CODEX installation guide for detailed installation and fitting)

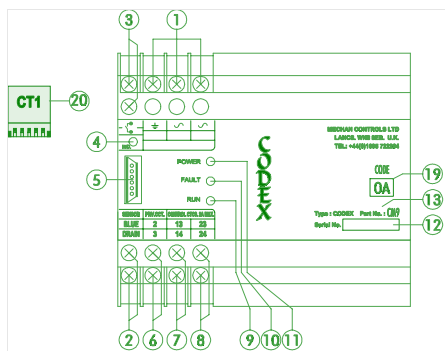
THE CM9 / CX9 / CS9 UNIQUE CODING

With this version of the CODEX system, the oscillator transmits a 'unique' factory set code to it's receiving control module. **Only when the oscillator and control module code match will the system operate.**

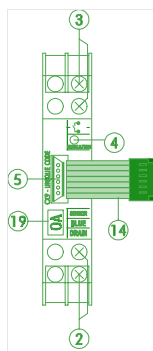
3)

PRODUCT IDENTIFICATION

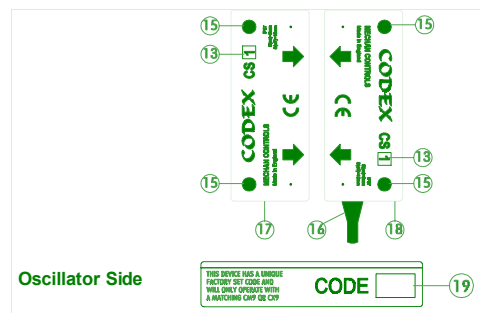
2a) CM9



2b) CX9



2c) CS9



- | | | | |
|--|---------------|--|--|
| 1 Supply (see label) or 24vdc. | 24/110/240vac | 9 Green LED - Run Indicator. | IP67 quick disconnect. |
| 2 Safety Switch sensor input. | | 10 Red LED - Fault Indicator. | 17 Oscillator (Moving part of sensor). |
| 3 Indicator output (Volt Free N/O contact). | | 11 Red LED - Power Indicator. | 18 Receiver (Fixed part of sensor). |
| 4 Gate open indicator. | | 12 Serial Number. | 19 Unique Factory set code. |
| 5 Control Bus. | | 13 Part Number. | 20 CT1 Control Bus Terminator |
| 6 External monitoring circuit / re-set button. | | 14 Control Bus Connector Strap. | |
| 7 Control Channel 1. | | 15 Fixing Holes 5mm diameter. | |
| 8 Control Channel 2. | | 16 Sensor cable exit: types 1/2/9 have a cable strain relief, type 3: has an | |

Mechan Controls Limited

Electronic Safety Switches

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SYSTEM ASSEMBLY

4) INSTALLATION

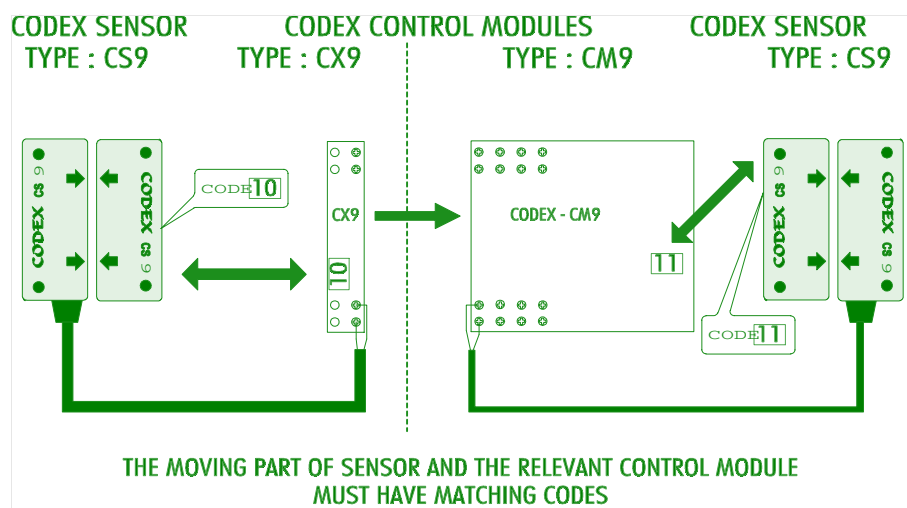
See standard CODEX instructions for full system installation and assembly information.

5) OPERATION

The UNIQUELY CODED version of the CODEX system operates as the standard un-coded version
Except:

The uniquely coded control modules , CM9 or CX9, will **only operate with an oscillator (the moving part of the safety switch sensor)** that has been factory set to the same code.

The code is printed on the side of the CS9 sensor (moving part only) and on the top and side of the CX9 / CM9 control module.



4) DIMENSIONS

See standard CODEX instructions for dimensional information.



The **CODEX** Safety switch complies with all relevant Essential Health and Safety Requirements of the Machinery Directive (89/392/EEC & amendments 91/368/EEC, 94/44/EEC).
The **CODEX** series has been independently tested to meet the 'Heavy Industrial' Specification of the EMC Directive for both emissions and immunity (BS EN 50081-2& 50082-2) The CE marking relates to the EMC Directive.
Copies of the Certificate of Conformity can be obtained from Mechan Controls Limited

In the interest of product development, specifications are subject to change without notice.
Document No. - 320-401v1 11/8/00

It is the responsibility of the user to ensure compliance with any acts or by-laws in force.

All information regarding Mechan equipment is believed to be accurate at the time of printing. Responsibility cannot be accepted for errors or omissions.

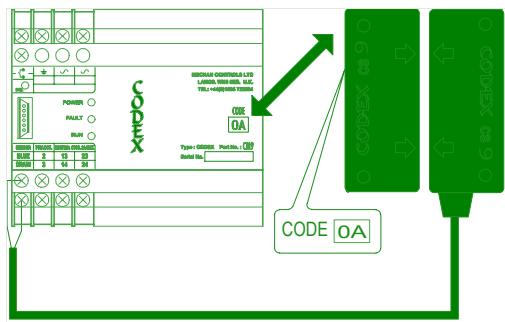
CODEX SAFETY SYSTEM

APPLICATION NOTES FOR UNIQUELY CODED CONTROL MODULES AND SENSORS

TYPES

CONTROL MODULE: CM9 / CX9

SENSORS: CS9



INTRODUCTION

The CODEX safety switch system has been designed so that only a CODEX oscillator (the moving part of the sensor) can operate the system. When the oscillator is within the 10mm switching distance it transmits a code through the receiver (the fixed part of the sensor) to the input channel, where it is decoded. If all input channels on the system are receiving the correct code the control relays can then be energized. Standard production units all have the same 'generic' code.

With the CM9 / CX9 / CS9 versions of the CODEX safety switch system, oscillators have individual, factory set codes, and can only be used to operate control modules with a matching code. This ensures an even higher degree of integrity within the control system. A CODEX system may contain one or more uniquely coded channels combined with standard 'generic' coded control modules and sensors. These uniquely coded sensors may be used as 'Electronic Keys' to stop all or part of a machine or plant at any given time thus rendering it safe to work on as described in the following applications.

APPLICATION No. 1 - KEY SYSTEM

- To use a coded sensor as a system key, mount one of the safety switch receivers (the fixed half), on or into to the control desk / panel and connect it to a uniquely coded channel within the control module, this can be either a CM9 or CX9. Fix the head so that the actuator block can be easily slipped into place and removed as required.
- When the correctly coded safety switch oscillator (the moving half) is in place, and all other gate switches attached to the same control unit are closed, the control relays can be energized allowing the plant to run in 'normal' mode.
- **If an operator needs to safely access a remote part of the plant, he can take the coded control panel oscillator 'key' with him thus ensuring that the plant cannot be restarted in his absence.**
- Replacing the oscillator on his/her return allows the system to be re-set and the plant restarted.
- The unique factory set code ensures that no other oscillator can be used to start the system.

APPLICATION No.2 - AUTOMATIC / MANUAL OPERATION

- In systems where part of a plant can be stopped for short periods of time for maintenance while the rest of the plant can be kept running, the CODEX coded system can be used as a local key to stop that part of the plant.
- By 'zoning' the control system, one control unit can be used to stop that section of plant, the removable oscillator block is then mounted on a gate giving access to that part of the plant.
- **When an operator needs to enter that part of the plant he can stop the machinery and remove the oscillator from the gate ensuring that it cannot be restarted whilst he is inside.**
- Whilst inside the restricted area a separate CODEX receiver attached to a different control module and set to accept the same code could be used to allow inching, jogging or manual operation of the machinery. Only when the operator takes the coded oscillator back out of the restricted area, places it with the original receiver and closes the access gate will the machinery be allowed to run in automatic / normal mode.

- ***The design of any system should be such that safe working conditions are obtained at all times and in all circumstances.***
- ***These notes are for guidance only. Refer to the appropriate Machinery Safety Standards and Directives***
- ***Mechan Controls Ltd. accept no responsibility for the safe performance of individual systems.***