



Heinzmann GmbH & Co. KG
Engine & Turbine Controls






Am Haselbach 1
D-79677 Schönau (Schwarzwald)
Germany

Phone +49 7673 8208-0
Fax +49 7673 8208-188
E-mail info@heinzmann.com
www.heinzmann.com

V.A.T. No.: DE145551926

HEINZMANN®
Electronic Speed Governor

Motorpotentiometer

 <p>Warning</p>	<p>Read this entire manual and all other publications appertaining to the work to be performed before installing, operating or servicing your equipment.</p> <p>Practice all plant and safety instructions and precautions.</p>
 <p>Danger</p>	<p>Failure to follow instructions may result in personal injury and/or damage to property.</p> <p>HEINZMANN will refuse all liability for injury or damage which results from not following instructions</p>
 <p>Danger! High Voltage</p>  <p>Danger</p>	<p>Please note before commissioning the installation:</p> <p>Before starting to install any equipment, the installation must have been switched dead!</p> <p>Be sure to use cable shieldings and power supply connections meeting the requirements of the <i>European Directive concerning EMI</i>.</p> <p>Check the functionality of the existing protection and monitoring systems.</p>
 <p>Danger</p>	<p>To prevent damages to the equipment and personal injuries, it is imperative that the following monitoring and protection systems have been installed:</p> <p>Overspeed protection acting independently of the speed governor</p> <p>Overtemperature protection</p> <p>HEINZMANN will refuse all liability for damage which results from missing or insufficiently working overspeed protection</p> <p>Generator installation will in addition require:</p> <p>Overcurrent protection</p> <p>Protection against faulty synchronization due to excessive frequency, voltage or phase differences</p> <p>Reverse power protection</p>
	<p>Overspeeding can be caused by:</p> <p>Failure of the voltage supply</p> <p>Failure of the actuator, the control unit or of any accessory device</p> <p>Sluggish and blocking linkage</p>



Warning

The examples, data and any other information in this manual are intended exclusively as instruction aids and should not be used in any particular application without independent testing and verification by the person making the application.



Danger

Independent testing and verification are especially important in any application in which malfunction might result in personal injury or damage to property.

HEINZMANN make no warranties, express or implied, that the examples, data, or other information in this volume are free of error, that they are consistent with industry standards, or that they will meet the requirements for any particular application.

HEINZMANN expressly disclaim the implied warranties of merchantability and of fitness for any particular purpose, even if **HEINZMANN** have been advised of a particular purpose and even if a particular purpose is indicated in the manual.

HEINZMANN also disclaim all liability for direct, indirect, incidental or consequential damages that result from any use of the examples, data, or other information contained in this manual.

HEINZMANN make no warranties for the conception and engineering of the technical installation as a whole. This is the responsibility of the user and of his planning staff and specialists. It is also their responsibility to verify whether the performance features of our devices will meet the intended purposes. The user is also responsible for correct commissioning of the total installation.

Contents

	Page
1 Safety Instructions and Related Symbols	1
1.1 Basic Safety Measures for Normal Operation.....	2
1.2 Basic Safety Measures for Servicing and Maintenance	2
1.3 Before Putting an Installation into Service after Maintenance and Repair Works	3
2 Application and Mode of Operation.....	4
2.1 Standard Potentiometer	4
2.2 Additional Relay Control	4
3 Models	6
3.1 Without Stop Limitation Switches	6
3.2 With Stop Limitation Switches	6
3.3 With Relay Control.....	6
4 Specification.....	7
5 Electrical Connection.....	8
5.1 Connection without Relay Control.....	8
5.2 Connection with Relay Control	9
6 Measurements.....	10
7 Oding Specifications	11
8 Order Specifications for Manuals.....	12

1 Safety Instructions and Related Symbols

This publication offers wherever necessary practical safety instructions to indicate inevitable residual risks when operating the engine. These residual risks imply dangers to

persons

product and engine

environment.

The symbols used in this publication are in the first place intended to direct your attention to the safety instructions!



Warning

This symbol is to indicate that there may exist dangers to the engine, to the material and to the environment.



Danger

This symbol is to indicate that there may exist dangers to persons. (Danger to life, personal injury))



Danger!
High
Voltage

This symbol is to indicate that there exist particular danger due to electrical high tension. (Mortal danger).



Note

This symbol does not refer to any safety instructions but offers important notes for better understanding the functions that are being discussed. They should by all means be observed and practiced. The respective text is printed in italics.

The primary issue of these safety instructions is to prevent personal injuries!

Whenever some safety instruction is preceded by a warning triangle labelled “Danger” this is to indicate that it is not possible to definitely exclude the presence of danger to persons, engine, material and/or environment.

If, however, some safety instruction is preceded by the warning triangle labelled “Caution” this will indicate that danger of life or personal injury is not involved.

The symbols used in the text do not supersede the safety instructions. So please do not skip the respective texts but read them thoroughly!

In this publication the Table of Contents is preceded by diverse instructions that among other things serve to ensure safety of operation. It is absolutely imperative that these hints be read and understood before commissioning or servicing the installation.

1.1 Basic Safety Measures for Normal Operation

- The installation may be operated only by authorized persons who have been duly trained and who are fully acquainted with the operating instructions so that they are capable of working in accordance with them.
- Before turning the installation on please verify and make sure that
 - only authorized persons are present within the working range of the engine;
 - nobody will be in danger of suffering injuries by starting the engine.
- Before starting the engine always check the installation for visible damages and make sure it is not put into operation unless it is in perfect condition. On detecting any faults please inform your superior immediately!
- Before starting the engine remove any unnecessary material and/or objects from the working range of the installation/engine.
- Before starting the engine check and make sure that all safety devices are working properly!

1.2 Basic Safety Measures for Servicing and Maintenance

- Before performing any maintenance or repair work make sure the working area of the engine has been closed to unauthorized persons. Put on a sign warning that maintenance or repair work is being done.
- Before performing any maintenance or repair work switch off the master switch of the power supply and secure it by a padlock! The key must be kept by the person performing the maintenance and repair works.
- Before performing any maintenance and repair work make sure that all parts of engine to be touched have cooled down to ambient temperature and are dead!
- Refasten loose connections!
- Replace at once any damaged lines and/or cables!
- Keep the cabinet always closed. Access should be permitted only to authorized persons having a key or tools.

- Never use a water hose to clean cabinets or other casings of electric equipment!

1.3 Before Putting an Installation into Service after Maintenance and Repair Works

- Check on all slackened screw connections to have been tightened again!
- Make sure the control linkage has been reattached and all cables have been reconnected.
- Make sure all safety devices of the installation are in perfect order and are working properly!

2 Application and Mode of Operation

2.1 Standard Potentiometer

The HEINZMANN motor potentiometers may be used as a speed setting potentiometer in the full range of HEINZMANN electronic speed governors. These potentiometers permit manual potentiometer adjustment or electrical remote adjustment via switches.

A 24 DC motor adjusts the potentiometer via a gearbox. This allows the speed governor to be driven electrically insulated from the potentiometer control. Manual adjustment is also possible due to a build-in slip clutch.

The models with stop limitation switches (ES) permit the adjustment angle to be limited with adjustable cams for the purpose of electrical adjustment.

2.2 Additional Relay Control

The HEINZMANN- motor potentiometer is often in use as an interface to other parts of the system. The coupling has to be done with crosswise locking of the relays as shown in the figure below. The motor potentiometer with relay control includes this interlocking circuit already.

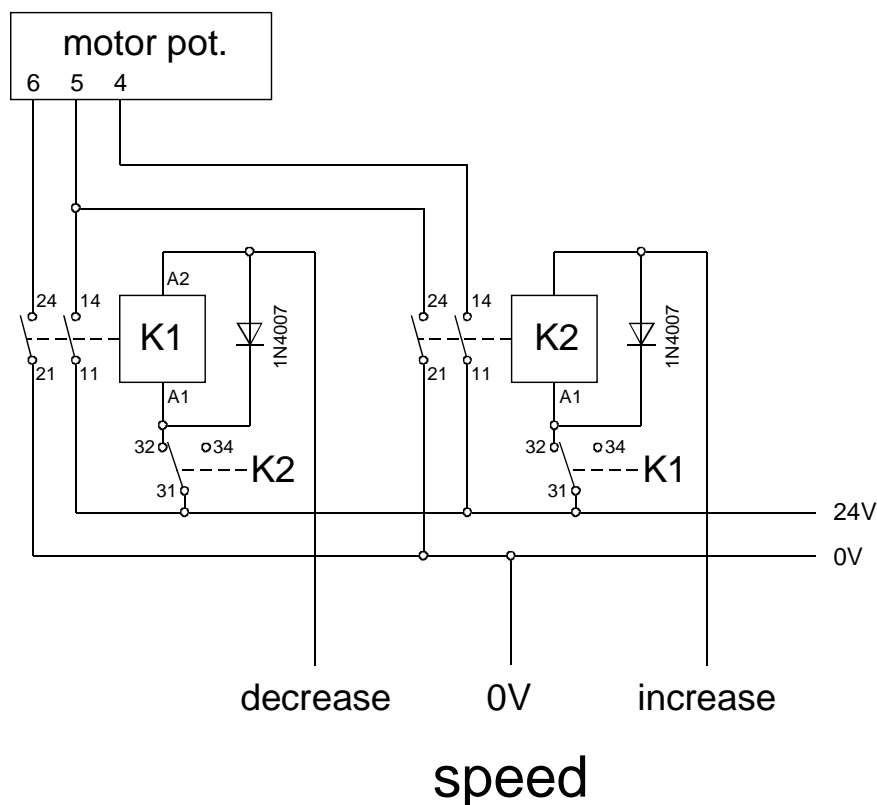


Figure 1: Interlocking Circuit

When connected to a PLC make sure that no overlaying in the control signal occurs. See diagrams below for correct timing.

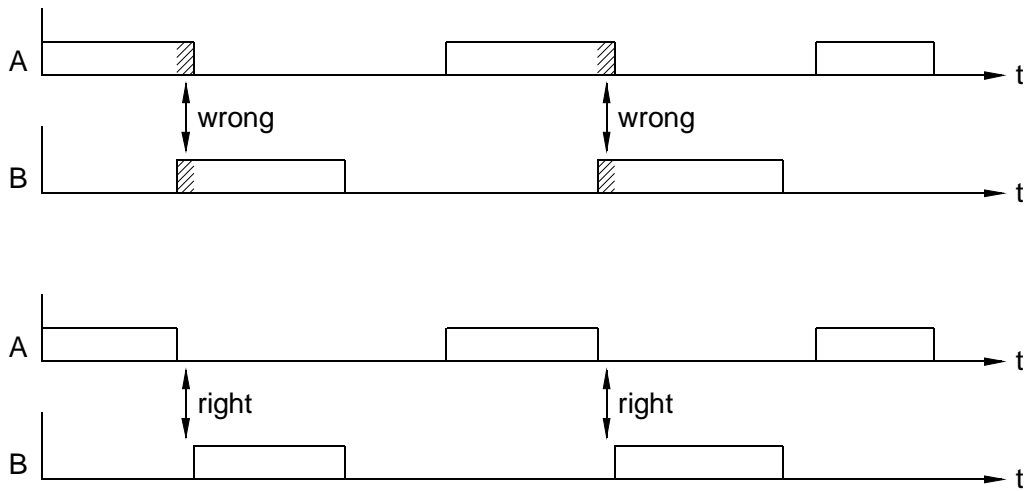


Figure 2: Reversing Times

The range of models with relay control are to be remote controlled with two key switches only. Changing the sense of rotation and interlocking the input is automatically done with an internal relay board.

3 Models

3.1 Without Stop Limitation Switches

SW 03 - 1 - M - 15 sec.	adjustment angle approx. 300° adjustment time approx. 15 sec.
SW 04 - 10 - M - 150 sec.	adjustment angle approx. 10 turns adjustment time approx. 150 sec.
SW 07 - 1 - M - 120 sec.	adjustment angle approx. 300° adjustment time approx. 120 sec.

3.2 With Stop Limitation Switches

SW 03 - 1 - M - ES - 15 sec.	adjustment angle approx. 300° adjustment time approx. 15 sec.
SW 07 - 1 - M - ES - 120 sec.	adjustment angle approx. 300° adjustment time approx. 120 sec.

3.3 With Relay Control

All the above mentioned models are available with an additional interlocking-relay board. In the designation, you have to insert a “- M” behind the “- K”.

4 Specification

Resistance	5 kOhm
Supply voltage, motor	24 V DC $\pm 20\%$
Current consumption	max. 0.3 A
Temperature range	-55°C up to +70°C
Humidity	up to 98 %
Protection grade	IP 44
Weight	approx. 2.6 kg

5 Electrical Connection

5.1 Connection without Relay Control

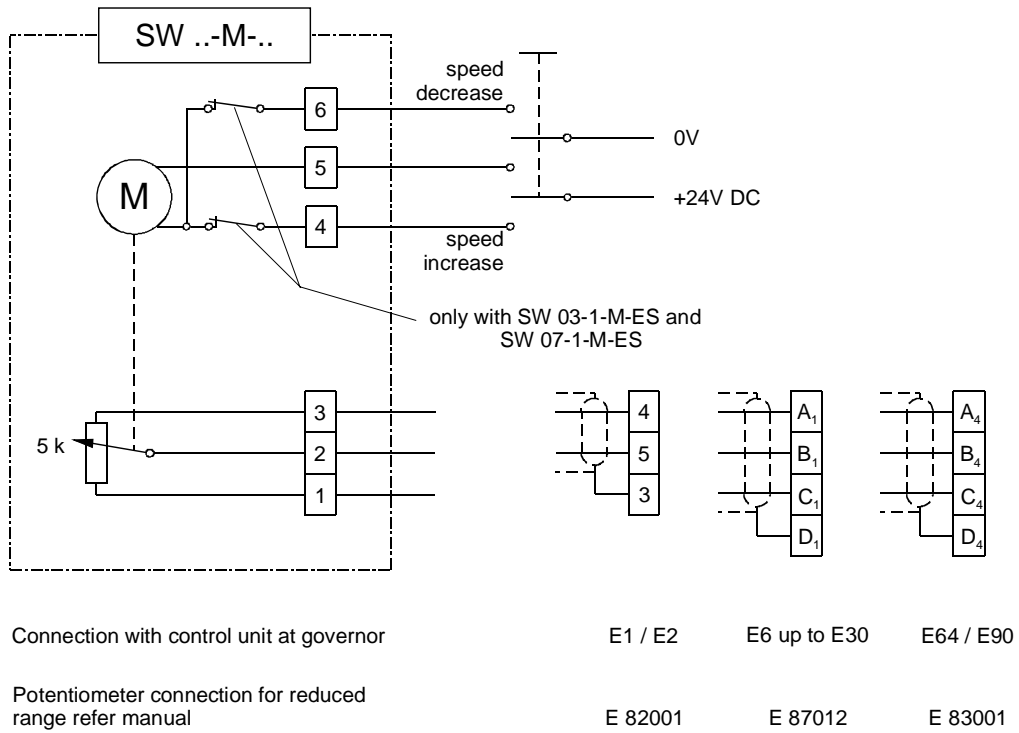


Figure 3: Connection without Relay Control

5.2 Connection with Relay Control

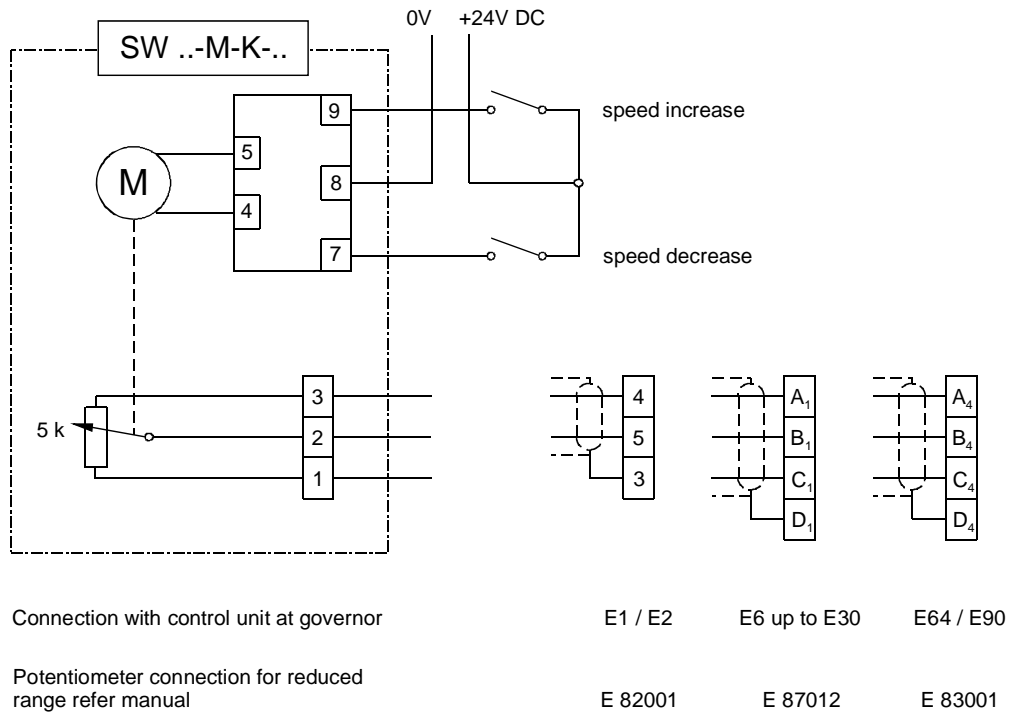


Figure 4: Connection with Relay Control

6 Measurements

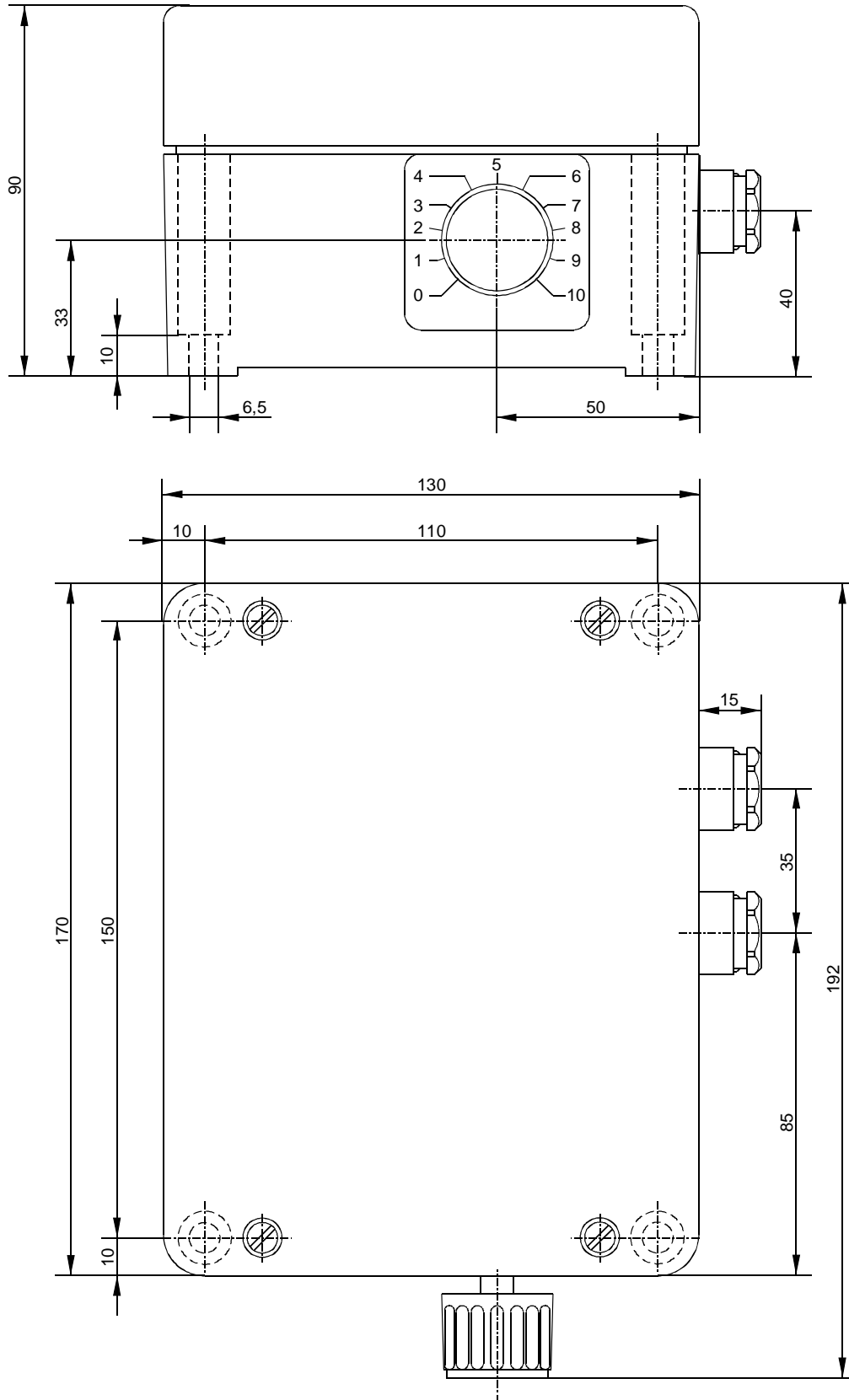


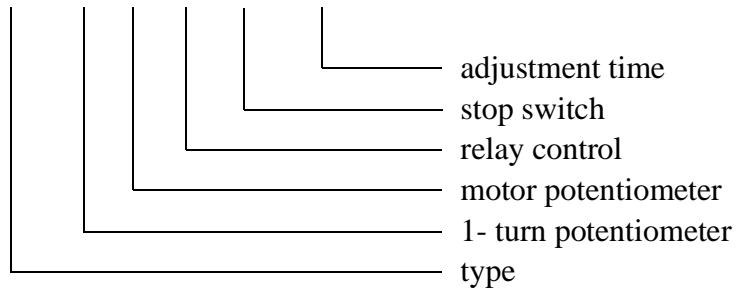
Figure 5: Measurement

7 Odering Specifications

The designations specified in chapter 2 must be used for orders.

e.g.

SW 07 - 1 - M - K - ES - 120 sec.



8 Order Specifications for Manuals

There is no charge for our technical manuals ordered in reasonable quantities.

Order the necessary manuals on our speed governors from your nearest

[HEINZMANN location](#).

(Please click on “HEINZMANN location” to see the list of our subsidiaries and agents in the world).

Please include the following information:

- your name,
- the name and address of your company (you can simply include your business card),
- the address where you want the manuals sent (if different from above),
- the number(s) (as on front page bottom right) and title(s) of the desired manual(s),
- or the technical data of your **HEINZMANN** equipment,
- the quantity you want.

You can directly use the following fax-form for ordering one or several manuals.

Most of the manuals are available as Acrobat PDF-files, too. On request they can be send via e-mail.

We solicit comments about the content and the presentation of our publications. Please, send your comments to:

HEINZMANN GmbH & Co. KG

Service Department

Am Haselbach 1

D-79677 Schönau

Germany

Fax Reply

Order for HEINZMANN technical manuals

Fax-Hotline +49 7673 8208 194

Please send me the following manuals:

Quantity	No. of the manual	Title

Please send me your new sales documentation about

- () the HEINZMANN Analogue Governors Application:.....
- () the HEINZMANN Digital Governors Application:.....
- () the HEINZMANN Gas Engine Equipment Application:.....

Company

Contact Person.....

Department

Address..... Country/Code/Town.....

Phone..... Fax.....

E-Mail.....

Activity.....

Date