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Extension IQ Easy



Control unit

CE

The Dutch manual is the original manual and is translated to German and English.

CONTENTS

Preface	2
Explanation of symbols	2
1 Introduction	4
2 Description and operation	5
3 Safety	6
4 Technical specifications	7
5 Installation	8
5.1 Checks	8
5.2 General	8
5.3 Fitting the Extension IQ Easy	9
5.4 Electrical installation	9
5.4.1 AC version	10
5.4.2 24 V DC version	
5.4.3 Devices	
5.4.4 Serial communication COM ports 5.4.5 Installation of the protection cover	
5.5 Mounting the Extension in a machine panel	
5.6 Assigning the Extension IQ Easy address	15
5.6 Assigning the Extension IQ Easy address	
	17
6 Commissioning and operation 6.1 Main screen	17 17
6 Commissioning and operation	17 17 18
6 Commissioning and operation 6.1 Main screen 6.2 Setting Extension IQ Easy parameters in Global Settings screen (expert mode)	
 6 Commissioning and operation	
 6 Commissioning and operation. 6.1 Main screen	
 6 Commissioning and operation. 6.1 Main screen 6.2 Setting Extension IQ Easy parameters in Global Settings screen (expert mode)	
 6 Commissioning and operation	
 6 Commissioning and operation	
 6 Commissioning and operation	

Preface

This manual is intended for the installation and use of the EXTENSION IQ EASY in combination with the MANAGER IQ EASY.

This manual describes the installation of the Extension IQ Easy and the basic menus in the Manager. The different possibilities of the connected equipment using the manager is described in detail in the manual of the relevant device.

The term *devices* in this manual refers to Simco-Ion 24V DC equipment suitable for connecting to the Extension IQ Easy and Manager IQ Easy.

Where in the user manual, Manager and Extension are mentioned, this respectively refers to the Manager IQ Easy and the Extension IQ Easy.

This manual must be available at all times to staff operating the equipment. Read through the entire manual before installing and commissioning the product. Follow the instructions set out in this manual to ensure proper operation of the product and to retain your entitlement under the guarantee.

The guarantee terms are set out in the General Terms and Conditions of Sale of SIMCO (Nederland) B.V.

Explanation of symbols

The following symbols may appear in this manual or on the product.



Indicates special information to prevent injury or significant damage to the product or the environment.



Danger: Indicates information for preventing electric shocks.



Attention

Warning:

Important information for making the most efficient use of the product and/or for preventing damage to the product or the environment.



Nothing connected



Neutralizing equipment, e.g. Performax IQ Easy



Charging equipment, e.g. ChargeMasterMicro IQ Easy



Sensor (measuring equipment) e.g. Sensor IQ Easy bar



Detection equipment (perforation detector), e.g. Perfomaster

The background colors indicate the status of connected devices:

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Inactive or no communication

Active and operating OK, without warnings or alarms

Standby, waiting for start command

Active, but with a warning

Active, but with an alarm

The following symbols are also used:



Settings

Information

Active

Standby

Inactive or incorrect entry

1 Introduction

The Extension IQ Easy is equipped with an on/off switch, 6 connectors for connecting Simco-Ion equipment (devices) and 2 serial COM connectors for connecting the Manager IQ Easy and possibly further Extension IQ Easy's. The status of the Extension IQ Easy and the connected IQ system is indicated by means of 3 status LEDs. For a detailed explanation, please also refer to the Manager IQ Easy user manual.

To further expand the system to up to 30 devices, the system has 2 serial COM connectors for connecting further Extension IQ Easy control units.

The Extension IQ Easy is available with 24 V DC input and as an universal 100-240 V AC 50-60 Hz version.

Each Device port provides the 24V DC supply voltage and the communication with the device. All device ports and other I/O ports are controlled through the internal IQ Easy Backplane interface.



Figure 1, Extension IQ Easy

2 Description and operation

After starting the Extension IQ Easy, it will be recognized by the Manager and an additional tab is displayed on the main screen.



The Extension will detect the connected devices and then communicate this to the Manager through the COM cable. Once the detection of the connected devices is completed, the hourglass will disappear.

On the Manager, the connected devices are displayed on the corresponding tab [2, 3, 4 or 5] of the corresponding Extension.

If you require more information regarding a specific device, you can retrieve this information by pressing the appropriate icon.



4 tabs will then be displayed. If a tab has several pages, you can scroll trough them, using the

buttons. Each tab contains specific information about the connected device, which will vary for each type of device. More or less info is displayed depending on the log-on level for the user level.



Information: various parameters, settings, limit values, operation modes and current readings are displayed in a list.

Graphics: graphical representations of actual measurement values of the device

Action Log: list of status changes of the device with date and time stamp

Data Log: list of readings with date and time stamp.

Maintenance: possible maintenance instructions.

On each tab, you can set the device to standby \mathbf{I} or active \mathbf{I} mode.

This specific information of each tab is described in the manual of the corresponding device.

3 Safety

The following safety guidelines must be observed in order to prevent physical injury and damage to objects or the Extension IQ Easy itself.



- Electrical installation must be carried out by an electrical engineer with relevant training and qualifications and in accordance with the applicable national and local regulations.
- The Extension IQ Easy must not be used in any environment where there are fire or explosion hazards.
- The Extension IQ Easy must not be exposed to vibrations or shocks.
- Use the Extension only in combination with matching Simco-Ion equipment.
- Also read the manual of the equipment to be connected before commissioning.
- The Extension IQ Easy is not intended as a safety component in machines.
- Do not install the Extension in dirty, damp or any other areas in which chemicals or other corrosive materials are used.



- Make sure that the equipment is properly earthed. Earthing is necessary to ensure proper and safe operation and to prevent electric shocks upon contact.
 The AC version is earthed through the power cable. Plug this into an earthed outlet.
 With the 24 V DC version, the earthing connector of the 24 V power connector has to be
- connected to the machine earthing or an earthed machine part.
- To guarantee safe operation, keep the Manager free of dirt, dust and moisture.

- The device may only be serviced by qualified Simco-Ion staff.

Note:

- Making changes, adjustments etc. without prior written consent or carrying out repairs using non-original parts will invalidate the device's guarantee.

Except for the 230 AC input connector, all connectors for the devices and the communication have signals that are working on a safe 24 V DC.

That is why all these inputs and outputs can be connected and disconnected safely while the Extension is operating.

4 Technical specifications

Supply voltage

Frequency Max power consumption

Purpose Protection class Operating temperature Installation Device output 100-240 V AC version Device output 24 V DC version Machine I/O Weight $100 - 240 \vee AC \text{ nom.} (90 - 305 \vee AC)$ $24 \vee DC - 3/+10\%$ 50 - 60 Hz nom. (47 - 63 Hz) $300 \vee (100 - 240 \vee AC \text{ version})$ $360 \vee (@15 \text{ A}) (24 \vee DC \text{ version})$ Industrial, indoor use IP52 $0 - 55 \degree C$ Free of dust and vibration $24 \vee DC \ 3 \text{ A max. per port, total max. 9 \text{ A}}$ $24 \vee DC \ 3 \text{ A max. per port, total max. 13 \text{ A}}$

5,5 kg (100 – 240 V AC version) 3,9 kg (24 V DC version)





Figure 2, Dimensions Extension IQ Easy





Figure 3, Drilling template Extension IQ Easy

5 Installation



- The electrical installation must be carried out by an electrical engineer with the relevant training and qualifications.
- Disconnect the power supply before carrying out any work on the unit.
- Consult the manuals of the device to be connected for proper and safe connecting and use of the device.

5.1 Checks

- Check that the equipment is undamaged and that you have received the correct version.
- Check whether the data on the packing slip corresponds to the data shown on the product received.
- Check whether the voltage shown on the rating plate corresponds to the mains voltage you intend to use.

If you have any problems or are unsure, please contact Simco-Ion or your regional agent.

5.2 General

Place the Extension IQ Easy on a well visible and easily accessible place on or nearby the machine.

5.3 Fitting the Extension IQ Easy

The Extension IQ Easy can be placed on a flat surface or mounted in a machine panel.



Figure 4, Removal of the plastic bottom cover Extension IQ Easy.

Mounting on a flat surface:

- Remove the plastic bottom cover of the Extension by bending the side flaps slightly outward and sliding the cover up.
- Use the supplied drilling templates to mark the mounting holes. Make sure that there is sufficient space at the bottom for installing the cables.
- Drill the mounting holes into the mounting surface, mount suitable bolts into the two top holes and allow the bolts to stick out 2,5 mm.
- Hang up the Extension with suspension points behind the bolt heads.
- Secure the lower mounting eye of the Manager with a suitable bolt.

5.4 Electrical installation



- Disconnect the power supply before carrying out any work on the unit.
- The electrical installation must be carried out by an electrical engineer with the relevant training and qualifications.
- Make sure that the equipment is properly earthed. Earthing is necessary to ensure proper and safe operation and to prevent electric shocks upon contact. With the AC version, plug the power cable into an earthed outlet. With the 24 V DC version, the earthing connector of the 24 V power connector has to be connected to the machine earthing or an earthed machine part.
- Connect the Extension in accordance with local regulations.

5.4.1 AC version

 Plug the power cable into the IEC connector and plug the outlet plug into an earthed wall outlet.

5.4.2 24 V DC version

- Connect the 24 V DC power connector as shown in figure 5.
- Connect the earthing (ground) point with an earthed machine part or a shared earthing point.



Figure 5, 24 V Input Extension IQ Easy

5.4.3 Devices

6 M12 device ports are available for connecting various Simco-Ion devices. Connect the devices with the appropriate M12 device ports 1 to 6.

Connecting is possible using standard cables with M12 5 pin male-female connectors. The length of the cables is limited since the supply voltage of the devices is also routed through this cable. If the desired length exceeds the maximum specified length, a cable with a larger diameter for the used wires may be selected, so that the required supply voltage is still available during operation.

For this, Simco-Ion provides seperate M12 5 pin connectors for connecting these cables (the connection between the manager and the device is 1: 1) see also figure 6.



Figure 6, Wiring device to Manager IQ Easy and Extension IQ Easy

If an old generation (non IQ) device is used, preferably connect this with ports 5 or 6 IQ/Non-IQ. These ports can be configured so that *remote on/off* and operation OK feedback can be

processed by the Manager IQ. For this, use regular 1:1 male-female cables with M12 5 pin connectors as well.

5.4.4 Serial communication COM ports

For expanding the system with more than 6 devices, two COM ports are available on both the Manager and Extension, to which Extension IQ Easy's can be connected. For looping-through the Manager and Extensions, the COM ports can be connected randomly. See figure 7. Standard cables with 3 pin M8 male-female connectors can be used for this. These are available from Simco-Ion.



Figure 7, Wiring serial communication COM connectors between Manager IQ Easy and Extension IQ Easy

5.4.5 Installation of the protection cover

- After all cables are connected, the plastic cable protection cover can be mounted.

5.5 Mounting the Extension in a machine panel



Figure 9, Extension IQ Easy mounted in a machine panel

The Extension IQ Easy can be mounted into a machine panel so that only the plastic part of the Extension is visible. The wiring will then be hidden behind the machine panel. The maximum

thickness of the machine panel is 6 mm. Follow the steps below to mount the Extension IQ Easy.

- Drill and saw the necessary recesses and holds into the machine panel. Use the supplied drilling template for this. Make sure you leave the required free space around the holes.



- The plastic front of the Extension IQ Easy is attached to the housing by means of 4 snap connectors. Carefully pull away the plastic front from the housing. The plastic part can be loosened using a flat screwdriver. There are two recesses below the plastic part for this. Note: Do not pull on the wiring between the front and the housing.



- Remove all connectors from the front.

- Remove the M5 tap bolts and washers (1) and the 4 snap connectors (2 and 3) from the housing.



- Place the housing behind the machine panel and secure it with the 4 tap bolts and washers (1). Make sure that the wires are not squeezed between the housing and the machine panel.



Screw the four snap connectors into the housing through the machine panel.



Mount the wiring connectors from the housing back onto the front.



Click the front onto the four snap connectors on the machine panel.



5.6 Assigning the Extension IQ Easy address

To be actively included in the system, every Extension IQ Easy requires its own address. Set the DIP switch behind the plastic front to a unique address (1, 2, 3 or 4 – Manager/HMI usually has address 0).

- The plastic front of the Extension IQ Easy is attached to the housing by means of 4 snap connections. Carefully pull away the plastic front from the housing. The plastic front part can be loosened using a flat screwdriver. To help in this regard, there are two recesses below the plastic part.

Note: Do not pull on the wiring between the front and the housing.



- Using a small screwdriver, set the DIP switches in the Extension to a unique address.
- Click on the front again and onto the four snap connectors on the housing.

6 Commissioning and operation

Switching on

- Make sure that supply voltage is available in the power cable.
- Switch the Extension IQ Easy on using the power switch.

Note:

- The Extension IQ Easy is suitable for continuous operation.
- Switching off the Manager or the Extension means that all connected devices to the Extension no longer receive the supply voltage and hence no longer operational.

6.1 Main screen

For a complete description of the operation of the Manager IQ Easy and the connected devices, please refer to the corresponding user manuals.

Only specific cases relating to the Extension are described below.

After starting the Extension, the Manager will display an additional tab on the main screen





The communication is started and the parameters of the connected devices are read. If the icon appears again, all parameters are known and the connected devices can be displayed by clicking on the tab with the number of the corresponding Extension.



Further display and control of the devices is described in the Manager IQ Easy user manual.

6.2 Setting Extension IQ Easy parameters in Global Settings screen (expert mode)

Select the tab with the number of the Extension

Various settings of the Extension itself are displayed by selecting the information **1** icon. To

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adjust the parameters select **W**, "expert".

Once logged in you can directly scroll to the parameters and adjust them without selecting again.

If the user is logged in at a lower user level, not all parameters will be displayed.

6.2.1 Setting Extension name, Extension Machine position

To make the Extension more recognisable on the screen of the Manager and in the data log file, a specific name can be assigned to the Extension.

If desired, adjust the parameters: Device name, Machine position:

- Select the information page with the parameters to be changed by:
- 🔯, (n)x parameter 🔼 , enter name or value, confirm with

6.2.2 (De)activating Extension logging (expert mode)

If desired, the Manager can log data in a file regarding the operation of the Extension. To (de)activate logging, the parameter *Data logging* has to be changed.

- [[, (n)x] "Data logging" [], select On or Off]

6.3 Setting Extension Backplane parameters (expert mode)

All device ports and other I/O ports are controlled through the IQ Easy Backplane interface. This interface has its own settings and software.

Various settings of the Extension Backplane are displayed, when on the main screen

the tab of the Extension and then directly the information to selected. To adjust

the parameters, make sure you are logged in at the expert user level, then select **LU**, the

number, **I** and then

Once logged in you can directly scroll to the parameters and adjust them without selecting

again.

If the user is logged in at a lower user level, not all parameters will be displayed.

A particular name can be assigned to the Backplane as well.





6.3.1 Extension Backplane RS485 A & B line switch (expert mode)

The Backplane can switch the RS485 lines in order to establish communication with a device. This parameter is activated by default. With this parameter certain wiring errors can also be corrected automatically.

This automatic switching can be deactivated:



6.3.2 Adjusting Extension Backplane Autorun parameter (expert mode)

The Backplane has also an Autorun parameter that determines whether the Backplane is activated automatically after a power interruption or after connecting a device. In specific cases it might be necessary to deactivate this parameter. Select whether this desired:



6.3.3 Making Device Port 5 & 6 suitable for non IQ Devices or IQ devices (expert mode)

If devices without the IQ interface, with an analogue interface with remote on/off and HV-OK, have to be connected, these devices can be connected to the IQ platform with limited options. Device port 5 and 6 have been prepared for this. The analog device can be set to standby or active mode with the manager and the HV-OK signal will be displayed by the manager. (OK= blue, Not OK= yellow= warning)



7 Functional check

The Extension operates properly, when the tab number is displayed on the main screen and the green power LED lights up on the front.

7.1 Warnings

The manager generates a warning when a device connected to the Extension has a status requiring the user's attention. The particular device will keep functioning and, if necessary, be switched into a safe mode. A warning will be displayed with an orange/yellow indication in the device icons and the general status icon(s)



7.2 Alarms

The Manager generates an alarm if a device connected to the Extension or the Manager detects a situation in which the values set by the user or Simco-Ion are exceeded, which may lead to a dangerous situation. To prevent damage, the relevant device will be switched off in most cases. An alarm with a red indication will be displayed.

8 Maintenance

The Extension IQ Easy does not require regular maintenance. Keep it clean by not working with dirty fingers.

Check the connection cables regularly for damage. Replace damaged connection cables immediately.

9 Faults



Warning: The electrical installation must be carried out by an electrical engineer with the relevant training and qualifications.

Problem	Cause	Solution
Green power LED does not light up and connected devices do not work	No supply voltage	Turn the power switch to on
		Supply 24 V DC or 100-230 V AC
		check the wiring.
Extension's green LED lights up, but no additional tab is displayed on the Manager	No communication possible	Check if the COM cable is connected and if it can establish a connection to the Manager
	Address setting is used twice	Change the address to an address not yet used.
IQ device connected to port 5 or 6 doesn't work	Port is configured for Non IQ (analog) device	Change Backplane setting for port 5 or 6 to IQ
Device is not recognised	Communication is not established	Check the wiring
by Manager		Detach the device and reconnect (same or other port) Change the RS485 A&B switch parameter and retry Check if a Simco-Ion IQ suitable device is connected (rating plate)
Device cannot be switched on or off using the screen (icons change, but the device remains in the same status	Device is configured to react to the remote on/off input of the machine control/PLC	Change remote on/off source parameter to Continuous
Data is not saved onto the USB flash drive.	USB flash drive is not recognised.	Power down and then power u with USB flash drive plugged into the manager
	Folder "log files" is not present in the root path of the USB stick	Create a map "log files" directly in the root path
FTP address is not opened in the browser	Address displayed in settings is an outdated address.	Make sure that the manager is connected to the network, ther power down and up, retrieve the new address and enter this address in the browser.

10 Repairs



- Repairs must be carried out by an electrical engineer with the relevant training and qualifications.
- The electrical installation and repair must be carried out by an electrical engineer with the relevant training and qualifications and in accordance with the applicable national and local regulations.

Parts of the Extension cannot be repaired. To order parts, see the spare parts list. Simco-Ion advises you to send the Extension to Simco-Ion for repairs. Request an RMA form by sending an e-mail to <u>service@simco-ion.nl</u>. Pack the Extension properly and clearly state the reason for return.

11 Disposal

Observe the applicable local environmental regulations when disposing of the equipment.

OR



At the end of its service life, do not throw the device away with the normal waste but hand it in at an official collection point.

By doing so, you will help to protect the environment.

Spare parts



Extension IQ Easy

Connectors and connecting cables DEVICES

7519020352 Connector IQ M12 male straight ø4-6 mm cables 1 Connector IQ M12 male straight ø6-8 mm cables 7519020353 2 Connector IQ M12 male right-angled ø4-6 mm cables 7519020357 Connector IQ M12 male right-angled ø6-8 mm cables 7519020358 Cable device M12 female male straight 5 m shielded for cable chain 3 7519020383 7519020384 Cable device M12 female male straight 10 m shielded for cable chain 7519020386 Cable device M12 female male straight 5 m for cable chain Cable device M12 female male straight 10 m for cable chain 7519020387 Cable device M12 female male straight 2 m 7519020390 Cable device M12 female male straight 5 m 7519020391 Cable device M12 female male straight 10 m 7519020392 Connector device M12 female straight ø4-6 mm cables 4 7519020350 Connector device M12 female straight ø6-8 mm cables 7519020351 7519020355 Connector device M12 male right-angled ø4-6 mm cables 5 Connector device M12 male right-angled ø6-8 mm cables 7519020356 Cable device M12 female straight 5 m 6 7519020365 7519020366 Cable device M12 female straight 10 m Cable device M12 female straight 10 m shielded for cable chain 7519020380

7 7519020375 Cable device M12 female right-angled 5 m 7519020376 Cable device M12 female right-angled 10 m

Connecting cables COMM

8	7519020291	Cable IQ M8 female-male straight 5 m
	7519020292	Cable IQ M8 female-male straight 10 m
	7519020294	Cable IQ M8 female-male straight 25 m

Other parts

9146340700	Power cord 230 V IEC-C13, 2m
9370000205	Power connector 24 V, ø4 - 6,5 mm cables

Spare parts can be obtained from the agent in your region or from SIMCO (Nederland) B.V.

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