

Tumble Dryer

Easy Control

Refer to Page 6 for Model Identification

Programming

Original Instructions

Keep These Instructions for Future Reference.

CAUTION: Read the instructions before using the machine.

(If this machine changes ownership, this manual must accompany machine.)

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Safety Information

Important Safety Instructions

	WARNING
Before operating a machine controlled by an electronic programmer, read this manual. Incorrect use can result in serious injuries or damage to the machine controls. Ignoring instructions can cause an incorrect machine function, which may result in injuries or machine and/or linen damages.	
C001	

- This English version is the original version of this manual. Without this version, the instructions are incomplete. Before installation, operating and maintenance of the machine, read complete instructions thoroughly. Refer to the Installation/Operation/Maintenance manual for further important instructions, as well. Follow these and keep the manuals accessible for later use.
- A machine must be installed by following the Installation/Operation/Maintenance manual. Before the first machine start, it must be initialized and tested by a qualified technician.
- The electric service line must not be affected by other electrical loading. A nominal voltage, if loaded or not must work in the range $\pm 10\%$ with a maximum permanent frequency deviation of 1% or a short-time one at 2% of a given frequency.

NOTE: Connecting or starting the machine at an incorrect voltage can damage the programmer.

- The machine must not be exposed to high humidity or extreme high and low temperatures.
- Do not tamper with the controls.

IMPORTANT: Instructions in this manual do not cover all dangerous situations. It is up to the user to handle the machine carefully.

- The manufacturer has the right to change specifications in this manual without prior notice. All the stated information is only for informative purpose and must be considered as general. It is not possible to present all the specific data of the device.

NOTE:

Every circuit board has a serial number and the code of the board (Refer to *Figure 7*).

On the EPROM memory chip on the circuit board is a label specifying the software number and version and/or the date of the software. (Refer to *Figure 7*).

These data, as well as the model and serial number of the machine, must be mentioned in all correspondence or inquiries addressed to the distributor or manufacturer.

NOTE:

The "EASY CONTROL" computer is used in COIN and OPL machines.

The EASY CONTROL computer uses "machine type" codes to select the different programmable machine versions.

	DANGER
OPERATIONS THAT REQUIRE THE MACHINE TO BE OPENED MUST BE CARRIED OUT BY QUALIFIED PERSONNEL WHO TAKE ALL THE NECESSARY MEASURES TO ENSURE EVERYBODY'S SAFETY. AT THE END OF THESE OPERATIONS, THE MACHINE MUST BE RESTORED TO ITS ORIGINAL STATE.	
C101	

Introduction

Model Identification

Information in this manual is applicable to these models:

EC_HYDROS_ST11	LU250ME	PC680NE	PU530EE
EC_HYDROS_ST14	LU250SE	PC680SE	PU530ME
EC_HYDROS_ST16	LU250WE	PC680TE	PU530SE
EC_HYDROS_ST19	LU285EE	PC680WE	PU530WE
LC190EE	LU285FE	PCD28EE	PU680EE
LC190FE	LU285SE	PCD28LE	PU680ME
LC190LE	LU285WE	PCD28NE	PU680SE
LC190ME	LU345EE	PCD28SE	PU680WE
LC190NE	LU345ME	PCD28TE	PUAE285E
LC190TE	LU345SE	PCD28WE	PUAG285E
LC250EE	LU345WE	PCS28EE	PUAL285E
LC250FE	LU530EE	PCS28LE	PUAS285E
LC250LE	LU530ME	PCS28NE	PUD28EE
LC250ME	LU530SE	PCS28TE	PUD28SE
LC250NE	LU530WE	PGAE285E	PUD28WE
LC250SE	LU680EE	PGAG285E	PUDE190E
LC250TE	LU680ME	PGAL285E	PUDE250E
LC250WE	LU680SE	PGAS285E	PUDE285E
LC285EE	LU680WE	PGDE190E	PUDE345E
LC285FE	LUD28EE	PGDE250E	PUDE530E
LC285LE	LUD28SE	PGDE285E	PUDE680E
LC285ME	LUD28WE	PGDE345E	PUDG190E
LC285NE	LUS28EE	PGDE530E	PUDG250E
LC285SE	LX190EE	PGDE680E	PUDG285E
LC285TE	LX190FE	PGDG190E	PUDG345E
LC285WE	LX190LE	PGDG250E	PUDG530E
LC345EE	LX190ME	PGDG285E	PUDG680E
LC345LE	LX190NE	PGDG345E	PUDL190E
LC345ME	LX190TE	PGDG530E	PUDL250E
LC345NE	LX250EE	PGDG680E	PUDL285E

Table continues...

LC345SE	LX250FE	PGDL190E	PUDL345E
LC345TE	LX250LE	PGDL250E	PUDL530E
LC345WE	LX250ME	PGDL285E	PUDL680E
LC530EE	LX250NE	PGDL345E	PUDS250E
LC530LE	LX250SE	PGDL530E	PUDS285E
LC530ME	LX250TE	PGDL680E	PUDS345E
LC530NE	LX250WE	PGDS250E	PUDS530E
LC530SE	LX285EE	PGDS285E	PUDS680E
LC530TE	LX285FE	PGDS345E	PUS28EE
LC530WE	LX285LE	PGDS530E	PUSE285E
LC680EE	LX285ME	PGDS680E	PUSG285E
LC680LE	LX285NE	PGSE285E	PUSL285E
LC680ME	LX285SE	PGSG285E	PUSS285E
LC680NE	LX285TE	PGSL285E	PX190EE
LC680SE	LX285WE	PGSS285E	PX190FE
LC680TE	LX345EE	PH190EE	PX190LE
LC680WE	LX345LE	PH190FE	PX190ME
LCD28EE	LX345ME	PH190LE	PX190NE
LCD28LE	LX345NE	PH190ME	PX190TE
LCD28NE	LX345SE	PH190NE	PX250EE
LCD28SE	LX345TE	PH190TE	PX250FE
LCD28TE	LX345WE	PH250EE	PX250LE
LCD28WE	LX530EE	PH250FE	PX250ME
LCS28EE	LX530LE	PH250LE	PX250NE
LCS28LE	LX530ME	PH250ME	PX250SE
LCS28NE	LX530NE	PH250NE	PX250TE
LCS28TE	LX530SE	PH250SE	PX250WE
LH190EE	LX530TE	PH250TE	PX285EE
LH190FE	LX530WE	PH250WE	PX285FE
LH190LE	LX680EE	PH285EE	PX285LE
LH190ME	LX680LE	PH285FE	PX285ME
LH190NE	LX680ME	PH285LE	PX285NE
LH190TE	LX680NE	PH285ME	PX285SE
LH250EE	LX680SE	PH285NE	PX285TE

Table continues...

LH250FE	LX680TE	PH285SE	PX285WE
LH250LE	LX680WE	PH285TE	PX345EE
LH250ME	LXD28EE	PH285WE	PX345LE
LH250NE	LXD28LE	PH345EE	PX345ME
LH250SE	LXD28NE	PH345LE	PX345NE
LH250TE	LXD28SE	PH345ME	PX345SE
LH250WE	LXD28TE	PH345NE	PX345TE
LH285EE	LXD28WE	PH345SE	PX345WE
LH285FE	LXS28EE	PH345TE	PX530EE
LH285LE	LXS28LE	PH345WE	PX530LE
LH285ME	LXS28NE	PH530EE	PX530ME
LH285NE	LXS28TE	PH530LE	PX530NE
LH285SE	PC190EE	PH530ME	PX530SE
LH285TE	PC190FE	PH530NE	PX530TE
LH285WE	PC190LE	PH530SE	PX530WE
LH345EE	PC190ME	PH530TE	PX680EE
LH345LE	PC190NE	PH530WE	PX680LE
LH345ME	PC190TE	PH680EE	PX680ME
LH345NE	PC250EE	PH680LE	PX680NE
LH345SE	PC250FE	PH680ME	PX680SE
LH345TE	PC250LE	PH680NE	PX680TE
LH345WE	PC250ME	PH680SE	PX680WE
LH530EE	PC250NE	PH680TE	PXD28EE
LH530LE	PC250SE	PH680WE	PXD28LE
LH530ME	PC250TE	PHD28EE	PXD28NE
LH530NE	PC250WE	PHD28LE	PXD28SE
LH530SE	PC285EE	PHD28NE	PXD28TE
LH530TE	PC285FE	PHD28SE	PXD28WE
LH530WE	PC285LE	PHD28TE	PXS28EE
LH680EE	PC285ME	PHD28WE	PXS28LE
LH680LE	PC285NE	PHS28EE	PXS28NE
LH680ME	PC285SE	PHS28LE	PXS28TE
LH680NE	PC285TE	PHS28NE	T11
LH680SE	PC285WE	PHS28TE	T11E

Table continues...

LH680TE	PC345EE	PU190EE	T11VP
LH680WE	PC345LE	PU190FE	T13
LHD28EE	PC345ME	PU190ME	T13/13
LHD28LE	PC345NE	PU250EE	T13E
LHD28NE	PC345SE	PU250FE	T13VP
LHD28SE	PC345TE	PU250ME	T16
LHD28TE	PC345WE	PU250SE	T16E
LHD28WE	PC530EE	PU250WE	T16VP
LHS28EE	PC530LE	PU285EE	T24
LHS28LE	PC530ME	PU285FE	T35
LHS28NE	PC530NE	PU285ME	T9
LHS28TE	PC530SE	PU285SE	T9E
LU190EE	PC530TE	PU285WE	T9VP
LU190FE	PC530WE	PU345EE	TAMS13
LU190ME	PC680EE	PU345ME	D2109LRVS
LU250EE	PC680LE	PU345SE	LU250FE
PC680ME	PU345WE	PC195EE	PC195ME
PC195FE	TX9	IC195EE	IC195ME
IC195FE	I195		

Machine Type Selection

9 kg / 20 lb / 190 L	T9
	EC HYDROS ST11
	LS195
	T9E
	T9-JESS
	T9VP
9 kg / 20 lb / 195 L	TH9
11 kg / 24 lb / 250 L	T11
	EC HYDROS ST14
	LS250
	T11E
	T11VP

Table continues...

13 kg / 27 lb / 285 L	T13
	EC HYDROS ST16
	LS300
	T13E
	T13VP
	TAMS13
	LSMS13
13/13 kg / 27/27 lb / 285/285 L	T13/13
	LSD300
16 kg / 35 lb / 345 L	T16
	EC HYDROS ST19
	LS350
	T16E
	T16VP

Table continues...

24 kg / 53 lb / 530 L	T24
	LS530
35 kg / 77 lb / 680 L	T35
	LS680

Control Identification

Symbols Used

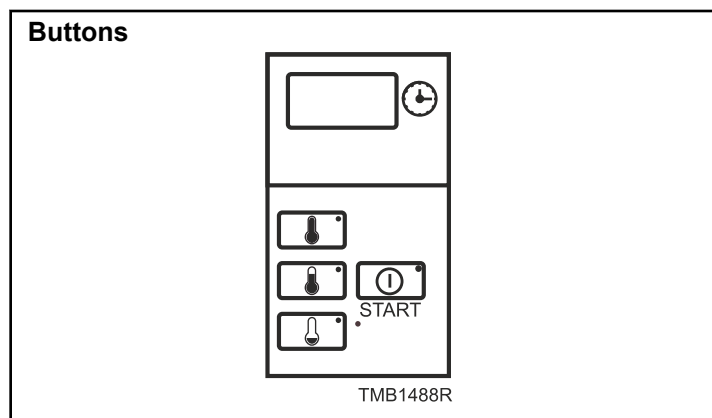


Figure 1

 START TMB1489R	Start - Start up a program - Continue an interrupted program - Advance the program to the next sequence
 TMB1490R	Program Temperature High - Program selection button, High Temperature
 TMB1491R	Program Temperature Medium - Program selection button, Medium Temperature
 TMB1492R	Program Temperature Low - Program selection button, Low Temperature
 TMB1501R	Alarm Indication - Red Light is On or Flashing when an alarm occurs

Table 1

PROGRAMMING SWITCH

Programming switch is located inside the machine behind the control panel.

To access the programming switch:

- Machines 9 kg / 20 lb / 190 L – remove top cover.
- Machines 11 kg / 24 lb / 250 L, 13 kg / 27 lb / 285 L, 13 kg / 27 lb / 285 L - Top Pocked Tumbler, Stacked Tumbler, 16 kg /

35 lb / 345 L, 24 kg / 53 lb / 530 L, 35 kg / 77 lb / 680 L - the control panel must be unlocked

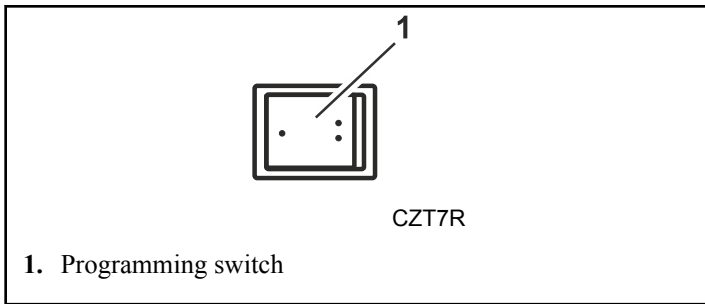


Figure 2



Run Mode: This is the Normal Dryer operation.



Program Mode: Only for changing the Dryer programs and machine settings.



When the programming switch is in "Program Mode" a dot appears in the lower right corner of the display, in "Run Mode" the dot is hidden.

Basic Description of Controls

General

The Control Offers:

- 3 programs with default temperatures low, medium and high.
- Easy operation with piezoelectric buttons.
- Dryer programs can be customized (time, temperature, cool down).
- OPL version: Advancing the program by the “START“ button.
- COIN version: free programmable program prices and coin values.
- Diagnostic messages.

During Dry Cycle The Following Data Is Shown On The Display:

- Shows which program is selected
- Time until the end of the cycle
- For coin machines, the coin value (inserted coin) for half a second

The Hardware And Software Of The "Easy Control" Dryer Computer:

- The hardware contains 2 electronic boards:
 - The Display Board: with seven segment displays and connection for keypad
 - The Main Board: Micro-Controller Board for EC-machine
- The software is implemented in an EPROM - Flash memory.
 - The Integrated Circuit is fitted in an Integrated Circuit holder on the Main Board.
- Programming switch for selecting RUN or PROGRAM mode.
- Infrared Communication/Networking.

Operation Menu:

- Selection of the dryer program
- Starting the dryer program
- Advancing the dryer program
- Interaction on failure messages

Initialization Menu :

- Setting the program processes
- Setting the program prices
- Shows the software version

Configuration Menu :

- Selection of the machine type
- Selection of the coin values
- Overview of the eight last occurred diagnostic messages
- Starting a diagnostic program
- Selection of the communication link

Initializing the Machine

Initialization Menu

	WARNING
Before making changes in the initialisation menu read carefully this manual. The changes you make will influence the dryer processes and price settings.	
C378	

	WARNING
Before making changes we recommend to write down carefully what the previous settings were.	
C379	

HOW TO GET INTO THE INITIALIZATION MENU

The initialization menu can only be accessed when the machine is in stand by (the machine is powered up but no program is started).

1. The first step is to enable the keyboard buttons for Program Mode. Switch the programming switch into "Program Mode" position.
 - Vandalism Free Keypad: Press "Upper" and "Middle" temperature button at the same time for 1 second.
 - When the "-p-" submenu is displayed, release both buttons.
 - Now select the appropriate initialization submenu.
2. Press the "Middle" temperature button to switch between the different initialization submenus.
 - The characters "-p-", and "-o-" will appear one by one by pressing the "Middle" temperature button.
3. Press the "Upper" temperature button to select the specific initialization submenu.
 - The first menu item of the selected submenu appears.
 - The submenus are explained in the next paragraphs.

First read "How to change values and settings" and "Use of the "Upper" and "Middle" temperature buttons". To leave the initialization menu, select the "o" submenu by pressing the "Upper" temperature button and return to the operations mode.

HOW TO CHANGE VALUES AND SETTINGS

A VALUE:

- a number that can be modified
- build up by 1, 2 or 3 display units
- example: a time value

A SETTING:

- a menu item can be "on" or "oFF"
- example: Coin Machine "cn": on/oFF

	WARNING
YOU CAN ONLY MODIFY A VALUE OR SETTING WHEN THE CORRESPONDING VALUE OR SETTING IS FLASHING. AS A VALUE CAN BE BUILD OUT OF 3 DISPLAY UNITS, YOU HAVE TO MODIFY DISPLAY UNIT BY UNIT.	
C104	

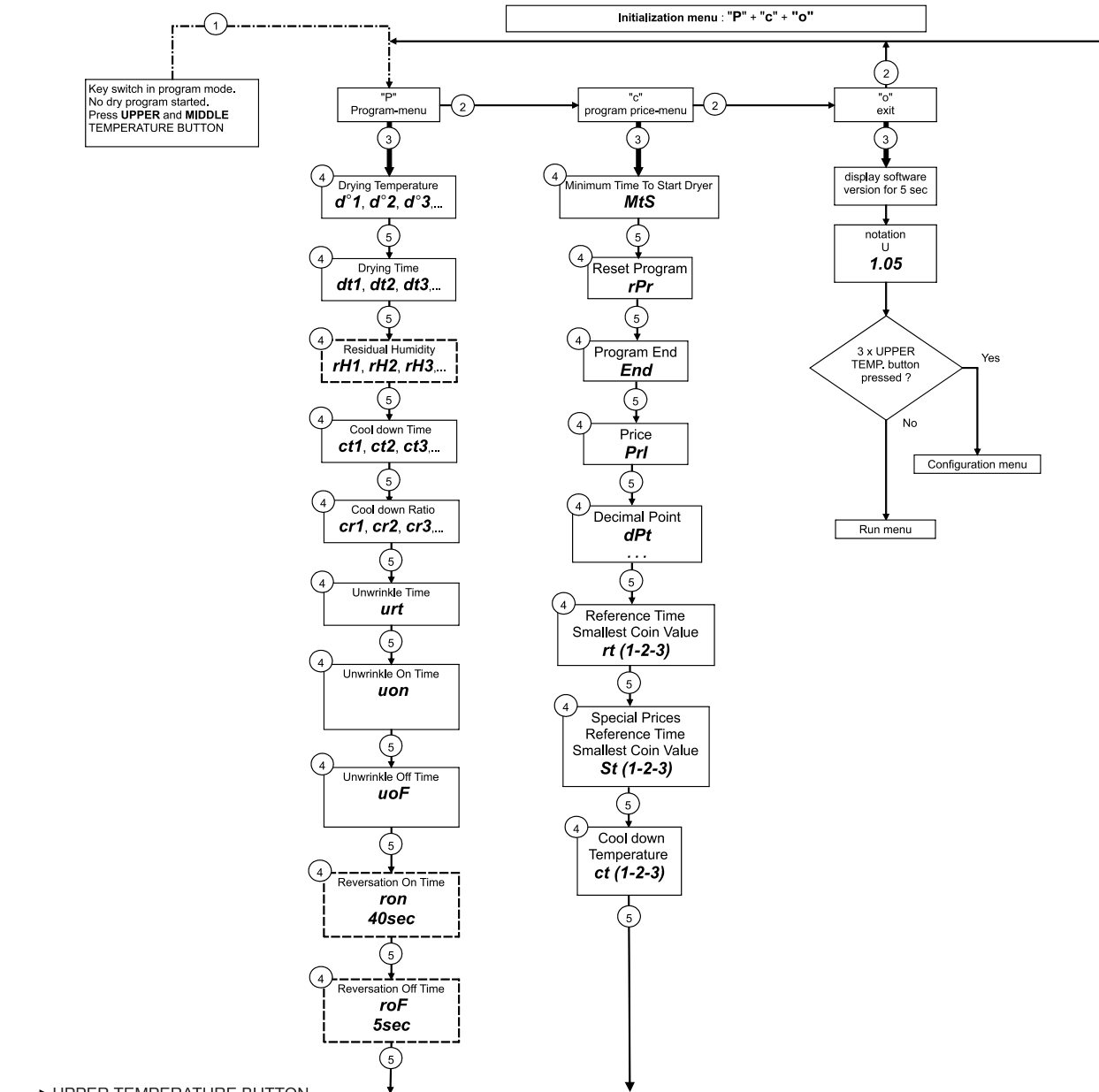
Use of the "Upper" and "Middle" temperature buttons

There are six different cases:

1. The menu item is displayed + the "Middle" temperature button is pressed:
 - The next menu item is displayed.
2. The menu item is displayed + the "Upper" temperature button is pressed:
 - The setting or value of the corresponding menu item is displayed.
3. The setting or value of a menu item is displayed and no display unit is flashing + the "Upper" temperature button is pressed:
 - The display unit will start flashing.
4. The display unit is flashing + the "Middle" temperature button is pressed:
 - Data on the corresponding display unit will be modified.
5. The display unit is flashing + the "Upper" temperature button is pressed:
 - The display unit will stop flashing or eventually the next right display unit will start flashing.
6. The setting or value is displayed and no display unit is flashing + the "Middle" temperature button is pressed:
 - The software jumps to the next menu item.

Follow these six steps, to modify the values and settings of the control.

A Flow Chart of Initialization Menu



→ UPPER TEMPERATURE BUTTON
 → LOWER TEMPERATURE BUTTON

A B C

- ① Go into the initialization menu. (programming switch in program mode)
- ② First go to the correct sub-menu by the **MIDDLE TEMPERATURE** button.
- ③ Select the correct sub-menu by the **UPPER TEMPERATURE** button.
- ④ Before you can change a value, the display must flash.
 Press the **UPPER TEMPERATURE** button to see the value or setting.
 Press the **UPPER TEMPERATURE** button once more so that the display unit starts flashing.
 Change the value by pressing the **MIDDLE TEMPERATURE** button.
 Select another flashing display or stop the flashing of the display by pressing the **UPPER TEMPERATURE** button.
- ⑤ Go to the next menu item by the **MIDDLE TEMPERATURE** button.

The **Bold characters** are the values and settings that can be changed on the corresponding display units.

TMB1505R

Figure 3

HOW TO MAKE A CORRECTION

- After modifying a menu item, the display unit will stop flashing by pressing the "Upper" temperature button.
- If a mistake is made, modify the menu item once more by pressing the "Upper" temperature button. The display will start flashing again.

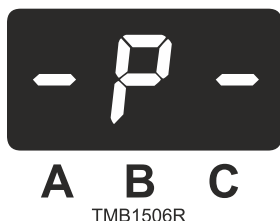
WRITING THE MODIFICATIONS INTO THE MEMORY

- When the updated values and settings are written into the EEPROM memory: dashes are displayed. This occurs automatically when leaving the submenu.

RETURNING TO THE MAIN MENU

- If you have finished the last step of the submenu, press the "Middle temperature" button and you will get back in the main menu. Now you can select another initialization submenu or you can leave the initialization menu by the "o" submenu.

"P"- PROGRAM SUBMENU



The Program Submenu contains the dryer program settings. In the "-p-" menu you can set the drying temperature, drying time, cooldown time, cooldown ratio.

In the menu's:

- Program 1 corresponds with the High Temperature Program Button
- Program 2 corresponds with the Medium Temperature Program Button
- Program 3 corresponds with the Low Temperature Program Button

Drying Control Function



Drying Temperature

The desired Drying Temperature at the drying process.

d°1: drying temperature program 1

d°2: drying temperature program 2

d°3: drying temperature program 3

The temperature can be set between 33.8 - 158 °F [1 - 70 °C] .

24 kg / 53 lb / 530 L & 35 kg / 77 lb / 680 L, GAS AND ELECTRICAL HEATING ONLY: 33.8 - 179.6 °F [1 - 82°C]

Defaults:

d°1 = 158 °F [70 °C] , (24 kg / 53 lb / 530 L & 35 kg / 77 lb / 680 L, gas and electrical heating only d°1 = 179.6 °F [82 °C])

d°2 = 104 °F [40 °C]

d°3 = 86 °F [30 °C]



Drying Time

ONLY FOR OPL MACHINES.

The pre-programmed time for drying at the drying process.

dt1: drying time program 1

dt2: drying time program 2

dt3: drying time program 3

The drying time can be set between 0 – 99 minutes.

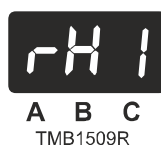
Defaults:

dt1 = 30 minutes

dt2 = 10 minutes

dt3 = 10 minutes

Humidity Control Function



Residual Humidity Value Humidity Control

IMPORTANT: Only for opl machines and machines connected to central payment system with selection humidity control. "Hum"="on" in "t-Menu ".

The Target value that corresponds with the % value residual Humidity linen.

rH1: Desired Residual Humidity program 1

rH2: Desired Residual Humidity program 2

rH3: Desired Residual Humidity program 3

The Desired Residual Humidity can be set between 0 – 30 %.

Defaults:

rH1 = 7%

rH2 = 13%

rH3 = 13%

After an extraction sequence at high speed in a washing machine, the residual humidity of the linen is about 70 - 50 %.

At the drying process 30 % is still humid, while 0 % is bone dry (and should be avoided for certain fabrics).

Cool Down Control Function



Cool Down Time

A Cool down process is started after the drying process.

The purpose is to reduce the temperature of the linen at the end of the drying process.

ct1: cool down time program 1

ct2: cool down time program 2

ct3: cool down time program 3

Time can be set between 0 – 30 minutes.

Defaults:

ct1 = 5 minutes

ct2 = 4 minutes

ct3 = 3 minutes



Cool Down Ratio

The purpose of the "Cool Down Ratio" function is to control how quickly the temperature in the dryer should decrease in function of time at the Cool Down Sequence.

cr1: Cool Down Ratio program 1

cr2: Cool Down Ratio program 2

cr3: Cool Down Ratio program 3

The Cool Down Ratio can be set between 0 – 5°C/min.

Defaults:

cr1 = 0°C/min

cr2 = 0°C/min

cr3 = 0°C/min

In case cr1, 2, 3 = 0°C/min, the "Cool Down Ratio" function is switched OFF.

Unwrinkle Control Function

The Unwrinkle function prevents the linen from getting wrinkled at the end of the dry cycle when the operator has no time to unload the machine immediately.

The unwrinkle time is the time that the machine will still reverse the fabrics at a 99% reduced mechanical action, once the drying process is finished.



Unwrinkle Time

The purpose of this menu item is to set the Unwrinkle Sequence time.

The function is switched OFF for a time setting = 0 minutes.

The unwrinkle time can be set between 0 – 180 minutes.

Default: 0 minutes

The buzzer will function each time the mechanical action is re-started to warn the operator that the drying cycle has terminated.



Unwrinkle On Time

The time when the drum rotates at the Unwrinkle sequence.

The Unwrinkle On Time can be set between 3 – 99 seconds.

Default: 5 seconds



Unwrinkle Off Time

The time when the drum does not rotate, at the Unwrinkle sequence.

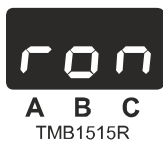
The Unwrinkle Off Time can be set between 1 – 15 minutes.

Default: 5 minutes

Reversation Control Function

The "Reversation" Function is optional and only valid when the dryer is operating with a separate ventilator and drum motor. It means that at a drying sequence the drum is turning and stopped in intervals that can be set by the "Reversation" "On" and "Off" Times.

The Menu items "ron" and "rof" are only accessible when the setting "rev" is switched "on" in the "t"- menu.



Reversion On Time

The time when the drum rotates at the Reversion Motor action.

The Reversion On Time can be set between 3 – 120 seconds.

Default: 40 seconds



Reversion Off Time

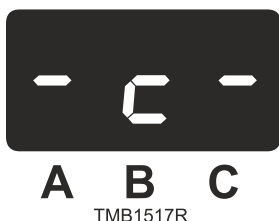
The time when the drum does not rotate, at the Reversion Motor Action.

The Reversion Off Time can be set between 1 – 15 seconds.

Default: 5 seconds

	WARNING
PLEASE CHECK THAT YOU HAVE SELECTED THE RIGHT REVERSION ON-OFF TIMES, AS IT HAS AN INFLUENCE ON THE PERFORMANCE OF THE DRYER.	
C106	

Price Sub-menu



"C" - PRICE SUB-MENU

ONLY FOR MACHINES WITH A COIN SELECTOR AND EXTERNAL PAYMENT SYSTEM.

The Price Sub-menu contains the time settings in relation to the coin values.



Minimum Time to Start Dryer

To ensure that the dryer will always be started for a minimum amount of time, there is a "Minimum Time value to Start the Dryer".

If the value for "MtS" is bigger than any coin reference time "rt" value, the customer has to pay with more than one coin to start the dryer.

The "MtS" time value can be set between 0 and 99 minutes.

Default: 1 minute



Reset Program

At the end of the drying cycle you can choose whether to reset or keep the last selected drying cycle or skip automatically to the "Low" or "Medium" Temperature selection.

The main difference is that in one case ("Yes") you can not START the dryer without first selecting a program. In the other three cases the dryer computer is automatically suggesting a program.

Selection list: no, Yes, lo, med

- no: The Program selection is not reset. (The program button LED of the finished drying cycle stays on)
- Yes: The Program selection is reset. (All three program button LED's are off)
- lo: The Program selection "Low Temperature" is automatically selected. (The Low Temperature program button LED is switched on)
- med: The Program selection "Medium Temperature" is automatically selected. (The Medium Temperature program button LED is switched on)

Default: rPr = Yes



Program End

Different information can be shown at the end of the drying cycle.

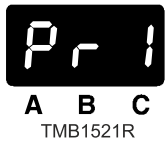
Selection list: nul, Pay, col

- nul: When the time at the end of the drying cycle is "0" minutes, value "0" is displayed until the door is opened. Before a new cycle can be started, the door must be opened and closed.
- Pay: At the end of the drying cycle "Pay" is shown immediately, a new cycle can be started without opening the door.

Initializing the Machine

- **co1:** At the end of the drying cycle the value of coin drop 1 is displayed, a new cycle can be started without opening the door. This information instructs customers which coin is needed for payment.

Default: End = Nul



Price

There are two ways to setup the price for the three dryer programs: One Price and Individual Price.

Selection list: OnE, Ind

- **OnE:** There is only one price (-time) reference (also only one cool down time value)
- **Ind:** (Individual) There are three price (-time) references (and also three cool down values)

Default: PrI = one



Decimal Point Reference Time

dPt sets the Decimal Point for "rt" Reference Time smallest coin value.

The decimal point setup is only required in case an electronic coin selector is applicable.

The electronic coin selector works with a pulse train.

For each pulse from the electronic coin selector, a small time value is added to the total drying time shown on the display.

Default: dPt = 00.0



Reference Time Smallest Coin Value

When a coin is inserted in the coin selector and accepted by the dryer computer, the dryer computer will increase the total process time to dry the linen. In case of 2 mechanical or 1 electronic coin selector you can pay with 2 or more different coins. (Example 0.5 EUR, 1 EUR). For the smallest coin value, the increased drying process time has to be smaller than for the biggest coin value.

To make the programming easy, a reference time value must be set for the smallest coin value. Then the dryer computer will automatically calculate the drying process time corresponding with

the biggest coin value. This is done automatically by the computer taking the same ratio for the smallest and biggest coin value.

One Price:

- **rt:** Reference Time corresponding with coin value 1

Defaults: rt = 5 Min

Individual Price:

- **rt1:** Reference Time corresponding with coin value 1 for Program 1
- **rt2:** Reference Time corresponding with coin value 1 for Program 2
- **rt3:** Reference Time corresponding with coin value 1 for Program 3
- The time can be set between 0 – 30 Min.

Defaults:

- rt1 = 2 Min
- rt2 = 2 Min
- rt3 = 2 Min



Reference Time Smallest Coin Value for Selection SPECIAL PRICES [coin 1]

ONLY VALID WHEN SP = ON in t-menu

Same as for rt1, 2, 3, in case of selection SPECIAL PRICES you can also set Reference Times corresponding with coin value 1. At the moment when the function SPECIAL PRICES is switched on, the values St1, 2 and 3 become valid instead of the values for rt1, 2 and 3.

One Price:

- **St:** Reference Time corresponding with coin value 1

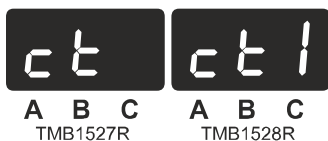
Defaults: St = 6 Min

Individual Price:

- **St1:** Reference Time corresponding with coin value 1 for Program 1
- **St2:** Reference Time corresponding with coin value 1 for Program 2
- **St3:** Reference Time corresponding with coin value 1 for Program 3
- The time can be set between 0 – 30 Min.

Defaults:

- St1 = 6 Min
- St2 = 6 Min
- St3 = 6 Min



Cool Down Time

At the end of the drying process the dryer must have a cool down sequence to reduce the temperature in the dryer.

In case of selection "Pri" = "one" there can only be set 1 cool down time.

In case of selection "Pri" = "Ind" there can be set 3 cool down times.

One Price:

- ct: Cool Down Time

Defaults: ct = 5 Min

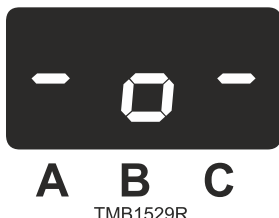
Individual Price:

- ct1: Cool Down Time corresponding with Program 1
- ct2: Cool Down Time corresponding with Program 2
- ct3: Cool Down Time corresponding with Program 3
- The time can be set between 2 – 30 Min.

Defaults:

- ct1 = 5 Min
- ct2 = 5 Min
- ct3 = 5 Min

Software Version Menu



"O" - SOFTWARE VERSION MENU

The goal of this sub-menu is to leave the initialization menu. Select "o" sub-menu to view the software version number on the display for 5 seconds. This allows you to verify the software version number. After these 5 seconds you are back in the Operation Menu and now you can start a new program by selecting a dry program and by pressing the Start button. (Programming switch must be in Run Mode). While the software version number is displayed you can enter the configuration menu. Refer to "Configuration Menu".

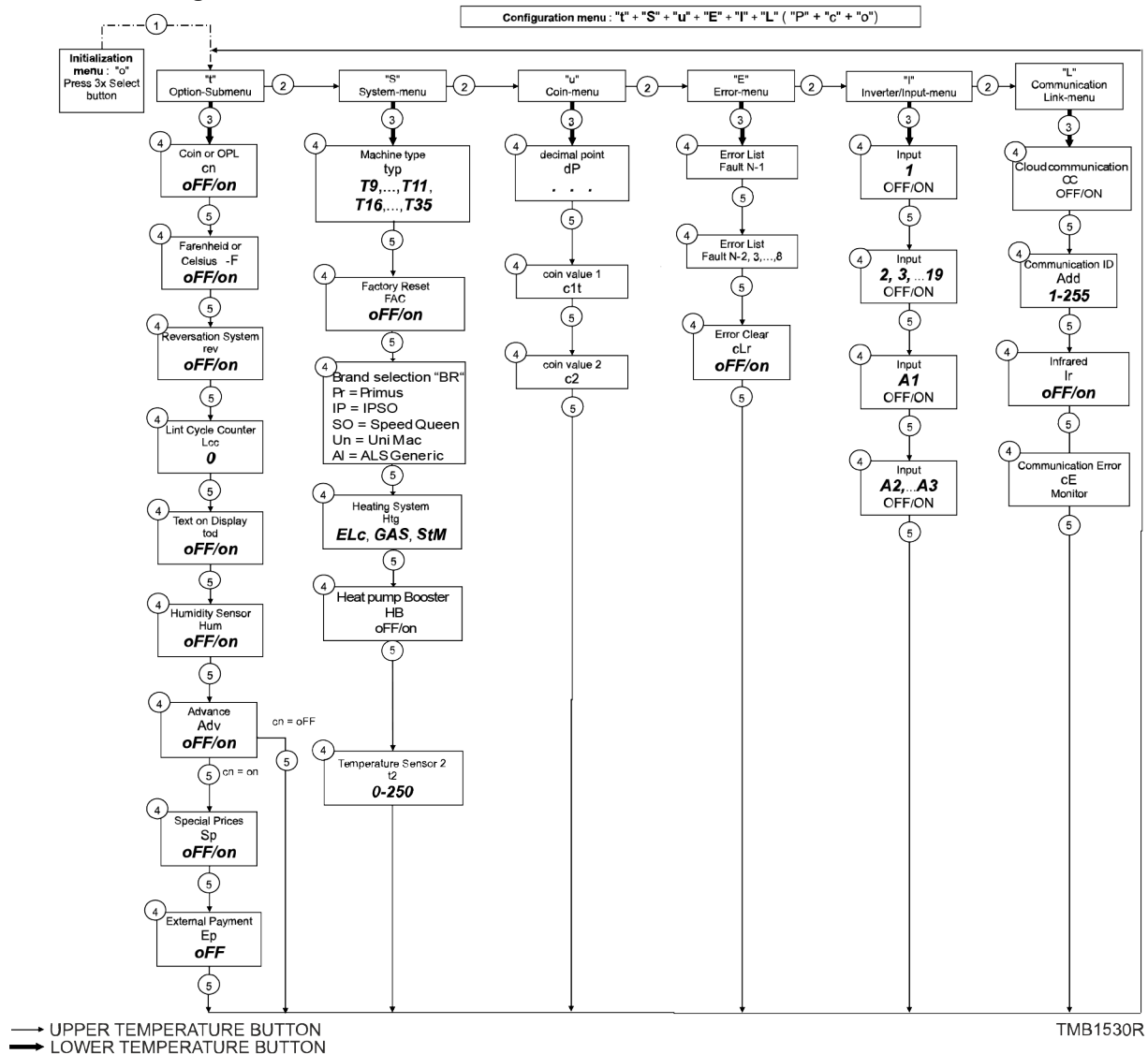
Configuration Menu

	WARNING
BEFORE MAKING CHANGES IN THE CONFIGURATION MENU READ THIS MANUAL CAREFULLY. THE CHANGES YOU MAKE WILL INFLUENCE THE DRY PROCESSES AND PRICE SETTINGS. BEFORE MAKING CHANGES WE SUGGEST TO WRITE DOWN CAREFULLY WHAT THE PREVIOUS SETTINGS WERE.	
C107	

Before you can enter the configuration menu, you must go first into the Initialization Menu (refer to previous section). Then you have to select the "o" sub-menu. Press the "Upper Temperature" button when the "o" submenu is displayed. At that moment you will see the software version number. Press now the "Upper Temperature" button 3 times. Now you will see the character t for "t" sub-menu (go to the Initialization Menu if you want to select one of the initialization sub-menus).

	WARNING
BY SELECTING THE FACTORY SETTINGS ALL DEFAULT MACHINE SETTINGS WILL BE LOADED AND CUSTOM MADE SETTINGS WILL BE LOST.	
C108	

Flow Chart of Configuration Menu

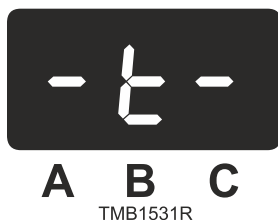


- ① Go into the initialization menu. (programming switch in program mode)
- ② First go to the correct sub-menu by the **MIDDLE TEMPERATURE** button.
- ③ Select the correct sub-menu by the **UPPER TEMPERATURE** button.
- ④ Before you can change a value, the display must flash.
 Press the **UPPER TEMPERATURE** button to see the value or setting.
 Press the **UPPER TEMPERATURE** button once more so that the display unit starts flashing.
 Change the value by pressing the **MIDDLE TEMPERATURE** button.
 Select another flashing display or stop the flashing of the display by pressing the **UPPER TEMPERATURE** button.
- ⑤ Go to the next menu item by the **MIDDLE TEMPERATURE** button.

The **Bold characters** are the values and settings that can be changed on the corresponding display units.

Figure 4

Option Menu



"T" - OPTION MENU

The Option Menu contains selections defining the general machine functionality.



COIN / OPL

Coin machine: The machine is operated with coin selector or is connected to a central payment system.

OPL machine: The machine is NOT operated with coin selector and is NOT connected to a central payment system.

- oFF = OPL
- on = Coin machine
- Default: oFF



FAHRENHEIT OR CELSIUS

To select if the displayed temperature will be in degrees Fahrenheit or in degrees Celsius.

- oFF = degrees Celsius
- on = degrees Fahrenheit
- Default: oFF



REVERSATION SYSTEM

REVERSATION IS OPTIONAL FOR EC DRYERS.

The "Reversation" Function is optional and only valid when the dryer is operated with a separate ventilator and drum motor. It means that at the drying process the drum is turning and stops in intervals that can be set by the "Reversation" "On" and "Off" Times. These values are adjustable by the menu items "ron" and "rof" in the "P" -menu.

If the machine is executed with Reversation System then "rev" is set "On" else "Off".

- oFF = without reversation system
- on = with reversation system
- Default: oFF



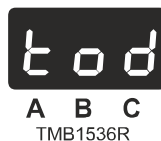
LINT CYCLE COUNTER - not valid for 9 kg / 20 lb / 195 L

You can set the cycle counter value for when the Dryer gives a warning to clean the Lint Filter. The value can be set between 0 and 40 cycles.

- Default: 0 cycles

Depending the kind of linen, the lint filter has to be cleaned more or less frequently. The warning is a reminder that the filter has to be cleaned. For the default value "0" cycles, the function is switched off and no message to clean the lint filter will be shown on the display. LCC value is reset to "0" when switching "cn=off" to "cn=on" and vice versa.

	WARNING
FOR SAFETY AND PERFORMANCE PURPOSES, IT'S STRONGLY RECOMMENDED TO CLEAN THE LINT FILTER AFTER EACH DRY CYCLE.	
C193	



TEXT ON DISPLAY

The texts on the display are abbreviations to inform the operator about the action to be taken. In some countries English is not accepted, so it is possible to switch off the texts.

- oFF = without text on display
- on = with text on display
- Default: on



ADVANCE THE DRY CYCLE

ONLY FOR OPL MACHINE

To advance (skip) an active program step by step, press the start button.

Initializing the Machine

- oFF = no ADV function
- on = ADV function
- Default: on



HUMIDITY SENSOR

HUMIDITY SENSOR IS OPTIONAL FOR EC DRYERS

If the machine is operated with a humidity sensor then "Hum" must be set On.

- oFF = without humidity sensor
- on = with humidity sensor
- Default: oFF

NOTE: Humidity control is only applicable for OPL dryers and dryers with external payment system. It is not applicable for COIN operated dryers.



SPECIAL PRICES

Only for COIN machines connected with a Special Price time Signal. If the special price input signal is low, the standard Normal "Reference Time Settings" will be displayed at Start-up. Refer to c-submenu, menu items: rt1, 2, 3. If the special price input signal is high, the Special "Reference Time Settings" will be displayed at Start-up. Refer to c-submenu, menu items: St1, 2, 3.

- oFF = no special prices can be programmed in the c-menu.
- on = special prices can be programmed in the c-menu
- Default: oFF

IMPORTANT: ONLY ONE COIN SWITCH CAN BE USED IN CASE OF SELECTION "SP = ON" AS THE SECOND INPUT SIGNAL IS USED FOR THE SPECIAL PRICE SELECTION.



EXTERNAL PAYMENT SYSTEM

In case of EXTERNAL PAYMENT system, "RL2" is the best selection because it is the most flexible solution.

When the dryer computer is connected to an External Payment system, the selection EP must be set to REL or RL2. (RL3 is a customer specific solution.)

The Start Button light will start flashing when the dryer program price has been paid at the central payment unit.

- (Start Release Input Signal = High)

By pressing the Start button, the program is started.

Busy Signal:

- As a busy signal for the drying process, the state of the contactor that controls the Ventilator is applicable.

Selection REL:

- Dryer computer accepts only one pulse from central payment system.
- This pulse works as Start Release.
- Always temperature Button must be pressed before cycle can be started.
- Setup values from "P" menu are applicable.
- Program can NOT be changed after start.

Selection RL2:

- Dryer computer accepts multiple pulses from central payment system.
- First pulse works as Start Release.
- Setup values from "c" menu are applicable.
- For each pulse, value "rt" ("rt1", "rt2", "rt3") at "c"-menu will increment the drying time.
- Program can still be changed after start.
- oFF = no external payment unit connected with Easy control
- REL = an external payment unit that functions by potential free contacts (relays) and works with 1 pulse.
- RL2 = an external payment unit that functions by potential free contacts (relays) and works with multiple pulses.
- Default: oFF



"RRT"

RESET REMAINING TIME

It is set in minutes and means after how long time cycle should be canceled if door stays open during running process.

RRT can be set in range 0..99 minutes. Zero means that this function is deactivated.



"MHT"

ONLY FOR HEAT PUMP WITH COIN ACCEPTOR.

Extra time added in the start stage of a drying program for heating up the heat pump.



“SDT”

ONLY FOR HEAT PUMP WITH COIN ACCEPTOR.

Minimum temperature at which the heat pump is ready to start the drying process.

The drying time countdown only starts running when the minimum temperature SDT or the MHT time are reached.

System Menu



A B C
TMB1541R

"S" - SYSTEM MENU

The System Menu defines the way the dryer functions by selecting the right machine type and by loading the corresponding factory settings.

	WARNING
IF YOU LOAD THE STANDARD FACTORY SETTINGS THEN ALL THE SETTINGS MADE BY THE CUSTOMER WILL BE LOST.	
C109	



A B C
TMB1542R

MACHINE TYPE

First select the correct machine type. The machine type is found on the machine type plate at the rear panel of the dryer.

Available Types:

- T9
- TH9
- T11
- T13
- T13/13
- TAMS13
- T16
- T24
- T35
- Default: T9



A B C
TMB1487R

DOUBLE MACHINE ONLY (FOR T13/13 MACHINES)

Default value is off.

Select "On" in case of T13/13. Only function of "dM" setting is to load the correct default settings for T13/13 dryer computer.



A B C
TMB1543R

LOAD FACTORY SETTINGS

Load factory settings when a new dryer control unit is installed or when a complete reset is required. Factory Settings are loaded by changing the "FAC" setting to "on".

IMPORTANT: ALSO THE SETTINGS IN THE T- AND OTHER SUBMENUS WILL BE SWITCHED BACK TO THE FACTORY SETTINGS.

Br

Brand Selection

Select brand of machine:

Pr = Primus (Default)

IP = IPSO

SO = Speed Queen

Un = UniMac

Al = ALS Generic

IMPORTANT: WHEN A NOT COMPATIBLE SOFTWARE VERSION IS INSTALLED, ERROR MESSAGE 35 WILL BE GENERATED BY THE COMPUTER.

In the case of Error message 35: To install the dryer Installation/ Configuration properly, you have to reset the factory setting in the configuration menu. Error message 35 can only be erased by switching off and on the power.



A B C
TMB1544R

HEATING TYPE - not valid for 9 kg / 20 lb / 195 L

Select the correct heating type from the list.

- Elc : Electrical Heating
- GAS : Gas Heating
- StM : Steam Heating
- Default: GAS

BR

Brand Selection

Select brand of machine

- IP = IPSO
- SQ = Speed Queen
- UN = UniMac
- AL = ALS Generic
- Default: Primus



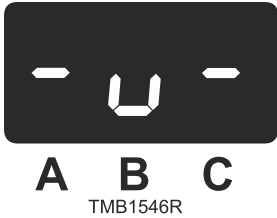
TEMPERATURE SENSOR 2

Preset value for temperature Sensor 2. This is the max allowed value for the heated air in the heating system. Adjustable between 32 and 482°F [0 and 250°C] . If value = 32°F [0°C] , sensor is switched off.

Default: according to the machine type 302 - 392 °F [150 - 200°C] .

When the air temperature at the heating system exceeds value "t2" then the heating is switched off until the heated air temperature drops below "t2".

Coin Sub-menu



"U" - COIN SUB-MENU

The goal of the "u" sub-menu is to program coin values and to select the position of the decimal point. You can only change these values if you have selected "cn" = "on" in the "t" routine. This means that the machine will function as a machine with a coin selector. Now you can program the coin values. Only 2 coin values can be programmed as there are only 2 Coin Selectors that can be installed.



DECIMAL POINT

0.00: setting the decimal point.

00.0 is the default value.



COIN VALUE 1

Value for coin selector 1.

NOTE: Indication "T" means: Reference for time calculation coin 2 in "c" - sub-menu.

The time ratio value for coin value 1 and 2. The time counting for coin 2 is calculated from the time value that corresponds with coin 1 in "c" - sub-menu. The amount of time that is assigned to coin 1 is equivalent with the amount of time that will be assigned for coin 2.



COIN VALUE 2

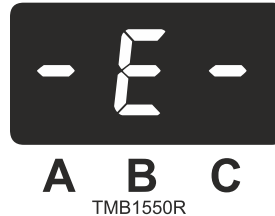
Value for coin selector 2.

The coin value can be set between 0 – 999. It is recommended that c1t has the smallest value.

Defaults:

- c1t = 0.2
- c2 = 0.5

Error List Sub-menu



"E" ERROR LIST SUB-MENU

The goal of the Error List Submenu is to memorize diagnostic messages that have occurred during the drying process in case of functional failures. There are up to 8 messages kept in memory. The last failure message will be displayed as the first one.



ERROR 1

Failure message 1 is the last failure message that occurred. You can check the corresponding failure messages for Er1 upto Er8.



ERROR CLEAR

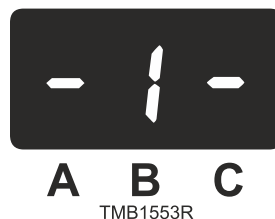
You can erase the list with error numbers by selecting "cLr"=on.

When all the messages are cleared: There will be eight times a "0".

Value "0" means that no Err message has occurred.

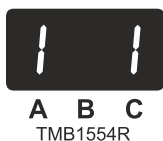
- oFF = the error messages are not erased
- on = the error messages are erased

Inputs



"I" - INPUTS

The Inputs Menu allows the user to check the state of the electrical input signals.



INPUT 1

The technician can verify the input signals of the Easy Control computer one by one. (Refer to electrical schematic to learn more about each input signal function). Press the "Middle" temperature button to see the next Input (increased input number). Press the "Upper" temperature button to see the Input state.

oFF = input signal is Low

on = input signal is High

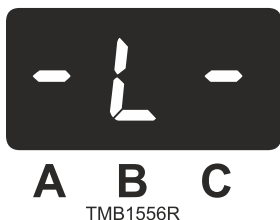


ANALOG INPUT 1

The value corresponds with the signal measured by the corresponding sensor:

- A1: Air temperature at outlet from Temperature sensor 1.
- A2: Hot air temperature at heating system dryer from Temperature sensor 2.
- A3: Absolute Air Humidity from Humidity sensor.

Communication Link Sub-menu



"L" - COMMUNICATION LINK SUB-MENU

Use the communication link menu to set the machine address and communication line.

FOR MORE INFO: REFER TO MANUAL PC-NETWORKING COMMUNICATION SOFTWARE.



Cloud communication

If machine is prepared (equipped with Wifi kit) for communication with cloud application through Wifi then item must be set to ON, otherwise set OFF.

See chapter Activation of Wifi Connection for more details.



ADDRESS

Networking: each machine type must have a unique address. Value is selectable between 1 and 255. Best is to select for the first machine: 1; second machine: 2; third machine: 3; ...

Default: 255



INFRARED

Selection between infrared communication or RS485 communication networking.

oFF = RS485 communication networking

on = infrared communication

Default: on

Humidity Control

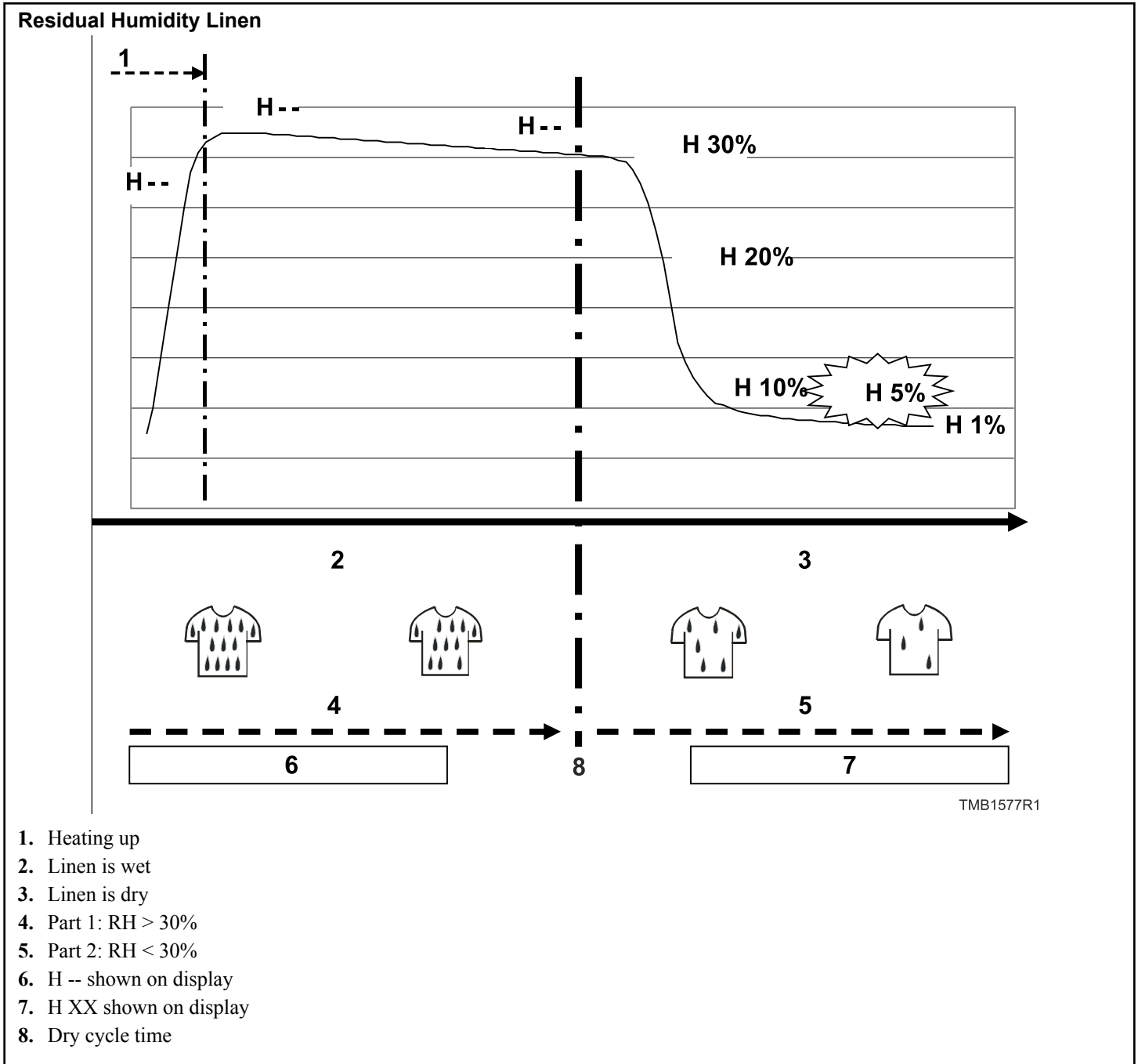


Figure 5

At the drying process with humidity control, the air humidity is measured by an absolute air humidity sensor. The graph shows the absolute air humidity in function of time. When a drying cycle is started, the air humidity will go up quickly as the heating system starts up, then the air humidity will decrease bit by bit. The dryer computer humidity sensor measures this value and calculates the corresponding residual humidity of the linen. The residual humidity is the remaining amount of water in wet linen

compared with it's dry equivalent. When the linen is taken out a washing machine:

- A high extraction speed results in about 50 % residual humidity
- A low extraction speed results in about 70 % residual humidity

At the drying cycle (humidity control) the display shows :

- H -- : The residual humidity is above 30 % (the linen is wet)

- H XX : The residual humidity value is below 30% (the linen gets dry)

Above 30% residual humidity, the linen is so wet that there is no accurate measurement. For this reason there is not shown a value on the display, just two dashes. It can take 10 to 40 minutes, depending the amount of load and how wet the linen is, before the Residual Humidity Value is shown on the display.

IMPORTANT: While the dryer is running, do not open and close the door, it disturbs the humidity control measurement.

	WARNING
CERTAIN FABRICS CAN GET DAMAGED WHEN DRYED UNTIL A RESIDUAL HUMIDITY OF 0%. (BONE DRY). CERTAIN FABRICS GET ELECTRO-STATIC CHARGED FOR A RESIDUAL HUMIDITY BELOW 5% (WHICH SHOULD BE AVOIDED).	
C132	

	WARNING
THE HUMIDITY CONTROL SYSTEM IS NOT MADE TO RUN WITHOUT LOAD OR WITH A VERY SMALL LOAD. THE SYSTEM CAN ONLY FUNCTION IN A NORMAL WAY WHEN THERE IS SUFFICIENT EVAPORATION TO BE MEASURED BY THE AIR HUMIDITY SENSOR.	
C133	

Operation Menu

Start Up

NOTE: Before starting up the first time, ensure the machine is correctly installed. Refer to the Installation Manual.

NOTE: Ensure the correct settings. Refer to Initialization and Configuration Menu. Ask the help of a technician if needed.

NOTE: Ensure the key switch is in the Run Mode. Dryer programs can not be started if the programming switch is in the Program Mode.

Switch On the Power

The display lights up when the power is turned on.

Load the Dryer

1. Open the door
2. Load laundry into the drum
3. When the drum is loaded, close the door

Select a Dryer Program

OPL version:

Check the maximum temperature for the laundry in the dryer. Press the desired temperature button. The pre-programmed time value is displayed. Increase drying time by pressing the same temperature button again.

COIN version:

Press the desired temperature button. Insert a coin. The corresponding pre-programmed time value is displayed. Insert coins until the required dry time is reached.

Start a Dryer Program

OPL version:

- Press the "START" button, when the "START" button LED is flashing.

COIN version:

- Insert the correct amount of coins. Press the "START" button, when the "START" button LED is flashing.

External payment unit :

- Insert the correct amount of coins at the external payment unit. The "START" button light will start flashing on the dryer keypad to indicate that you have to press the "START" button of the dryer.

Now the dryer program is started, the complete drying process will be fulfilled.

Advancing a Dryer Program

RUN MODE:

OPL version:

- The advance function for the "START" button must be set = ON (in the "t" -menu) to activate the advance Function.

COIN version:

- No advance function.

PROGRAM MODE:

The advance function for the "START" button is immediately activated when the keyswitch is set in Program Mode. Press the "START" button to advance the program (it is only possible to advance a program that has been started).

NOTE: When you press the "START" button the display will start flashing. The new sequence will only start after 2 seconds when the display stops flashing. There is a small delay time between pressing the "START" button and starting a new sequence. Reason is to avoid that the contactors will change state each time you press the "START" button.

Drying Time

Once the program has been started, the remaining dry time is displayed in minutes.

Cool Down Time

After the Dry Sequence there is always a Cool Down Sequence to reduce the temperature from the laundry and the dryer itself.

Program End

1. The "0" on the display will be erased and the machine is ready to start a new program.
2. When "0" is reached, the drying cycle is finished and the door can be opened.
3. Open the door and unload the machine.
4. The "0" on the display will be erased and the machine is ready to start a new program.

Unwrinkle Time

To avoid wrinkling the laundry, the dryer will reverse the drum for a few seconds each "X" minutes. The buzzer will beep, indicating the drying process is over.

Wait State

Normal machine operation can be interrupted. You have to wait until the machine allows you to go on. You can recognise the wait state by a display that is counting down second by second. This will occur when the power has been switched off and on.

How to Handle Failure Messages

- A failure message is displayed when the fault LED is on. The number on the display corresponds with a specific fault.

NOTE: For more information about error messages refer to *Error Handling*.

How to Handle Power Interruptions

When a power interruption occurs while the machine is in standby mode, and no program cycle was started, the machine will stay in standby mode.

When a power interruption occurs while the machine is drying, the programmer will check if the door is still closed after the power interruption.

The door is open

- Close the door.

The door is closed

- The display and the LED "START" button will start flashing to indicate that a power interruption has occurred.
- Press the "START" button to continue the program.

The Coin Counter

Set the programming switch in program mode.

Press the "Upper" temperature button. On the display:

COIN version:

- The coin counter is displayed.

OPL version:

- There is no coin counter available.
- The temperature and absolute air humidity values are shown in a sequence.

The Coin Counter can be reset:

1. Set the programming switch in program mode. Press the „Upper“ temperature button. On the display:
 - The counter is displayed (only for a few seconds).
2. While the counter is displayed, Press the „Upper“ temperature button three times.
 - The counter is now reset to value "0".

The Program Cycle Counter

Set the programming switch in program mode.

Press the "Middle" temperature button. On the display:

- The program cycle counter is displayed.

The Cycle Counter can be reset:

1. Set the programming switch in program mode. Press the "Middle" temperature button. On the display:
 - The counter is displayed (only for a few seconds).
2. While the counter is displayed, Press the "Middle" temperature button three times.
 - The counter is now reset to value "0".
 - The failure 41 "Err 41 Service Due" is also reset.

The Lint Filter Cycle Counter

Set the programming switch in program mode. Press the "Bottom" temperature button. On the display the Lint Filter cycle counter is displayed. The Lint Filter cycle counter can be reset by opening and closing the Lint Filter Door.

Setup Electronic Coin Selector

Example:

Program time dryer must be 25 minutes after inserting 3.00 EUR.

Next steps to follow:

1. Output signal electronic coin selector must be connected to dryer computer input 1 (pin A3)
2. At "t" menu:
 - setting "cn" = on
3. At "u" menu:
 - setting decimal point "dP": 00.0
 - setting "c1t" = 00.1
4. At "c" menu:
 - setting "dPt" = 0.00
 - setting "rt" = 0.83 minutes
5. As a result by inserting 3.00 EUR in coin selector, 30 pulses will result in $0.83 * 30 = 24.9$ minutes which is almost equal to 25 minutes.
6. Electronic coin selector will give 30 pulses for 3.00 EUR, as each pulse corresponds with 0.10 EUR, the smallest currency value of the coin selector.
7. To obtain X minutes for Y price.
8. $Y \text{ EUR} / 0.10 \text{ EUR} = Z \text{ pulses coin selector}$
9. $\text{Value "rt"} = X \text{ minutes} / Z \text{ pulses}$
10. For "c1t" = 00.1 EUR and "dP" = 00.0 and "dPt" = 0.00
11. Calculation for example:
 - Number of pulses = $3.00 \text{ EUR} / 0.10 \text{ EUR} = 30 \text{ pulses}$
 - "rt" = $25 \text{ minutes} / 30 \text{ pulses} = 0.83 \text{ minutes}$

Activation of Wifi connection

Before connection to cloud (gateway), Wifi support must be activated in machine. Wifi kit must be installed in machine first.

Operation Menu

1. In L-menu, item CC set ON
2. In L-menu, item ADDR set 241
3. Wait 30 seconds
4. Reset machine power (off/on)
5. In L-menu, item ADDR set to machine identification number
(machine room number)

Standard Dry Programs

General

The EASY CONTROL Dryer Computer contains 3 programs.

Legend to Drying Programs				
	Sequence	Temperature	Time	Reversation
Step	Drying	X °C	Y min	A = 40 seconds, R = 5 seconds
	Cool down	-	Z min	

Table 2

TEMPERATURE

- X = Temperature Value programmable between 33.8 and 158°F [1 and 70°C]
- 24 kg / 53 lb / 530 L & 35 kg / 77 lb / 680 L, GAS AND ELECTRICAL HEATING ONLY: 33.8 - 179.6°F [1 - 82°C]

DRY TIME

- Y = Drying time Value

COOL DOWN TIME

- Z = Cool down time Value

REVERSATION

- A = 40“ 40 Seconds Action (Drum Turns)
- R = 5“ 5 Seconds Rest (Drum is at Standstill)

NOTE: For Safety Purposes the Dryer will always run a Cool down Sequence.

Drying Programs

Program 1: HIGH				
	Sequence	Temperature	Time	Reversation
Step 1	Drying	158°F [70°C] (*)	30 min	A = 40 seconds, R = 5 seconds
	Cool down	-	5 min	

Table 3

(*) 24 kg / 53 lb / 530 L & 35 kg / 77 lb / 680 L, GAS AND ELECTRICAL HEATING ONLY: Temperature program 179.6°F [82°C]

Program 2: MEDIUM				
	Sequence	Temperature	Time	Reversation
Step 1	Drying	104°F [40°C]	10 min	A = 40 seconds, R = 5 seconds
	Cool down	-	4 min	

Table 4

Program 3: LOW				
	Temperature	Temperature	Time	Reversation

Table 5 continues...

Program 3: LOW				
Step 1	Drying	86°F [30°C]	10 min	A = 40 seconds, R = 5 second
	Cool down	-	3 min	

Table 5

Networking

By using the PC software, it is possible to make some extra dryer program settings.

For a more detailed explanation, refer to Manual “PC – Networking software“.

Troubleshooting

Error Handling

- When an error occurs, the machine will go automatically in to a safety state.
- Determine the problem using the diagnostic program.
- The diagnostic program will test all dryer functions.

Monitoring Temperature and Humidity Values at Run Time

The values temperature sensor 1 & 2, and absolute air humidity sensor, can be monitored while drying the linen.

This can be helpful for diagnostic purposes.

While dryer is running, and the programming switch is in Program mode, press the High Temperature Button and the Temperature sensor 1 & 2 values and analogue value humidity sensor will be shown for two seconds.

- Sequence: t1, XXX, t2, YYY, Hum, ZZZ
- XXX = value temperature sensor 1
- YYY = value temperature sensor 2
- ZZZ = value absolute air humidity (value is 0, if sensor not available)

cal problem. The different failure messages are explained in the next paragraphs.

How To Handle The Error Messages

Verify what the Error message number corresponds with by using the table on the following pages.

OVERRULING DIAGNOSTIC MESSAGE FLT:

When “Flt” is displayed, it means the “Lint Filter” must be cleaned. The message will be cleared after opening and closing the “Lint Filter Door”. The message is also erased by opening the dryer door, but will appear again at the end of the next drying cycle. The number of cycles for which “Flt” is shown can be adjusted, or the function can be turned off, at “t-submenu” item “LCC”. If the message remains displayed even after the dust filter door has been opened and closed, check the 24VAC circuit (transformer, fuse, conductors, connectors, etc.)

DEPENDING ON THE KIND OF FAILURE, THE MACHINE WILL START A SPECIFIC PROCEDURE.

WHEN SAFETY IS INVOLVED:

Full stop + Cool down Sequence until safe temperature. Do not Start.

Error Messages

If a failure occurs, then the computer will display a diagnostic message. The message is a number that corresponds with a typi-

Failure Message Overview

N°	Failure Message	Failure	Action	Fault Occurrence
E1	Heating Safety 1	Heated air too hot	Heating Off, Continue	Whole cycle
E2	Heating Safety 2	Heater too hot	Heating Off, Continue	Whole cycle
E5	Motor Thermic	Motor Security Trips	Heating & Motor Off, Continue	Whole cycle
E6	Fan Motor Thermic	Fan Motor Security Trips	Heating & Motor Off, Continue	Whole cycle
E7	Drum Motor Thermic	Drum Motor Security Trips	Heating & Motor Off, Continue	Whole cycle
E8	Airflow switch Open at Startup	Airflow switch at start-up	Heating Off Continue	At Start-up
E9	Airflow switch Open after Startup	Airflow switch after startup	Heating Off	Whole Cycle after Start-up
E10	Airflow switch Closed	Airflow switch failure before start-up	Don't start	At Start-up

Table continues...

N°	Failure Message	Failure	Action	Fault Occurrence
E11	Fault Cool down	No temperature drop at cool down	Heating Off, Continue	At Cool down sequence
E12	No Reheating	Heating not restarted	Heating Off, Continue	At Heating sequence
E13	No Heating	Heating failure	Heating Off, Continue	At Heating sequence
E15	Too Hot	Too Hot	Heating Off, Full Stop at safe temperature	At Heating sequence
E16	Coin Blocking 1	Coin Detector 1 Blocked	Continue + Don't start	Any time
E17	Coin Blocking 2	Coin Detector 2 Blocked	Continue + Don't start	Any time
E18	Too Hot Safety	Temp. too high (risk of burn!)	Major Alarm	Before Start-up
E19	Defective Temperature sensor 1	Value out of range	Heating Off, Continue + Don't start	Before Start-up
E20	Defective Temperature sensor 2	Value out of range	Heating Off, Continue + Don't start	Before Start-up
E22	Ignition Error at Start-up	Ignition fails 3 times	Heating Off, Continue	At Start Up
E23	Ignition Error after Start-up	Ignition fails 3 times	Heating Off, Continue	Whole cycle
E24	Ignition Error Failure	Wrong Ignition Error Signal	Heating Off, Continue	No Heating
E25	No Humidity Sensor	Humidity Sensor not connected	Continue, for info only saved in Err log.	Whole cycle
E26	No Humidity Sensor Cap	Cap Humidity Sensor missing	Continue, for info only saved in Err log.	Whole cycle
E27	No Humidity Reduction	Time out no reduction humidity value	Heating Off, Full Stop at safe temperature	Whole cycle
E28	Lint Filter	Lint Filter has not been opened for 40 cycles	For info only saved in Err log	At Start Up
E35	Wrong Softw	Wrong software version	Don't start	New software version
E36	Too Hot End	At end cycle, temp. above 172.4°F [78°C]	Warning + Extra Cool down Time	End cycle
E37	Too Hot Safety	Temp. too high (risk of burn!)	Major Alarm + Extra Cool down Time	Whole cycle
E38	Lint Door Switch	Open Lint Door Switch while cycle is running	Drying Cycle Interrupted	Whole cycle
E41	Service Due	Service Due Warning	For Info only Open door = reset	End cycle
E50	Wifi Comm. Lost	Lost communication between machine control and with module	Continue, for info only saved in Err log.	Whole cycle

Table continues...

N°	Failure Message	Failure	Action	Fault Occurrence
E99	General memory and software Err	General memory and software Err	Heating Off, Full Stop at safe temperature	Any time
E150-E165	Memory Err	Memory Error	Full stop + safety time	Any time
E170-E199	Softw Err	Software Error	Full stop + safety time	Any time

Troubleshooting

Problem	Cause	Solving the problem
When the power is switched on: the display is not lighting up NOTE: The display must always light up when the power connector is connected to the power board (EPROM-Flash memory with software must be implemented).	No external power	Switch on the external power supply
		Verify the external tension of the machine
	The emergency stop button is activated	Deactivate the emergency stop button
	The power connector is not connected on the board	Connect the power connector
	Check voltage on the power supply connector	Check fuses in the power supply circuits of the control board. Remove the fuses after the cause of the fault has been rectified (short circuit / faulty control board).
	Check the power supply connector has been connected correctly	Check the wiring and connect the connector as it must be
	An external fuse interrupted feeding	Check the wiring and the tension at the power connector
	Disconnect the input connector	After investigation and the solving the problem, replace the fuse
	Check if the EPROM-Flash memory that contains the software is in its socket	If the display is lighting up: verify that the input signals or the +14V signal are not touching the cabinet
		If there is no EPROM-Flash memory on the main board, put the right EPROM-Flash memory with software into the socket
Coins are inserted but the displayed program price is not counting down	The microcontact mounted on the coindrop is not functional	Verify the correct functioning of the microcontact of the coindrop
		Positive pulses should be generated
	The optocoupler mounted on the coindrop is not functional	Verify the well functioning of the optocoupler, positive pulses should be generated
	Check the wiring to the coindrop	If the wiring is broken, repair the wiring
	Verify if you have entered a coin value in the “u”- sub-menu for the corresponding coindrop	Insert the correct coin value in the “u”- sub-menu
The machine is not starting up	The programming switch stands in “Program mode	Set the programming switch to “Run mode”
	The correct amount of coins is inserted	The START button must be pressed when START button LED is flashing

Table continues...

Problem	Cause	Solving the problem
The machine is not responding when pressing the keyboard buttons	The programming switch is not functional (no dot is displayed when switching in "Program mode")	Check if the input connector "A" is well connected and check wiring between the input connector and the programming switch
	The "START" button is not functional (the programming switch stays in Program mode)	Set the programming switch to "Run mode"
	The "TEMPERATURE" button is not functional (the programming switch stays in "Run mode")	Set the programming switch to "Program mode"
	No button is functional and the programming switch is in the correct position	Check if the connector "K" of the keyboard is well connected
The dot to indicate the software is in program mode can not be displayed or removed	The programming switch is not functional	Check if the input connector "A" is well connected and check the wiring between the input connector and the programming switch
	The infrared key is not functional	Set the "L" menu item Ir = On
		Use the programming switch at a distance less a 0.1 meter and in front of the machine
		Check the battery (the LED of the infrared key is eluminated when the button is pressed)
The machine is not operating as expected	If the wrong machine type is selected, the wrong setup will be switched on	Check if the right machine type is selected in the "S" sub-menu, load the Factory Settings again
A program is started, but the outputs are not activated	Check if connector "R" is connected	Connect the connector at the correct position
Dashes are displayed and on the lower display, a counter is counting down	This is a wait state caused by a power interruption or a safety sequence at the end of the process	Wait until the counter has reached 0
		Do not switch off/on the power, it will re-start the counter

Switching Off and On The Power

Some Error messages can be erased from the display by switching the power off and on.

NOTE: Fault 35 can only be erased by switching the power off and on .

Error Message Descriptions

For each failure message diagnostics are added.

IMPORTANT: Technical intervention on the dryer is only for qualified technicians with sufficient technical knowledge of the easy control dryer machine.

Failure 1: Heating Safety 1

Failure 1 occurs when the electronic timer detects that the heating safety located at the air outlet has opened it's NC contact.

(NC thermal contact) (failure 1 can only occur when the drying cycle is running).

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 1	
1. Check the air outlet system.	If the airflow is not sufficient, adjust the air outlet system.

Table 6 continues...

Diagnosing Failure 1	
2. Check the temperature sensor.	If the temperature sensor is not measuring correctly, replace the temperature sensor.
3. Check the heating system.	If the heating system is broken repair, replace the heating system.
4. Check the heating contactor (valve).	If the heating contactor (valve) is not functional repair or replace the component.
5. Check the wiring.	If the wiring is damaged, repair the wiring.
6. If the heating safety is not closing within 15 minutes.	The heating safety is broken and must be replaced.
7. Check the output relay that controls the heating system.	If the output relay is not functional, replace the control board.
8. Check the input Signal by monitoring the state at the Service menu.	If the input is not functional anymore, replace the control board.

Table 6

Failure 2: Heating Safety 2

Failure 2 occurs when the electronic timer detects that the heating safety located at the heater has opened it's NC contact. (NC thermal contact) (failure 2 can only occur when the drying cycle is running).

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 2	
1. Check the air outlet system.	If the airflow is not sufficient, adjust the air outlet system.
2. Check the temperature sensor.	If the temperature sensor is not measuring correctly, replace the temperature sensor.
3. Check the heating system.	If the heating system is broken repair, replace the heating system.
4. Check the heating contactor (valve).	If the heating contactor (valve) is not functional repair or replace the component.
5. Check the wiring.	If the wiring is damaged, repair the wiring.

Table 7 continues...

Diagnosing Failure 2	
6. If the heating safety is not closing within 15 minutes.	The heating safety is broken and must be replaced.
7. Check the output relay that controls the heating system.	If the output relay is not functional, replace the control board.
8. Check the input Signal by monitoring the state at the Service menu.	If the input is not functional anymore, replace the control board.

Table 7

Failure 5: Motor Thermic

Failure 5 occurs when the motor temperature (overcurrent) security has tripped. The contact will be closed again automatically after some time. (Failure 5 occurs for 1 motor machines). (NC thermal contact).

A skilled and experienced technician must examine the motor-drive system before the machine is put in operation again.

Diagnosing Failure 5	
1. Check if the thermal security of the motor is open.	If the thermal security is open, within 15 minutes the security will close automatically. If a motor is defective, the security can go open again when you restart the dryer. If it was only a temperature problem, and the motor is not defective: the overload security will not trip again.
2. Check that the airflow, drum and ventilator rotation is not obstructed.	Solve the mechanical problem.
3. If the thermal motor security is not closing after 15 minutes.	The thermal motor security might be broken.
4. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring.
5. Check the input signal by monitoring the state at the Service menu.	If the input is not functional anymore, replace the control board.

Table 8

Failure 6: Fan Motor Thermic

Failure 6 occurs when the fan motor temperature (overcurrent) security has tripped. The contact will be closed again automati-

cally after some time. (Failure 6 occurs only for 2 motor machines). (NC thermal contact).

A skilled and experienced technician must examine the motor-drive system before the machine is put in operation again.

Diagnosing Failure 6	
1. Check if the thermal security of the motor is open.	If the thermal security is open, within 15 minutes the security will close automatically. If a motor is defective, the security can go open again when you restart the dryer. If it was only a temperature problem and the motor is not defective: the overload security will not trip again.
2. Check that the airflow, drum and ventilator rotation is not obstructed.	Solve the mechanical problem.
3. If the thermal motor security is not closing after 15 minutes.	The thermal motor security might be broken.
4. Check the continuity of the wiring.	If the wiring is not continuous, repair the wiring.
5. Check the input signal by monitoring the state at the Service menu.	If the input is not functional anymore, replace the control board.

Table 9

Failure 7: Drum Motor Thermic

Failure 7 occurs when the motor temperature (overcurrent) security has tripped. The contact will be closed again automatically after some time. (Failure 7 occurs only for 2 motor machines) (NC thermal contact).

A skilled and experienced technician must examine the motor-drive system before the machine is put in operation again.

Diagnosing Failure 7

1. Check if the thermal security of the motor is open.	If the thermal security is open, within 15 minutes the security will close automatically. If a motor is defective, the security can go open again when you restart the dryer. If it was only a temperature problem and the motor is not defective: the overload security will not trip again.
2. Check that the airflow, drum and ventilator rotation is not obstructed.	Solve the mechanical problem.
3. If the thermal motor security is not closing after 15 minutes.	The thermal motor security will be probably broken.
4. Check the continuity of the wiring.	If the wiring is not continuous, repair the wiring.
5. Check the input signal by monitoring the state at the Service menu.	If the input is not functional anymore, replace the control board.

Table 10

Failure 8: Airflow Switch Open at Start-up

Failure 8 occurs when there is not sufficient airflow when the ventilator is switched On. This security function prevents the heating is switched On when the ventilator is not functional or if the airflow is obstructed.

(Failure 8 occurs only at start-up) (NO contact).

The Airflow Switch has a safety function and it must not be obstructed.

A skilled and experienced technician must examine the dryer system before the machine is put in operation again.



WARNING

For new installations the air outlet tubes must have the right size for the air flow of the corresponding machine. Follow the instructions in the installation manual.

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Diagnosing Failure 8	
1. Check if the ventilator is functional.	If the ventilator is not functional, repair or replace the ventilator, belt, motor control system, wiring or the power supply circuit of the ventilator. In normal operation, the Ventilator is switched On immediately after pressing the START button. The ventilator must stay on for the entire drying cycle.
2. Check if there is sufficient airflow. Check if the Dryer is a closed box. (Lint filter Door, mechanical panels must be present and closed properly).	When the Dryer is not a closed box, air will escape and the airflow will not be sufficient to switch the Airflow Switch. Make sure that there is no loss of Airflow. Example : close the Lint Filter Door properly.
3. Check if the switch and metal plate and airflow detection system is still functional.	If the airflow detection system or the switch is out of order, it must be repaired or replaced.
4. Check the continuity of the wiring	If the wiring is not continuous: repair the wiring
5. Check the input signal by monitoring the state at the Service menu.	If the input is not functional anymore, replace the control board.

Table 11

Failure 9: Airflow Switch Open After Start-up

Failure 9 occurs when there is not sufficient airflow when the ventilator is turning. This security function makes the heating switch Off when the ventilator is suddenly Not functional anymore or if the airflow gets obstructed.

(Failure 9 occurs only after start-up) (NO contact).

The Airflow Switch has a safety function and it must not be obstructed.

A skilled and experienced technician must examine the dryer system before the machine is put in operation again.

Diagnosing Failure 9	
1. Check if the ventilator is functional.	If the ventilator is not functional, repair or replace the ventilator, belt, motor control system, wiring or the power supply circuit of the ventilator. In normal operation, the Ventilator is switched On immediately after pressing the START button. The ventilator must stay on for the complete time of the drying cycle.
2. Check if there is sufficient airflow. Check if the Dryer is a closed box. (Lint filter Door, mechanical panels must be present and closed properly).	When the Dryer is not a closed box, air will escape and the airflow will not be sufficient to switch the Airflow Switch. Make sure that there is no loss of Airflow. Example: close the Lint Filter Door properly.
3. Check if the switch and metal plate and airflow detection system is still functional.	If the airflow detection system or the switch is out of order, it must be repaired or replaced.
4. Check the continuity of the wiring	If the wiring is not continuous, repair the wiring.
5. Check the input signal by monitoring the state at the Service menu.	If the input is not functional anymore, replace the control board.

Table 12

Failure 10: Airflow Switch Closed

Failure 10 occurs at the start of the drying cycle. Before the ventilator is switched On, the Airflow switch must be open. If the flow detection system is out of order, and the switch is closed, an error message will be displayed.

(Failure 10 occurs only in standby mode) (NO contact).

The Airflow Switch has a safety function and it must not be obstructed.

A skilled and experienced technician must examine the dryer system before the machine is put in operation again.

Diagnosing Failure 10	
1. Check if the airflow detection system is still functional.	If the airflow detection system or the switch is out of order, it must be repaired or replaced.
2. Check if the ventilator is switched On immediately after pressing start.	Check the contactor, wiring and the ventilator command signal.
3. Check the continuity of the wiring.	If the wiring is not continuous, repair the wiring.
4. Check that the ventilator is switched Off at the end of the drying cycle.	If the contactor is not correctly functioning, replace the contactor.
5. Check the input signal by monitoring the state at the Service menu.	If the input is not functional anymore, replace the control board.

Table 13

Failure 11: Fault Cool down

Failure 11 occurs when the temperature does not decrease when the Cooldown sequence is in progress. (No cooldown at all after 15 minutes at cool down sequence for temperature above 122°F [50°C]).

(Refer to Monitoring Temperature and Humidity Values at Run Time).

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 11	
1. Check if the heating system is switched Off.	If no temperature ramp has been programmed for the cool down sequence, the heating system must be switched Off. Check the contactor (valve), wiring, and the ventilator command signal.
2. Check if the temperature sensor is functional.	If the temperature sensor is not measuring correctly, replace the temperature sensor.
3. Check the output relay that controls the heating system.	If the output relay is not functional, replace the programmer board.

Table 14

Failure 12: No Reheating

Failure 12 occurs at a heating (cooldown with ramp) sequence when the heating is not switched On again at the temperature control process when the lowest temperature hysteresis value is reached.

(Refer to Monitoring Temperature and Humidity Values at Run Time.)

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 12	
1. Check if there is no interruption of the electrical power, gas or steam heating power supply.	The machine will not heat when there is no energy supply for the heating system. Avoid interruptions of the energy supply.
2. Check if the heating system is functional.	If the heating system fails to work, repair or replace the heating system.
3. Check the heating contactor (valve).	If the heating contactor (valve) is not functional, repair or replace the component.
4. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring.
5. Check if the temperature sensor is functional.	If the temperature sensor is not measuring correctly, replace the temperature sensor.
6. Check the output relay that controls the heating system.	If the output relay is not functional, replace the control board.

Table 15

Failure 13: No Heating

Failure 13 occurs when the heating system is not functional at start up. (No temperature raise of 41°F [5°C] in 30 minutes after start drying cycle.)

(Refer to Monitoring Temperature Humidity Values at Run Time).

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 13	
1. Check if there is no interruption of the electrical power, gas or steam heating power supply.	The machine will not heat when there is no energy supply for the heating system. Avoid interruptions of the energy supply.
2. Check if the heating system is functional.	If the heating system fails to work, repair or replace the heating system.
3. Check the heating contactor (valve).	If the heating contactor (valve) is not functional, repair or replace the component.
4. Check the continuity of the wiring.	If the wiring is not continuous, repair the wiring.
5. Check if the temperature sensor is functional.	If the temperature sensor is not measuring correctly, replace the temperature sensor.
6. Check the output relay that controls the heating system.	If the output relay is not functional, replace the control board.

Table 16

Failure 15: Too Hot

Failure 15 occurs when the actual heating temperature goes 59°F [15°C] above the target temperature at the drying process.

(Refer to Monitoring Temperature Humidity Values at Run Time).

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 15	
1. Check the air outlet system.	If the airflow is not sufficient, adjust the air outlet system.
2. Check the temperature sensor.	If the temperature sensor is not measuring correctly, replace the temperature sensor.
3. Check the heating system.	If the heating system is broken, repair or replace the heating system.
4. Check the heating contactor (valve).	If the heating contactor (valve) is not functional, repair or replace the component.
5. Check the wiring.	If the wiring is damaged, repair the wiring.

Table 17 continues...

Diagnosing Failure 15	
6. Check the output relay that controls the heating system.	If the output relay is not functional, replace the control board.
7. Check the input Signal by monitoring the state at the Service menu.	If the input is not functional, replace the control board.

Table 17

Failure 16: Coin Blocking 1

Failure 16 occurs when the input for coin drop 1 is blocked for more than 5 seconds.

Case EP = ON.

Fault 16 will be displayed if the external start release signal is high for more than 10 seconds when the door has been opened at the end of the program.

Diagnosing Failure 16	
1. Check the function of coin drop 1.	If the coin drop micro contact or optocoupler is not functioning 100%, replace the coin drop.
2. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring.

Table 18

Failure 17: Coin Blocking 2

Failure 17 occurs when the input for coin drop 2 is blocked for more than 5 seconds.

Diagnosing Failure 17	
1. Check the function of coin drop 2.	If the coin drop micro contact or optocoupler is not functioning 100%, replace the coin drop.
2. Check the continuity of the wiring.	If the wiring is not continuous: repair the wiring.

Table 19

Failure 18: Too Hot Safety

Failure 18 occurs when the actual heating temperature rises above safety temperature 185°F [85°C] while the machine is waiting to be started (not running).

The display will show “Hot“ and the air temperature indicating there is something wrong.

Check Safety Thermostats ST1 & ST2, they should switch off the heating system and prevent high temperatures.

(Refer to Monitoring Temperature and Humidity Values at Run Time).

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

	WARNING
IF FAILURE 18 OCCURS WE CAN EXPECT THERE IS RISK OF BURN AND NECESSARY ACTIONS MUST BE TAKEN TO REDUCE TEMPERATURE.	
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Diagnosing Failure 18	
1. Check the air outlet system.	If the airflow is not sufficient, adjust the air outlet system.
2. Check the temperature sensor.	If the temperature sensor is not measuring correctly, replace the temperature sensor.
3. Check the heating system.	If the heating system is broken, repair or replace the heating system.
4. Check the heating contactor (valve).	If the heating contactor (valve) is not functional, repair or replace the component.
5. Check the wiring.	If the wiring is damaged, repair the wiring.
6. Check the Safety Thermostats ST1 & ST2.	The Safety Thermostats should open before failure 18 is generated.
7. Check the output relay that controls the heating system.	If the output relay is not functional, replace the control board.
8. Check the input Signal by monitoring the state indication at the Service menu.	If the input is not functional anymore, replace the control board.

Table 20

Failure 19: Defective Temperature Sensor 1

Failure 19 occurs when the temperature sensor (located at the air outlet) is broken. The fault is only displayed when the machine is in standby mode and no program is active.

The fault can only be erased by switching off and on the power. If the fault is still present after switching on the power fault message 19 will be generated again.

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 19	
1. Check if the temperature sensor is connected on the PCB Board.	The Female connector must be connected with the Male connector T1 of the PCB board.
2. Check the temperature sensor.	If the temperature sensor is broken, replace the temperature sensor.
3. Measure the resistance of the sensor.	If the resistance is not OK, replace the temperature sensor.
4. Check if the earth wire is at the middle position of the connector.	If the earth wire is not at the middle position, put the earth wire in the middle position of connector T1.
5. If the fault is persistent.	Replace the electronic board. Be sure the problem is related to the electronic board and not to a defective temperature sensor.

Table 21

Failure 20: Defective Temperature Sensor 2

Failure 20 occurs when the temperature sensor (located at the heater) is broken. The fault is only displayed when the machine is in standby mode and no program is active.

The fault can only be erased by switching off and on the power. If the fault is still present after switching on the power, fault message 20 will be generated again.

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 20	
1. Check if the temperature sensor is connected on the PCB Board.	The Female connector must be connected with the Male connector T2 of the PCB board.
2. Check the temperature sensor.	If the temperature sensor is broken, replace the temperature sensor.
3. Measure the resistance of the sensor.	If the resistance is not OK, replace the temperature sensor.
4. Check if the earth wire is at the middle position of the connector.	If the earth wire is not at the middle position, put the earth wire in the middle position of connector T2.

Table 22 continues...

Diagnosing Failure 20	
5. If the fault is persistent.	Replace the electronic board. Be sure the problem is related to the electronic board and not to a defective temperature sensor.

Table 22

Diagnosing Failure 22	
7. Check the output relays that control the heating system.	If an output relay is not functional, replace the control board.
8. Check the electrical Input Ignition Error at the control board.	If the input of the control board is not functional anymore, replace the control board.

Table 23

Failure 22: Ignition Error at Start-up (GAS HEATING ONLY)

Failure 22 occurs when the heating system has a problem to switch on the fire at start up.

If the problem is still persistent after 3 automatic resets, error message 22 is generated.

The dryer computer will try up to 9 times to turn on the gas heating.

The gas ignition system closes contactor KA3 (input 4 High) to inform the dryer computer that the gas ignition system failed to switch on the fire.

Then the ignition system is reset by the dryer computer by switching on the reset signal gas ignition system (contactor KA2).

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 22	
1. Check the gas supply.	Without gas supply, the heater can not function. Right Gas supply and pressure must be available.
2. Check the heating system.	If the heating system is broken, repair replace the heating system.
3. Check the gas ignition system.	If the gas ignition system is not functional, replace the gas ignition system.
4. Check the heating contactor.	If a heating contactor is not functional, replace the component.
5. Check contactor KA3 (Ignition Error).	If the contactor KA3 is not functional, replace the component.
6. Check the wiring.	If the wiring is damaged, repair the wiring.

Table 23 continues...

Failure 23: Ignition Error After Start-up (Run) (GAS HEATING ONLY)

Failure 23 occurs when the heating system has a problem to switch on the fire when the dryer tries to restart the gas heating system. (While the dry cycle is running).

If the problem continues after 3 automatic resets, error message 23 is generated.

The dryer computer will try up to 9 times to turn on the gas heating.

The gas ignition system closes contactor KA3 (input 4 High) to inform the dryer computer that the gas ignition system failed to switch on the fire.

Then the ignition system is reset by the dryer computer by switching on the reset signal gas ignition system (contactor KA2).

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 23	
1. Check the gas supply.	Without gas supply, the heater can not function. Right Gas supply and pressure must be available.
2. Check the heating system.	If the heating system is broken, repair replace the heating system.
3. Check the gas ignition system.	If the gas ignition system is not functional, replace the gas ignition system.
4. Check the heating contactor.	If a heating contactor is not functional, replace the component.
5. Check contactor KA3 (Ignition Error).	If the contactor KA3 is not functional, replace the component.

Table 24 continues...

Diagnosing Failure 23	
6. Check the wiring.	If the wiring is damaged, repair the wiring.
7. Check the output relays that control the heating system.	If an output relay is not functional, replace the control board.
8. Check the electrical Input Ignition Error at the control board.	If the input of the control board is not functional, replace the control board.

Table 24

(Refer to Monitoring Temperature and Humidity Values at Run Time).

Failure 25 can occur when the dryer is running without linens inside. This should not be considered as a system failure. Check correct dryer operation with a normal amount of wet linen.

	WARNING
THE HUMIDITY CONTROL SYSTEM IS NOT MADE TO RUN WITHOUT LOAD OR WITH A VERY SMALL LOAD. THE SYSTEM CAN ONLY FUNCTION IN A NORMAL WAY WHEN THERE IS SUFFICIENT EVAPORATION TO BE MEASURED BY THE AIR HUMIDITY SENSOR.	
C133	

Diagnosing Failure 25	
1. Check if the humidity sensor is connected to the dryer computer.	If the humidity sensor is not connected to the dryer computer, connect the sensor.
2. Check the wiring.	If the wiring is damaged, repair the wiring.
3. Check the supply voltage humidity sensor.	If there is no, or wrong supply voltage, replace the dryer computer.
4. Check the humidity sensor and amplifier.	If the humidity sensor or amplifier is damaged, replace the humidity sensor and amplifier.
5. Check the analog input signal. (Inputs can be checked, one by one, in the Service menu).	If for Analogue value 3, the value at the Analog input menu = "0" then the analog input signal is missing. If the input of the controller board is not functional, replace the controller board. (first check previous items)

Table 26

Failure 26: No Humidity Sensor Cap (HUMIDITY CONTROL ONLY)

Failure 26 occurs when the dust cap at the humidity sensor is missing.

When the dust cap is missing, due to the influence of the air flow in the dryer, the sensor will measure a too big value which is out of range at normal operation.

(At the "t"-menu you can switch off/on the Humidity Control function).

Failure 24: Ignition Error Failure (GAS HEATING ONLY)

Failure 24 occurs after 3 attempts when the Gas Ignition system fails to be reset.

Cause: Input Signal Ignition Error Failure stays high (Input 4) after 3 attempts of dryer computer to reset gas ignition system (contactor KA2). This is to be considered a major hardware failure.

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

Diagnosing Failure 24	
1. Check the gas ignition system.	If the gas ignition system is broken, replace the gas ignition system.
2. Check the wiring.	If the wiring is damaged, repair the wiring.
3. Check contactor KA3 (Ignition Error).	If the contactor KA3 is not functional, replace the component.
4. Check the electrical Input Ignition Error at the control board.	If the input of the control board is not functional, replace the control board.

Table 25

Failure 25: No Humidity Sensor (HUMIDITY CONTROL ONLY)

Failure 25 occurs when the humidity sensor does not give an analog electrical output signal to the dryer computer.

Example: connector not connected to dryer computer.

(At the "t"-menu you can switch off/on the Humidity Control function).

NOTE: The humidity sensor needs 1 minute after switching on the power supply dryer to stabilize the analog output signal.

NOTE: The humidity sensor needs 1 minute after switching on the power supply dryer to stabilize the analog output signal.

(Refer to Monitoring Temperature and Humidity Values at Run Time).

Diagnosing Failure 26	
1. Check if the dust cap is mounted on the sensor.	If the dust cap is missing or broken, put a new dust cap on the humidity sensor.
2. Check the wiring.	If the wiring is damaged, repair the wiring.
3. Check the supply voltage humidity sensor.	If there is no, or wrong supply voltage, replace the dryer computer.
4. Check the humidity sensor and amplifier.	If the humidity sensor or amplifier is damaged, replace the humidity sensor and amplifier.
5. Check the analog input signal. (Inputs can be checked, one by one, in the Service menu.)	If for Analogue value 3, the value at the Analog input menu > "800" then the analog input signal is out of range. If the input of the controller board is not functional, replace the controller board. (First check previous items.)

Table 27

	WARNING
IF THE DRYER IS EXECUTED WITH AIR HUMIDITY SENSOR, THE DRYER CAN ONLY OPERATE CORRECTLY IF THE DUST CAP IS MOUNTED ON THE AIR HUMIDITY SENSOR.	
C141	

Failure 27: No Humidity Reduction

Failure 27 occurs when the humidity value does not decrease within 60 minutes when the drying sequence is in progress. (Maximum drying time by humidity control is set default on 60 minutes.)

(Refer to Monitoring Temperature and Humidity Values at Run Time).

Diagnosing Failure 27	
1. Check if the humidity sensor is functional.	Check if there is lint obstructing the sensor.
2. Check if the humidity sensor is functional.	If the wiring of the sensor is broken, repair the wiring.
3. Check if the humidity sensor is functional.	If the sensor is not functional at all, replace the sensor. (If you blow with your mouth on the sensor, the humidity value must change.) (Remove filter cap first.)
4. Check if the heating-drying system is functional.	If there is not sufficient airflow or heating power, the fabrics in the dryer will not get dry. Repair the problem.
5. Check if the analog input and power supply of the sensor on the control board is functional.	If the sensor control circuit is not functional, replace the control board.

Table 28

Failure 28: Lint Filter

Failure 28 occurs when the Lint Filter Door has not been opened for 40 succeeding cycles.

Check value of the Lint Filter Door Cycle Counter at the Running State-Service menu. (Special function button)

Diagnosing Failure 28	
1. The Lint Filter must be cleaned every day.	If the Lint Filter has not been cleaned for 40 days, open the Lint Door and clean the Filter. Close the door again. The Lint Filter Door Cycle will be reset.
2. Check if the Lint Filter Door Cycle Counter is reset by opening the Lint Door.	If the Lint Filter Door Switch is broken, replace the Lint Filter Door Switch. (Normal Closed Contact.)
3. Check if the Lint Filter Door Cycle Counter is reset by opening the Lint Door.	If the wiring is broken, repair the wiring.
4. Check if the Lint Filter Door Cycle Counter is reset by opening the Lint Door.	If the input of the control board is not correctly functioning, replace the control board.

Table 29

Failure 30: Broken Relays External Payment System

Failure 30 occurs when the External payment system relays stays closed for longer then the maximum allowed drying time (60 minutes).

Only applicable for set-up selection "EP = RL3". The dryer will run as long as the external payment system relays is closed. As the dryer should not run longer then maximum allowed drying time, it will be stopped for safety purposes.

Diagnosing Failure 30	
1. Check if the right machine set-up has been selected.	Select the right setup.
2. Check the external payment system.	If the external payment system is broken, repair the system.
3. Check the wiring.	If the wiring is damaged, repair the wiring.
4. Check the electrical Input at the control board.	If the input of the control board is not functional, replace the control board.

Table 30

Failure 35: Wrong Software Version

When a total new software that isn't downward compatible with previous software versions is loaded, then the software will detect that the old and new softwares are not compatible. You have to re-configure the EASY CONTROL Dryer Computer. Refer to Initializing the machine.

	WARNING
ALL THE CUSTOM SETTINGS WILL BE ERASED IN THE CONTROL DRYER COMPUTER BY LOADING THE FACTORY SETTINGS.	
C142	

After reinitialization of the EASY CONTROL Dryer Computer, fault 35 can only be erased by switching the power Off/On.

Failure 36: Too Hot End

Failure 36 occurs when the actual cool down temperature at the end of the dry cycle is still above 172.4°F [78°C] .

If at the end of the drying cycle the temperature is above 172.4°F [78°C] the dryer will go on with the cool down sequence for 60 minutes (or until temperature below 149°F [65°C] , or until open door). If the temperature is still above 158°F [70°C] after these 60 extra minutes, cool down Failure 36 is generated.

On the display will be shown "Hot" and the air temperature as indication that there is something wrong.

(Refer to Monitoring Temperature Values).

Diagnosing Failure 36	
1. Check the air outlet system.	If the airflow is not sufficient, adjust the air outlet system.
2. Check the temperature sensor.	If the temperature sensor is not measuring correctly, replace the temperature sensor.
3. Check the heating system.	If the heating system is broken, repair or replace the heating system.
4. Check the heating contactor (valve).	If the heating contactor (valve) is not functional, repair or replace the component.
5. Check the wiring.	If the wiring is damaged, repair the wiring.
6. Check the output relay that controls the heating system.	If the output relay is not functional, replace the control board.
7. Check the Analog Temperature input Signal by monitoring the state at the Service menu.	If the input is not functional anymore, replace the control board.

Table 31

Failure 37: Too Hot Safety

Failure 37 occurs when the actual heating temperature rises above safety temperature 185°F [85°C] while the machine is running.

(24kg / 53lb / 33 L & 35kg / 77lb / 46 L ELECTRICAL HEATING ONLY : 212°F [100°C])

If at the end of the drying cycle, the temperature is above 185°F [85°C] (212°F [100°C]), the dryer will go on with the cool down sequence for 30 minutes (or until temperature below 149°F [65°C] or until open door).

The display will show "Hot", indicating something is wrong.

Check Safety Thermostats ST1 & ST2 as they should switch off the heating system and prevent high temperatures.

(Refer to Monitoring Temperature Values).

A skilled and experienced technician must examine the heating and air outlet system before the machine is put in operation again.

	WARNING
IF FAILURE 37 OCCURS WE CAN EXPECT THERE IS RISK OF BURN AND NECESSARY ACTIONS MUST BE TAKEN TO REDUCE TEMPERATURE.	
C143	

Diagnosing Failure 37	
1. Check the air outlet system.	If the airflow is not sufficient, adjust the air outlet system.
2. Check the temperature sensor.	If the temperature sensor is not measuring correctly, replace the temperature sensor.
3. Check the heating system.	If the heating system is broken, repair or replace the heating system.
4. Check the heating contactor (valve).	If the heating contactor (valve) is not functional, repair or replace the component.
5. Check the wiring.	If the wiring is damaged, repair the wiring.
6. Check the Safety Thermostats ST1 & ST2.	The Safety Thermostats should go open before failure 37 is generated.
7. Check the output relay that controls the heating system.	If the output relay is not functional, replace the control board.
8. Check the input Signal by monitoring the state at the Service menu.	If the input is not functional, replace the control board.

Table 32

Failure 38: Lint Door Switch

Failure 38 occurs when the Lint Door Switch is opened while the drying cycle is running.

At normal operation the Lint Door Switch should not open while the drying cycle is running.

Diagnosing Failure 38	
1. Check if the Lint Filter Door is closed.	If the Lint Filter Door is not closed, close the door properly.

Table 33 continues...

Diagnosing Failure 38	
2. Check if the Lint Filter Door Switch (NO contact), is closed.	When the Lint Filter Door is closed, the Door Switch contact must be closed. If the Switch is damaged, replace the Switch.
3. Check the wiring.	If the wiring is damaged, repair the wiring.
4. Check the input Signal by monitoring the state at the Service menu.	If the input is not functional, replace the control board.

Table 33

Failure 41: Service Due

Service Due Err message is an indication that there must be a maintenance intervention.

Consult the Installation - Maintenance manual about the kind of the intervention that is required.

Err message 41 is just for informational purposes and the machine can still be operated, but to get rid of the Err message, a reset of the cycle counter is required.

Set the programming switch in program mode. Press the "MIDDLE" Temperature button. On the display the cycle counter is displayed (only for a few seconds).

While the cycle counter is displayed, Press the "MIDDLE" Temperature button 3 times. The cycle counter is now reset to value 0 and Err 41 Service Due is also reset.

Failure 50: Wifi communication lost

Failure occurs if communication between control unit and wifi module is not functional.

Diagnosing Failure 50	
1. Check that wifi module is installed in machine.	If not, then deactivate item CC in L-menu
2. Check wires and USB converter between control and wifi module	If the wiring is not continuous: repair the wiring...
3. Check that SD card is correctly installed in Wifi module	Insert CD card correctly
4. Check supply of wifi module. Green LED must be ON on wifi module.	If supply LED is not ON then replace supply or wifi module

Failure 95: Watch Dog

If the watch dog has been activated, message 95 is logged in the Error log register. If this occurs often, ask the help of a technician.

Failure 99: General Memory and Software Error

In the memory log Err99 is replaced by the corresponding memory (150-165) and software (170-199) Errors.

Failure 150-165: Memory Errors

If a memory error occurs, then something is wrong with the EEPROM.

Try to reload the Programs. Check for source of electrical “noise”.

Failure 170-199: Software Errors

Software errors must never occur, if a software error message occurs, inform the manufacturer.

NOTE: At the end of the drying cycle when the temperature is > 165.2°F [74°C] and < 174.2°F [79°C] , the cool-down sequence will take 3 minutes extra. Meanwhile this extra cooldown sequence is happening, 0 minutes is displayed .

Humidity Control - Troubleshooting

The analogue value humidity sensor can be watched while drying the linen. This can be helpful for diagnostic purposes.

While dryer is running, programming switch in Program mode, press High Temperature button and the analogue value humidity sensor is shown for 2 seconds.

	WARNING
THE HUMIDITY CONTROL SYSTEM IS NOT MADE TO RUN WITHOUT LOAD OR WITH A VERY SMALL LOAD. THE SYSTEM CAN ONLY FUNCTION IN A NORMAL WAY WHEN THERE IS SUFFICIENT EVAPORATION TO BE MEASURED BY THE AIR HUMIDITY SENSOR.	
C133	

	WARNING
CHECK CORRECT DRYER OPERATION WITH A NORMAL AMOUNT OF WET LINEN.	
C178	

Troubleshooting problems with Humidity Control:

Operation with a small load of laundry

The humidity control system is not designed for operation without any load, or with a very small load. It is advisable to set the maximum dry time after which the drying operation will be terminated

- (Refer to Chapter Initializing the Machine - Drying Control Function).

Check dust filter cap

When humidity control does not work, check if the dust filter cap is missing. The dust filter cap is a white cover that must not be removed from the sensor device. The dust filter cap allows air to pass.

Check door lock system

When the dryer door is not completely closed, air from the room is sucked in the dryer. This causes a wrong air humidity measurement. Make sure the dryer can only run when the door is in the closed (locked) position. (When door is still 10 mm open, it should not be possible to start a dryer program.)

Check heating and airflow

The air humidity measurement can only function when there is sufficient water evaporation from the linen. Evaporation can only happen when the, air and indirectly the linen is sufficiently heated. If the dryer has to run with reduced heating power, the airflow must be sufficiently reduced so there is still evaporation.

Example:

- There is in sufficient Electrical Current available at the building.
- The dryer works with only 50% of it's electrical heating power.
- The airflow must be sufficiently reduced so there is still enough evaporation inside the dryer to allow optimal humidity control.

Check final drying temperature

At a normal drying process, the outlet air temperature reaches the programmed target value when the linen gets dry. For a correct drying process: when humidity control stops the dryer, the dryer must have reached, before the end of the drying cycle, the programmed target temperature value. If this is not the case, probably there will not have occurred sufficient evaporation at the drying process because of reduced heating power. And the air humidity measurement will not have been accurate to allow optimal humidity control.

Linen must be sorted

A mixture of linen in the dryer can not result in an equal drying result. It is a good practice that the same kind of linen is sorted and dried together, (Coton, Synthetic). In case of Humidity Control, a mixture of all kinds of linen will not give a good overall drying result.

Thin - Thick Fabrics

Thick fabrics, like jeans or trousers, need a long drying time. Dryer program will stop when fabrics are mostly dry, but inside pockets will still feel damp. In case of thin fabrics, where the linen is sewed together there may be damp spots. Humidity Control stops the dryer when the linen is dry, based on the measured air humidity.

Correct Load in Drum

Some fabrics need more space in dryer than others. It is important to choose the right size of dryer to obtain a good airflow.

- If there is more linen in the drum, the airflow will be restricted and the linen will not be dried evenly.

Service Information

Instructions for Installing New Software Control Specifications

WHEN TO INSTALL NEW SOFTWARE

To add new features to the software and to improve the functionality of the dryer, new software releases are produced by the manufacturer.

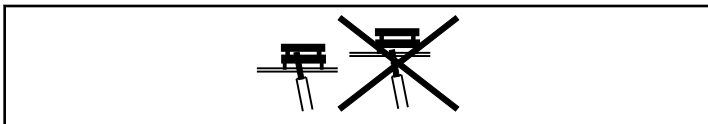


Figure 6

INSTRUCTIONS FOR INSTALLING NEW SOFTWARE

1. Switch off the main power.
2. Open the cover plate of the dryer.
3. The EPROM-Flash memory with the implemented software is the only IC on the logic board that can be removed.
4. Take the EPROM-Flash memory out of the IC-holder and replace it with a new one. Make sure to put the screwdriver between the component and the socket. Refer to *Figure 6*
5. Make sure to put the new chip in the correct position. Refer to *Figure 7*
6. Switch on the main power.
7. The display should be lighting up.
8. If the software is compatible: the new software can be used without reinitialization.
9. Clear all the error messages in the system menu to allow a correct determination about the new software implementation.
10. If the software is not 100% compatible with the previous software version:
 - The new software will generate diagnostic message 35. When diagnostic message 35 occurs you must execute a factory reset in the "S" - sub-menu.
11. Start a new cycle.

NOTE: All your custom made settings will be erased.

- Refer to *Failure 35: Wrong Software Version*.
- For a new dryer computer, after loading the standard programs, erase diagnostic message 35 by switching the power off/on.

	WARNING
CONNECTION TO THE WRONG VOLTAGE MAY CAUSE SERIOUS BODILY INJURY AS WELL AS DAMAGE TO THE ELECTRONIC PART AND TO THE DRYER ITSELF.	
C102	

- Voltage: 200-240 Vac, 50/60 Hz
- Power: max 8 VA
- Memory:
 - EPROM - Flash (contains the software)
 - EEPROM (contains the customised programs)
- Outputs: 6 relays
- Serial interface: RS485 (2 wire) or infrared communication between control and external computer (if implemented)
- Display units: 5 LEDs and 3 pcs of seven segment displays

WINDOW FOR INFRARED COMMUNICATION

- The infrared communication signal passes through a small window on the control panel.

SOFTWARE VERSION AND DATE

- XXX-VVV
- XXX = ID
- VVV =Version

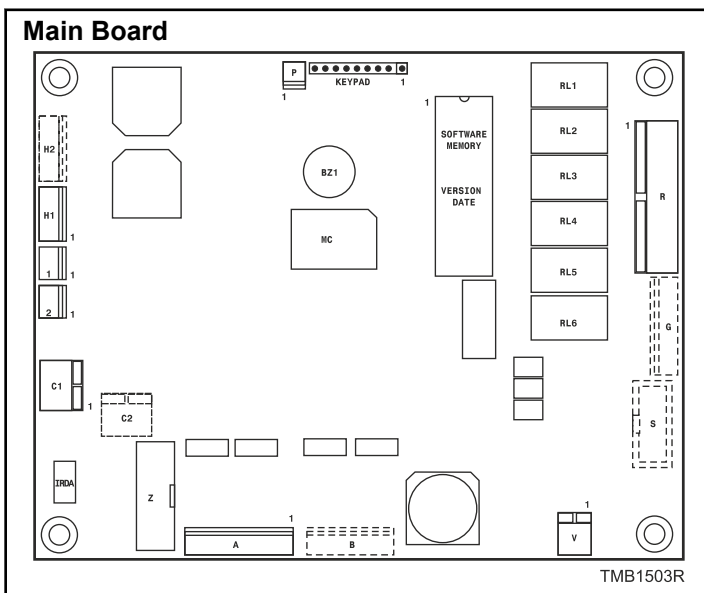


Figure 7

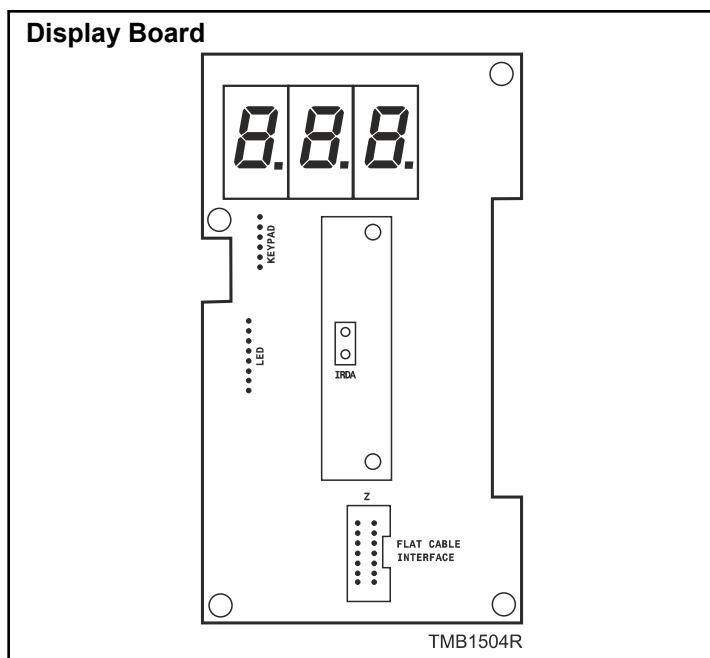


Figure 8