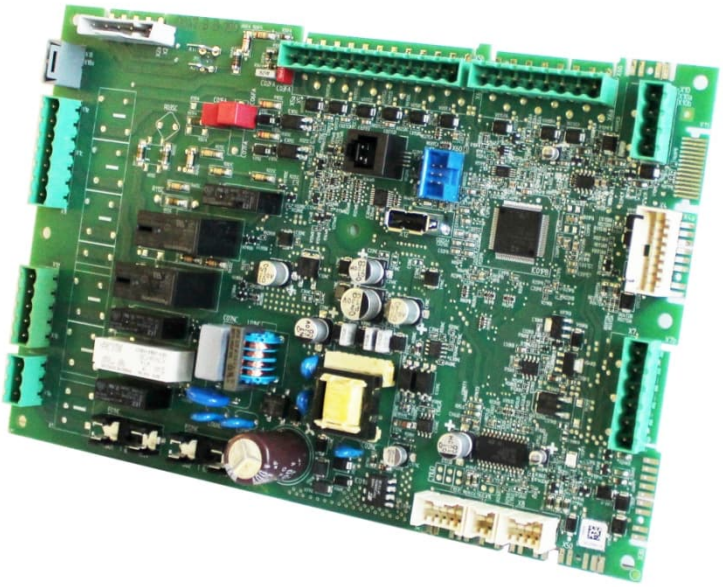
SIEMENS

7471



Illustrative example: LMS14

Boiler Management Unit (BMU)

LMS14...
LMS15...

LMS1x are digital Boiler Management Units (BMUs) for use in gas-fired appliances equipped with premixing burners.

The LMS1x and this Data Sheet are intended for use by OEMs which integrate the BMUs in their products.

Notes

Please note!
All the safety, warning, and technical notes given in the user manual for the LMS1x (U7471/U7472) also apply to this document in full. Failure to observe this information poses a risk of damaging the safety functions and the risk of electric shock.

Use

LMS1x are digital boiler management units (BMUs) for use with gas-fired appliances equipped with premix burners. They are used for startup, control and supervision of premix burners with capacities from <10 kW to 1 MW in intermittent operation with direct ignition of the main flame. The OEM must make certain that the LMS1x are suited for the application in question.

The LMS1x provide all supervisory and control functions required for burner operation, space heating and DHW heating. They also offer modular system extensions in the form of integrated communication interfaces. Output modulation is performed via a PWM-controlled fan with pneumatic/electrical gas-air ratio control.

With the LMS14, load modulation is performed via a PWM-controlled fan with pneumatic gas-air ratio control.

With the LMS15, load modulation is performed by a PWM-controlled fan via an electronic ratio control regulated by the Sitherm Pro combustion optimizer.

Supplementary documentation

LMS14	LMS15	Type (ASN)	Description	Documentation no.
●		LMS14	Boiler Management Unit	CC1E7471 *) CC1Q7471 CC1U7471
	●	LMS15	Boiler Management Unit Sitherm Pro	CC1E7471 *) CC1Q7471 CC1U7471 CC1U7472
●	●	Product range	Product range overview Albatros²	CE1Q2359
●	●	System	Albatros² system	CE1P2359_08
●	●	Subschema	Albatros² Hydraulic subschema and extra functions	CE1P2359_10
●	●	ACS420	Software for OCI430	---
●	●	ACS432	Parameter stick manager	CC1J7474
●	●	ACS434	Setup assistant	CC1J7475
●	●	ACS435	Setup-Manager	CC1J7471
●	●	ACS700	Remote supervision software / parameterization software for OCI700	Software CD
●	●	ACS790	Remote supervision software/parameterization software for OCI700	Software CD
●	●	AGU2.550	Extension ClipIn for LMS1x	CC1N7492
●	●	AGU2.551	Extension ClipIn for PWM (DC 0...10 V)	CC1N7493
●	●	AGU2.560	Parameter stick for LMS1x, can be read out	CC1U7471
●	●	AGU2.561	Parameter stick for LMS1x, writable	CC1U7471
●	●	AGU2.563	Parameter stick for direct programming of the LMS1x	CC1U7471
●	●	AGU2.564	Parameter stick for spare part programming of the LMS1x	CC1U7471
●	●	AGU3.6	Gas/air mixer	CC1N7211
●	●	AGU3.7	Gas/air mixer	CC1N7214
●	●	AVS13.399	Wireless outside sensor	CE1U2354
●		AVS14.390	Wireless repeater	CE1U2354
●	●	AVS37.294	Operating unit (clear text)	CE1U2353
●	●	AVS37.390	Operating unit (basic)	CE1U2358
●	●	AVS71.390	Wireless module	CE1U2354
●	●	AVS71.393	Wireless module BSB	CE1U2358
●	●	AVS74	UI400 room unit and operating unit When connecting the UI400 to the LMS14, various restrictions may apply depending on the software version.	CE1U2348

LMS14	LMS15	Type (ASN)	Description	Documentation no.
●	●	AVS75.390	Extension module	CE1U2353
●	●	AVS75.391	Extension module	CE1U2354
●	●	OCI345.06/101	LPB ClipIn	CC1U2355_043
●	●	OCI351.01/101	Modbus ClipIn	CE1U2355_043
●	●	OCI430	Interface module for PC-LMS1x connection	CC1N7635
●	●	OCI431	Programming station for LMS1x boiler management unit	CC1U7669
●	●	OCI700	Service tool	CC1E5655 *)
●	●	QAA55.110	Room unit basic	CE1U2353
●	●	QAA74	UI400 room unit and operating unit When connecting the UI400 to the LMS14, various restrictions may apply depending on the software version.	CE1U2348
●	●	QAA75.610	Room unit wire	CE1U2353
●	●	QAA75.611	Room unit wire with backlight	CE1U2353
●	●	QAA78.610	Room unit wireless	CE1U2353
●	●	QAC34/101	Outside sensor NTC 1 k	CC1Q1701
●	●	QAD36/101	Contact temperature sensor NTC 10 k	CC1Q1808
●	●	QAZ36.522/109	Immersion temperature sensor NTC 10 k	CC1Q1843
●	●	QAZ36.526/109	Immersion temperature sensor NTC 10 k	CC1Q1843
●		TQG42	Ignition module, combined with connection line for LMS14, suitable for VGUSmart gas valves	CC1N7630
	●	VGE5xS	Combination gas valves	CC1N7669
●		VGU7xS	Combination gas valves	CC1N7668
●		VGU8xS	Combination gas valves	CC1N7668

Standards and certificates

Applied directives:

- Low-voltage directive 2014/35/EC
- Gas Appliances Regulation (EU) (EU) 2016/426
- Electromagnetic compatibility EMC (immunity) *) 2014/30/EC

*) The compliance with EMC emission requirements must be checked after the Boiler Management Unit is installed in equipment

Compliance with the regulations of the applied directives is verified by the adherence to the following standards / regulations:

- Automatic burner control systems for burners and appliances burning gaseous or liquid fuels DIN EN 298
- Only LMS15: Gas/air ratio controls for gas burners and gas burning appliances Part 2: Electronic types EN 12067-2
- Safety and control devices for gas burners and gas burning appliances - General requirements DIN EN 13611
- Control functions in electronic systems for gas burners and gas burning appliances Methods for classification and assessment; DIN EN 14459
- Automatic electrical controls for household and similar use Part 2-5: Particular requirements for automatic electrical burner control systems DIN EN 60730-2-5

The relevant valid edition of the standards can be found in the declaration of conformity!

EAC Conformity mark (Eurasian Conformity mark)

ISO 9001:2015
ISO 14001:2015
OHSAS 18001:2007

China RoHS
Hazardous substances table:
http://www.siemens.com/download?A6V10883536

	AGA	DVGW
LMS14	●	●
LMS15	---	●

Disposal notes

The LMS1x contains electrical and electronic components and must not be disposed of together with domestic waste. Local and currently valid legislation must be complied with.

Life cycle

The LMS1x has a designed lifetime* of 250,000 burner startup cycles which, under normal operating conditions in heating mode, corresponds to approx. 10 years of service (starting from the date of manufacture on the type label).
This is based on the endurance tests specified in the standard EN 298. A summary of the conditions has been published by the European Control Manufacturers Association (www.afecor.org).

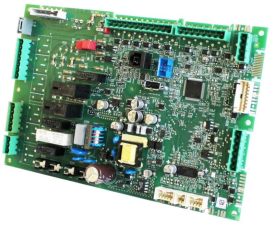
The designed lifetime is based on use of the LMS1x according to the manufacturer's Data Sheet and User Manual. After reaching the designed lifetime in terms of the number of burner startup cycles, or the respective time of usage, the LMS1x is to be replaced by authorized personnel.

* The designed lifetime is not the warranty time specified in the Terms of Delivery.

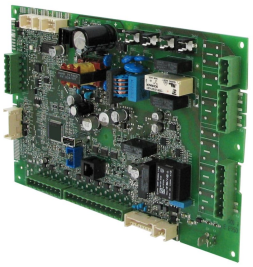
Type summary

Boiler management system

LMS14
- Printed circuit board design
- Without combustion optimization



LMS15
- Printed circuit board design
- With combustion optimization



☞ Note
Details on the accessories and required system components can found in the LMS1x product range overview Q7471.

Basic unit

General

Mains voltage (rated voltage)	
• LMS14.815B109 only	AC 120 V +10%/-15%
• All other LMS14 types	AC 230 V +10%/-15%
Mains frequency	
• LMS14.815B109 only	60 Hz to EN 298
• All other LMS14 types	50 Hz to EN 298
Power consumption	
• Operation	Max. 14 W
• Power pack	Max. 14 W
Rated surge voltage category	III (EN 60664-1:2008)
Degree of protection	IP00 IP40 according to EN 60529:1991 + A1:2000 + A2:2013 (to be ensured when fitted inside the boiler)
Safety class	LMS14 designed for use in equipment of protection class I according to EN 60730-1:2017
Degree of pollution	2
Software classes	As per EN 60730-2:2015 + A1:2019
• Controller part	Class A
• LMS14	Class C
Dimensions (L x W x D)	230 x 150 x 30 mm
Weight	Approx. 0.254 kg
Unit fuse	2 x T6.3H250 internal

Caution!
Risk of damage to the fuel valve switching contacts!
If the internal mains fuse (FB01/FB02) is blown due to overload or short-circuit at the fuel valve connections, the LMS14 must be replaced.

Mounting position	Optional

Caution!
When making 100% inspections as per EN 60335-1:2012 + A1:2019 + A2:2019 + A11:2014 + A13:2017 + A14:2019 Addendum A, only AC voltage may be applied.
If DC voltage tests are conducted, the LMS14 can get damaged.

Environmental conditions

Warning!
Condensation, formation of ice and ingress of water are not permitted! Failure to observe this information poses a risk of damaging the safety functions and a risk of electric shock.

Climatic conditions

Storage	
Temperature range	-20...60 °C
Humidity	<90% r.h. (noncondensing)
Transport	
Temperature range	-20...60 °C
Humidity	<90% r.h. (noncondensing)
Operation	
Temperature range	0...60 °C
Humidity	<85% r.h. (noncondensing)
Installation altitude	Max. 2,000 m above sea level

Electrical connections

Mains voltage connections

Total current all mains components connected to LMS14 and clipins	
• LMS14.815B109 only	5 A (at U_{Mains} = AC 120 V; Ta = 25 °C)
• All other LMS14 types	5 A (at U_{Mains} = AC 230 V; Ta = 25 °C)

Attention!
Fuse protection!
The following connecting terminals are protected by the unit fuse as per the chapter titled *Technical data - General data*.

The cross sections of the connection lines must be designed according to the unit fuses.

Mains extension	AUX1/AUX2
• Voltage	
LMS14.815B109 only	AC 120 V
All other LMS14 types	AC 230 V
• Current	Depending on the current consumption of the programmable mains voltage outputs QX1 to QX3, fuel valve, external ignition module and clip-ins used
QX1	
• Voltage	
LMS14.815B109 only	AC 120 V +10%/-15%
All other LMS14 types	AC 230 V +10%/-15%
• Current	5 mA…1 A, cosφ >0.8
• Cable length	≤120 m
QX2	
• Voltage	
LMS14.815B109 only	AC 120 V +10%/-15%
All other LMS14 types	AC 230 V +10%/-15%
• Current	5 mA…1 A, cosφ >0.8
• Cable length	≤120 m
QX3	
• Voltage	
LMS14.815B109 only	AC 120 V +10%/-15%
All other LMS14 types	AC 230 V +10%/-15%
• Current	5 mA…1 A, cosφ >0.8
• Cable length	≤120 m
Flame supervision/ionization probe	
• Switching thresholds	Min. 0.52 µA (required DC current)
• Current	
Nur LMS14.815B109	Typically 4 µA, max. 8.2 µA
All other LMS14 types	Typically 4 µA, max. 12.8 µA
• Response time in the event of loss of flame	≤1 s
• Physical contact	The ionization probe and its connections must be located such that adequate protection against direct or indirect contact with active parts is ensured in every unfavorable position allowed under correct usage conditions
• Cable length for flame detector	≤1 m

Please note!
Interchangeability of L/N conductors!
L-conductors and N-conductors are not interchangeable across all LMS14 variants!

Safety limit thermostat	
• Voltage	
LMS14.815B109 only	AC 120 V
All other LMS14 types	AC 230 V
• Current	5 mA...1 A, cosφ >0.6 Carrying power to the fuel valve and ignition
• Cable length	≤1 m
Fuel valve	
• AC output	
LMS14.815B109 only	AC 120 V +10%/-15% Valve must still open at AC 91 V
All other LMS14 types	AC 230 V +10%/-15% Valve must still open at AC 175 V
• Current	5 mA…0.5 A, cosφ >0.6

Note!
- A fuel valve with rectifier may be connected to the fuel valve output only if approved by Siemens!
- In this case, additional protective measures inside the LMS14 must be taken (optional components)

RAC output (optional components)	
LMS14.815B109 only	RAC 120 V +10%/-15% 100 Hz Valve must still open at RAC 91 V
All other LMS14 types	RAC 230 V +10%/-15% 100 Hz Valve must still open at RAC 175 V
• Output	Max. 20 W, cosφ >0.9
General data on connection of fuel valve	
• Cable length	Max. 1 m for AC/RAC Max. 3 m if cable is routed separately (to avoid capacitive coupling)
• Capacitive extra circuit or surge voltage limiting protective elements	Not permitted
External ignition module	
• Voltage	
LMS14.815B109 only	AC 120 V +10%/-15%
All other LMS14 types	AC 230 V +10%/-15%
• Current	
LMS14.815B109 only	5 mA…0.5 A, cosφ >0.6 Full ignition required at AC 91 V
All other LMS14 types	5 mA…0.5 A, cosφ >0.6 Full ignition required at AC 175 V
• Cable length	Max. 1 m Max. 3 m if cable is routed separately (to avoid capacitive coupling)
• Starting current	Max 1 A
In terms of switching performance, every external ignition module used must be approved by Siemens!	
Fan control	For fans with mains-powered DC motor. Refer to separate Siemens specification Spezifikation_LMU5x_TrafoGebläse_de_VX.Y.doc (mandatory)

Extra-low voltage connections (PELV)
Supply voltage outputs, general data

Warning!
For functional reasons, the LMS14 extra-low voltage circuits are connected to the protective earth via X17. Therefore, they are classed as PELV circuits.

+5 V	
• Output voltage LMS14	DC 5 V ±5%
• Short-circuit current (current limitation)	Imax. 1 A
+12 V	
• Output voltage LMS14	DC 12 V ±5%
• Short-circuit current (current limitation)	Imax. 0.8 A
+15 V	
• Output voltage LMS14	DC 15 V ±5%
• Short-circuit current (current limitation)	Imax. 1.5 A
+24 V	
• Output voltage LMS14	DC 24 V ±5%
• Short-circuit current (current limitation)	Imax. 1.1 A

Inputs B2

Boiler sensor B2	NTC 10 k
• Continuous temperature	Max. 100 °C
• Short-time temperature	Max. 125 °C
• Sensor tolerance	±2 K
• Cable length	≤3 m
• Aging	±3%
• τ	≤20 s
• Other requirements	Conformity to DIN EN 60730-2-9 and DIN EN 14459:2007 Annex K

Inputs B7 / BX4

Return sensor (B7)/multifunctional sensor BX4 (X4)	
• Resistance value	
- Return sensor (B7)	NTC 10 k Refer to boiler sensor B2
- Multifunctional sensor (BX4)	NTC 10 k (QAZ36, QAD36) NTC 20 k (flue gas sensor) Pt1000 optional for collector sensor and flue gas sensor)
• Cable length	≤3 m

Note!
Sensor input BX4 has a fixed assignment to sensor B7. The reading of sensor B7 is safety relevant.

Technical Data LMS14 (cont'd)

Inputs B3 / B38	DHW sensor B3/B38 (X5)	
	• Resistance value	NTC 10 k
	• Cable length	≤10 m (when connecting a thermostat to the input for the DHW sensor, high-quality thermostat contact material is required (e.g. gold-plated contacts), since signal voltage at this input is DC 5 V)
Inputs BX1 / BX2 / BX3	Sensor inputs BX1…BX3 (X5)	
	• Resistance value	NTC 10 k (QAZ36, QAD36) NTC 20 k (flue gas sensor) Pt1000 (optional for collector sensor and flue gas sensor)
	• Cable length	≤120 m **Observe cross-sectional area of wires!** (Refer to chapter *Cross-sectional area sensors*)
Inputs B9	Outside temperature sensor B9 (X5)	
	• Resistance value	NTC 1 k Refer to specification QAC34
	• Cable length	≤120 m **Observe cross-sectional area of wires!** (Refer to chapter *Cross-sectional area sensors*)
Inputs H1	Multifunctional input/pressure sensor (X6)	
	• Output voltage LMS14	DC 15 V ±5% DC 5 V ±5%
	• Current	Imax. 10 mA each input
	• Input voltage LMS14	DC 10 V
	• Analog input	Safety extra low-voltage
	- Operating range	DC 0…10 V
	- Input resistance	>100 kΩ
	• Digital input	
	- Safety extra low-voltage for potential-free low-voltage contacts	
	Voltage with contact open	DC 15 V
	Voltage with contact closed	DC 1.5 mA
	• Cable length	≤10 m
Inputs H3	Multifunctional input/pressure sensor (X4)	
	• Output voltage LMS14	DC 15 V ±5% DC 5 V ±5%
	• Current	Imax. 10 mA
	• Input voltage LMS14	DC 10 V
	• Analog input	Safety extra low-voltage
	- Operating range	DC 0…10 V
	- Input resistance	>100 kΩ
	• Digital input	
	• Safety extra low-voltage for potential-free low-voltage contacts	
	Voltage with open contact	DC 15 V
	Voltage with closed contact	DC 1.5 mA
	• Cable length	≤10 m

Technical Data LMS14 (cont'd)

Inputs H4	Multifunctional input/pressure sensor (X6)	
	• Output voltage LMS14	DC 15 V ±5% DC 5 V ±5%
	• Current	Imax. 10 mA
	• Input frequency	0/1…1 kHz
	• Digital input	
	• Safety extra low-voltage for potential-free low-voltage contacts	
	Voltage with contact open	DC 5 V
	Voltage with contact closed	DC 2 mA
	Frequency input	
	• Duty cycle	10…90%
	• t_{on} ; t_{off}	>300 µs
	• Resolution	0.1 Hz at 1…1 kHz
	• Rise/drop-out time	≤20 µs
	Cable length	≤10 m
Inputs H5	Multifunctional input/room thermostat (X6)	
	• Voltage	DC 5 V
	• Digital input	
	• Safety extra low-voltage for potentialfree low-voltage contacts	
	Voltage with contact open	DC 5 V
	Voltage with contact closed	DC 2 mA
	• Cable length	≤120 m **Observe cross-sectional area of wires!** (Refer to chapter *Cross-sectional area sensors*)
Inputs H6	Multifunctional input/gas pressure switch (X5)	
	• Digital input	
	• Safety extra low-voltage for potential-free low-voltage contacts	
	Voltage with contact open	DC 5 V
	Voltage with contact closed	DC 2 mA
	• Cable length	≤120 m **Observe cross-sectional area of wires!** (Refer to chapter *Cross-sectional area sensors*)
Inputs H7	Multifunctional input/air pressure switch (X4)	
	• Digital input	
	• Safety extra low-voltage for potential-free low-voltage contacts	
	Voltage with contact open	DC 5 V
	Current with contact closed	DC 2 mA
	• Cable length	≤10 m
Input reset (EK)	Reset button (X4/X30)	
	• Digital input	Active upon short-circuit after safety extra-low voltage GND
	• Safety extra low voltage for potential-free low-voltage contacts	
	Voltage with contact open	DC 5 V
	Current with contact closed	DC 0.5 mA
	• Line length	≤1 m

PWM fan/Hall connection facility

Warning!
Mandatory requirement: Observe separate Siemens specification Spezifikation_LMU5x_TrafoGebläse_de_VX.Y.doc

PWM fan/Hall connection facility (X8)	
• PWM output	
- Safety extra low voltage	
Voltage with output open	DC 24 V
Current	Max. DC 15 mA
- Line length	≤3 m
- Basic control frequency (adjustable)	800…4800 Hz (default 4096 Hz)
• Hall input, fan speed	
Voltage with output open	<DC 1 V
Input resistance	37 kOhm
Frequency range	0…900 Hz
Duty cycle	30…70 %

PWM pump connection P1

PWM pump connection (X15)	
• PWM output	As per interface definition of Grundfos for UPER circulating pumps
- Safety extra low voltage	
Output voltage at Iout = 0	DC 15 V ±5%, Ri = 1 k
Output current (short-circuit-proof)	Max. 15 mA
PWM frequency	1.536 kHz
- Line length	≤10 m

PWM output / 10 V output UX2 / UX3

PWM output / 10 V output UX2 / UX3	
• PWM output	As per interface definition of Grundfos for UPER circulating pumps
- Extra-low voltage	
Output voltage at *Iout* = 0	DC 15 V ±5%, Ri = 1 k
Output current (short-circuit-proof)	Max. 15 mA
PWM frequency	1.536 kHz
- Cable length	≤10 m
• 10 V output	
- Extra-low voltage	
Output voltage at *Iout* = 0	DC 0..10.5 DC
Output current (short-circuit-proof)	Max. 15 mA
Calibration capability	Characteristic curve coefficient
Current load	2.7 mA peak
Ripple	<50 mV
Settling time 99%	<500 ms
Zero point accuracy	±100 mV
Error for remaining range	<0.1 V typical <0.5 V max. Can be calibrated by means of parameters
- Cable length	≤10 m

Control of diverting valve

Control of stepper motor (bipolar) (X16)

• Outputs	For 4 VA bipolar stepper motors
• Standard version LMS14	180 mA winding current (total)
• Resistance per winding	50 R < Rmotor < 110 R
- Safety extra low voltage	
Voltage with output open	DC 24 V
Current	Max. DC 200 mA at 10% on time
- Line length	≤3 m
Step frequency	200 Hz

BSB users

BSB terminals (X7/X30/X50)

• Operator unit	AVS37
• Room unit	QAA55/QAA75
- Connection	2- or 3-wire
- Cable length	Max. 200 m at 1.5 mm² cross-sectional area of cable
- Cable resistance	Max. 3 x 14 Ω
- Cross-sectional area of cable	Min. 0.5 mm²
• Users	Max. 5 (1 operator unit, 3 room units, 1 service unit)

Limitation of the BSB users

The LMS14 may only be subjected to a maximum load of 40 mA on the BSB ports (CL+/CL-) and a maximum load of 400 mA on the 12 V supply.

Danger!
These maximum currents must not be exceeded by the total number of bus users combined. To avoid uncontrollable malfunctions on the LMS14, each system must be checked accordingly.

Devices	Current rating on BSB connections (CL+/CL-) in mA *	Current rating on 12 V-supply in mA *	Remark
Operator units:			
AVS37.294 AVS77.314	0.2	22	
AVS37.294 AVS77.314	0.2	14	
AVS37.290 AVS37.390	0.2	16	
AVS37.291 AVS37.391	0.2	9	
AVS74.261 AVS74.661 AVS74.761	0.2	44	Illumination active
AVS74.261 AVS74.661 AVS74.761	0.2	24	Illumination not active
AVS77.411	0.2	22	
AVS77.410	0	10	
Room units:			
QAA75.611 QAA75.910	0.2	22	
QAA75.611 QAA75.910	16	0	
QAA75.611 QAA75.910	0.2	14	
QAA55.110	7	0	
QAA74.611 QAA74.614	0.2	44	3-wire connection; illumination active
QAA74.611 QAA74.614	24	0	2-wire connection; without illumination
Option: QAA74.611 QAA74.614	0.2	24	3-wire connection; illumination not activated (switched off via parameters)
QAA78.6	0	0	
Service devices:			
QAA75.611	0.2	22	
QAA74.611 QAA74.614	0.2	44	

Devices	Current rating on BSB connections (CL+/CL-) in mA *	Current rating on 12 V-supply in mA *	Remark
Auxiliary modules:			
AVS75.390	0.2	0	
AVS75.370	0.2	0	
AGU2.550	0.2	80	
Others:			
OZW672	0.2	0	
OCI700 OCI611	0.2	0	
AVS71.410 (RF gateway)	0.2	22	
AVS71.393	0.2	10	

* The values shown refer to the status as of July 2015 and may have to be checked.

Outputs for LED flame and LED fault (X30)

Outputs for connecting status LEDs (see drawing in the User Manual U7471, chapter *Pin assignment for terminal X30*)

- Voltage DC 12 V
- Current DC 2...10 mA (limit with Rv)
- Cable length <3 m

Cross-sectional area sensors

Cross-sectional area	Maximum length
0.25 mm²	20 m
0.5 mm²	40 m
1 mm²	80 m
1.5 mm²	120 m

Technical Data AGU2.56xx109

General device data

Degree of protection	IP20
Safety class	Safety class III
Pollution degree	2
Dimensions	60 x 20 x 12 mm (L x W x H)
Weight	Approx. 16 g
Mounting position	Optional
Lifetime	Max. 300 h
Electrical data	Power supply DC 5 V ±5%

Warning!
Only use the parameter stick during the parameter setting process on the LMS14. It is not permitted to plug in the parameter stick during operation or to use it in permanent operation!

Environmental conditions

Warning!
Condensation, formation of ice and ingress of water are not permitted. Failure to observe this information poses a risk of damaging the safety functions and a risk of electric shock.

Climatic conditions

Storage	
Temperature range	-20...60 °C
Humidity	<90% r.h. (noncondensing)
Transport	
Temperature range	-20...60 °C
Humidity	<90% r.h. (noncondensing)
Operation	
Temperature range	0...60 °C
Humidity	<85% r.h. (noncondensing)
Installation altitude	Max. 2,000 m above sea level

Warning!
The AGU2.56 may only be connected to the LMS14 or the OCI432 on the designated plug-in space!

Note!
The data listed are only those deviating from the Technical Data of the LMS14

Basic unit

Mains voltage (rated voltage)	AC 230 V
Mains frequency	50 Hz to EN 298
Power consumption	
• Operation	Max. 25 W (with fuel valve)
• Power pack	Max 25 W
Rated surge voltage category	III (DIN EN 60664)
Degree of protection	IP00 IP40 (must be insured after installation in the heating appliance)
Safety class	LMS15 designed for use in equipment of protection class I according to EN 60730-1:2017
Degree of pollution	2
Software classes	To EN 60730-2:2015 + A1:2019
• Controller part	Class A
• Burner control	Class C
Dimensions (L x W x D)	230 x 150 x 32 mm
Weight	Ca. 0.279 kg
Unit fuse	2 x T6.3H250 internal
Mounting position	Optional

Warning!
When making 100% inspections as per DIN EN 60335-1, Addendum A, only AC voltage may be applied. If DC voltage tests are conducted, the LMS15 can get damaged.

Environmental conditions

Warning!
Condensation, formation of ice and ingress of water are not permitted! Failure to observe this information poses a risk of damaging the safety functions and a risk of electric shock.

Climatic conditions

Storage	
Temperature range	-20...60 °C
Humidity	<90% r.h. (noncondensing)
Transport	
Temperature range	-20...60 °C
Humidity	<90% r.h. (noncondensing)
Operation	
Temperature range	0...60 °C
Humidity	<85% r.h. (noncondensing)
Installation altitude	Max. 2,000 m above sea level

Electrical connections

Mains voltage connections

Total current for all network components connected to the LMS15 and clip-ins	5 A (at UMains = AC 230 V; Ta = 25 °C)

Attention!
Fuse protection!
The mains voltage connection terminals are protected by the unit fuse as per the chapter *Technical data - General data*.

Flame supervision/ionization probe	
• Switching thresholds	Min. 1.7 µA (required DC current)
• Current	Typically 25...75 µA (R_{Flame} = 2.5...0.5 MΩ) Max. 119 µA (R_{Flame} = 100 kΩ)
• Response time in the event of loss of flame	≤1 s
• Touch protection	The detector electrode and their connections must be installed in such a way that sufficient protection against coming into direct or indirect contact with active components is ensured in any unfavorable situations that may arise during correct use.
• Cable length for flame detector	≤1 m

Note!
Conductors L- and N are interchangeable!

Extra-low voltage connections (PELV)

Warning!
For functional reasons, the LMS15 extra-low voltage circuits are connected to the protective earth via X17. Therefore, they are classed as PELV circuits.

Safety limit thermostat	
• Voltage	DC 24 V
• Current	1 mA...1 A Carrying power to the fuel valve and ignition
Fuel valve	
• DC output	DC 24 V +10%/-15%
• Current	≤DC 0.25 A
General data for fuel valve connection	
• Cable length	Max. 1 m for DC
• Leak current at 1.06 x rated voltage	Max. 0.5 mA
• Capacitive extra circuit or surge voltage limiting protective elements	Not permitted
External ignition module	
• Voltage	DC 24 V +10%/-15%
• Current	5…0.2 A
• Cable length	Max. 3 m

In terms of switching performance, every external ignition module used must be approved by Siemens!

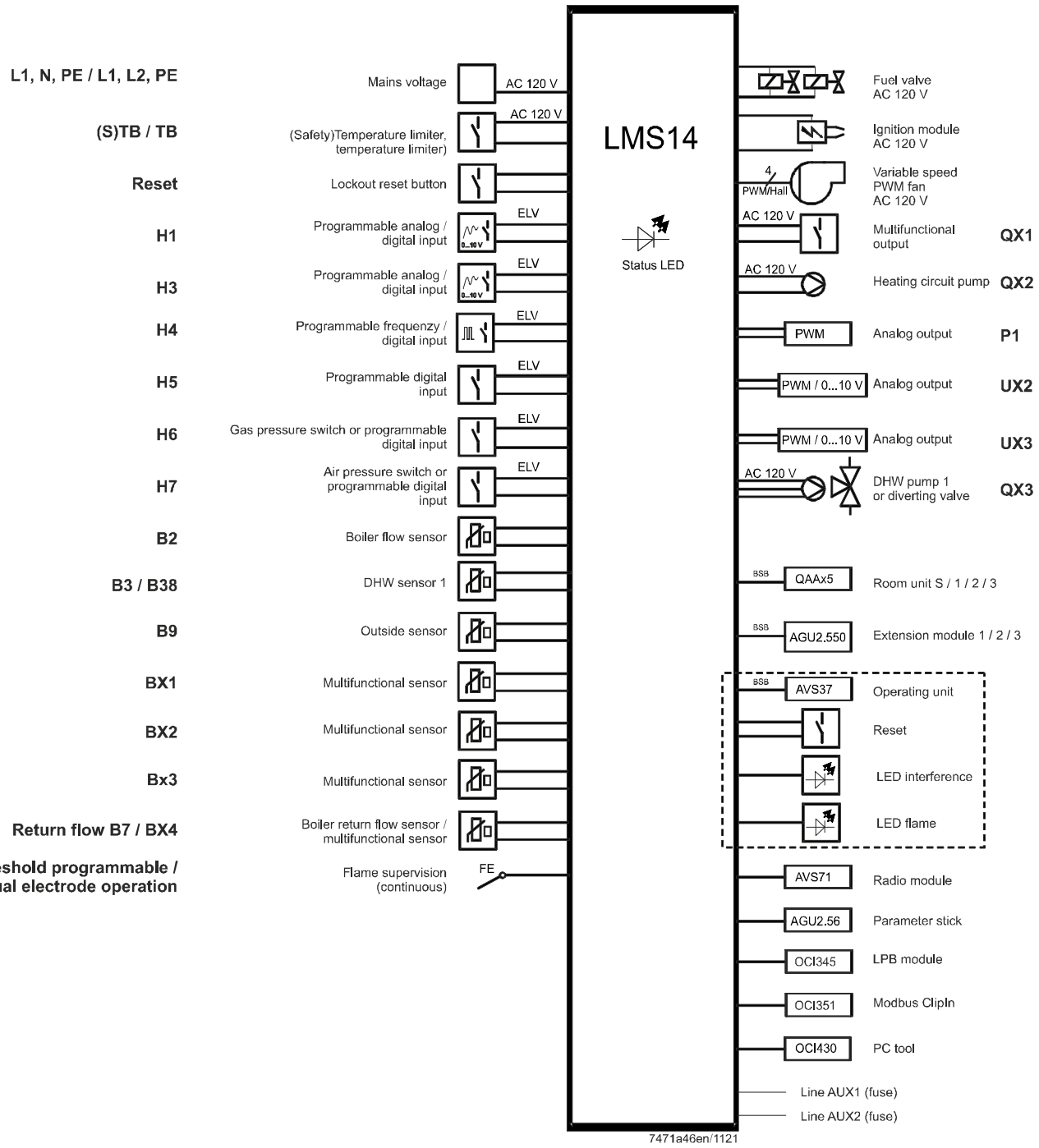
OpenTherm	OpenTherm connection	According to OpenTherm specification V4.0
	• Connection	2-wire
	• Cable length	Max. 50 m with a 1 mm² wire cross section
	• Cable resistance	Max. 2 x 5 Ω
	• Wire cross section	Min. 0.5 mm²
	• User	Max. 1 per connection
	• Open-circuit voltage	Max. 24 V DC

Functions

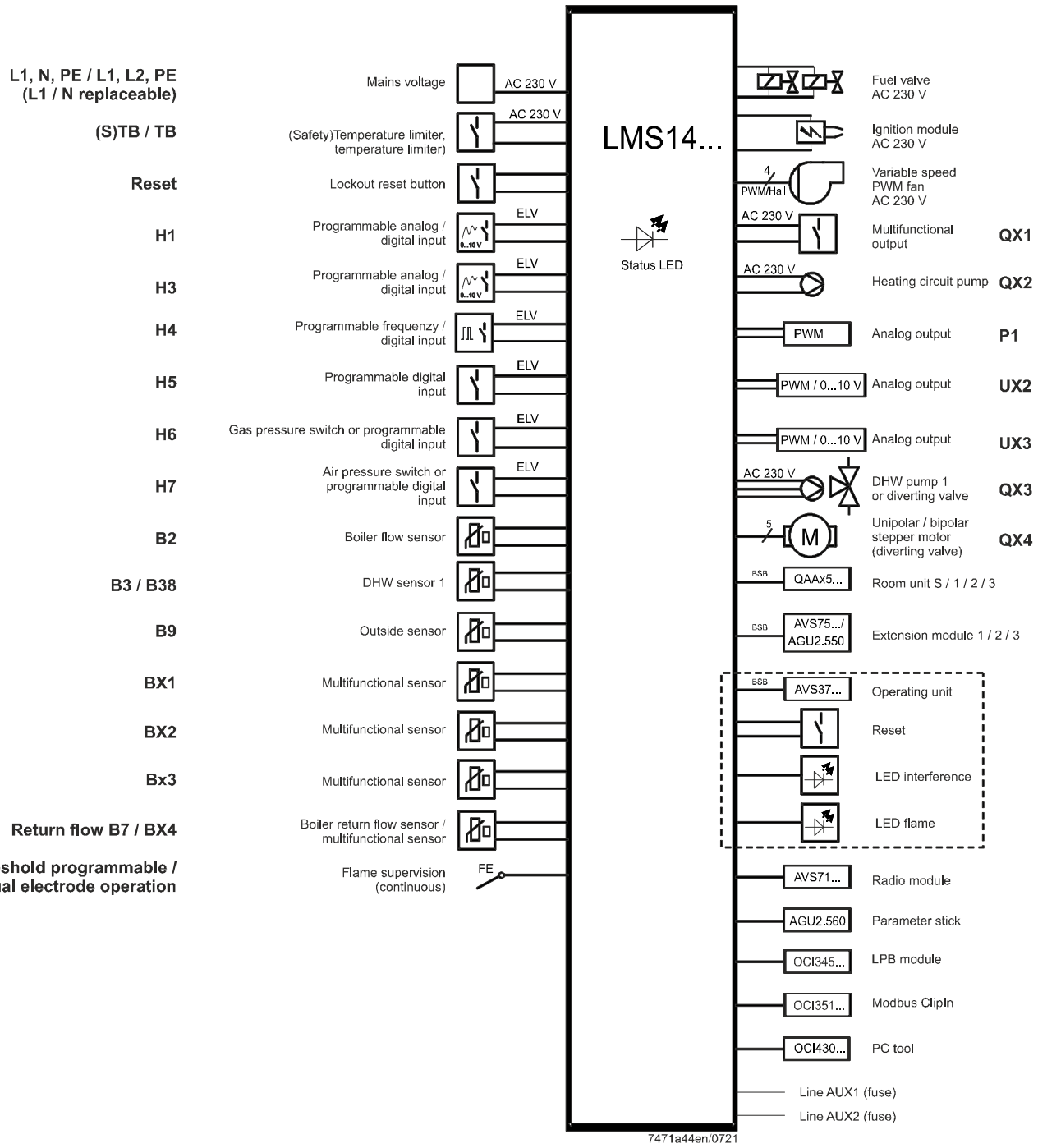
Note
The scope of functions depends on the LMS1x and its respective parameterization (refer to LMS14 User Manual U7471 or LMS15 User Manual U7472).

Basic diagram LMS14

The maximum functionality of the LMS14 system (120 V AC) is shown. The specific scope of functions is to be determined according to the respective design / configuration!

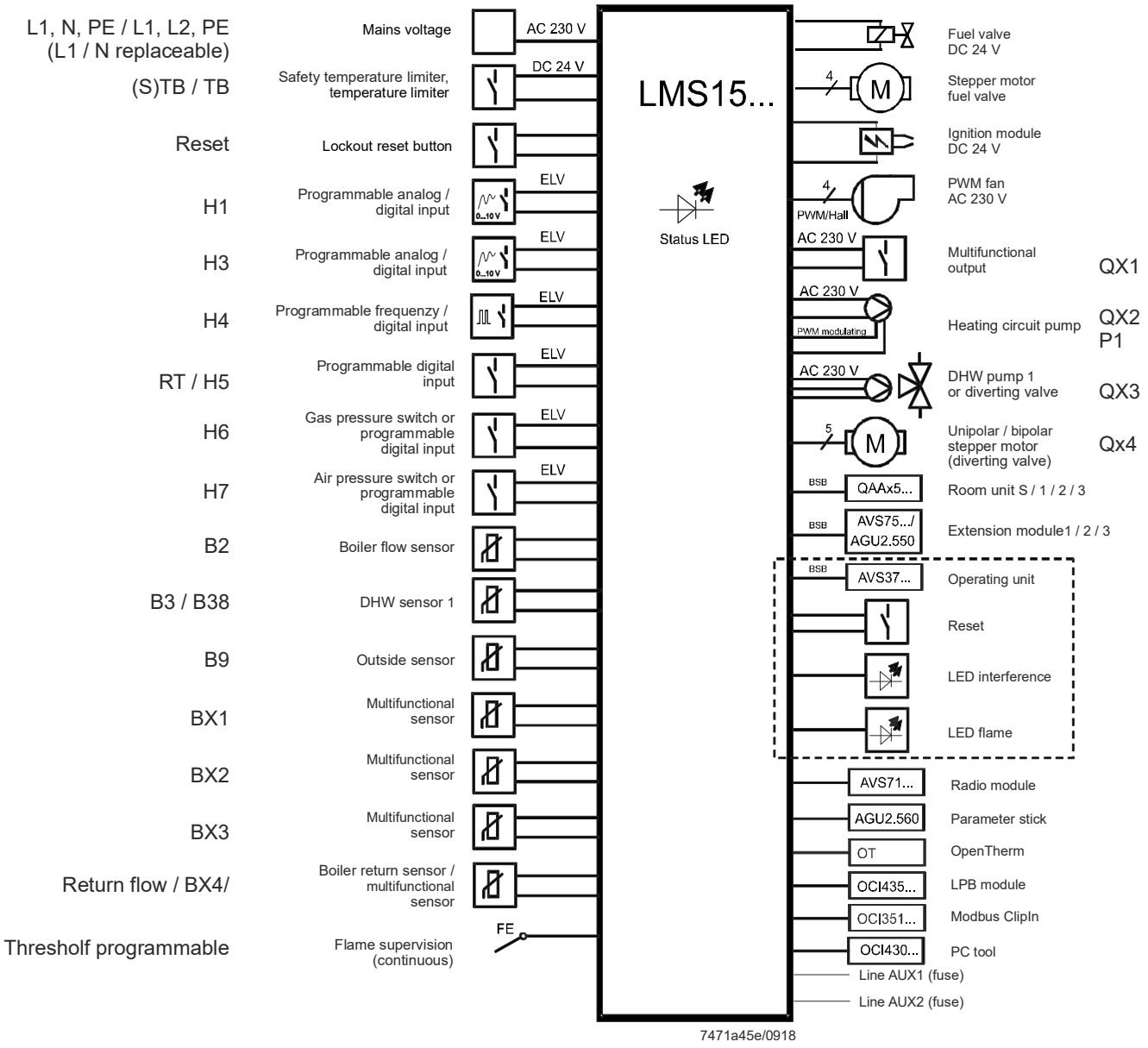


The maximum functionality of the LMS14 system (230 V AC) is shown. The specific scope of functions is to be determined according to the respective design / configuration!



Basic diagram LMS15

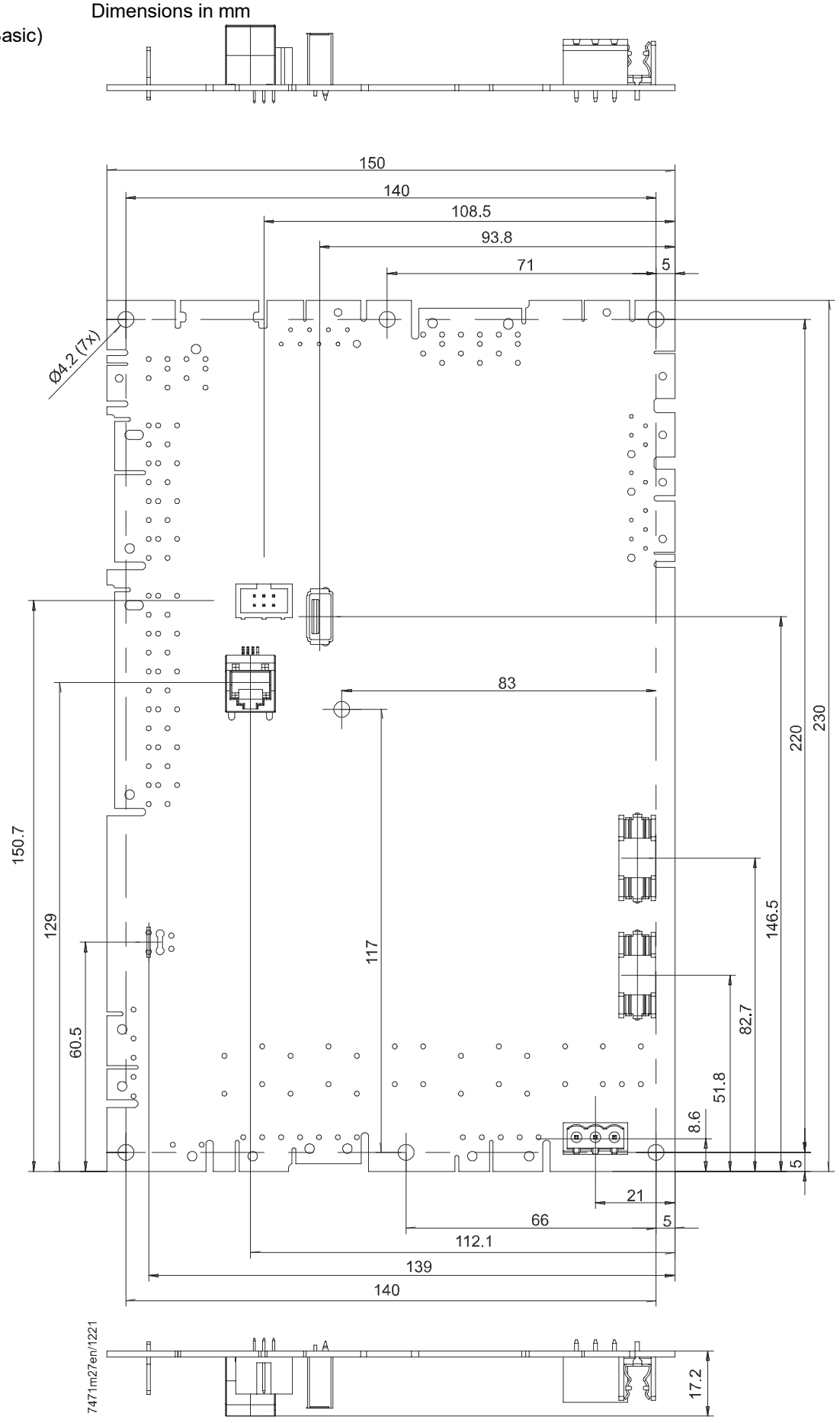
The maximum functionality of the LMS15 system is shown. The specific scope of functions is to be determined according to the respective design / configuration!



Dimensions

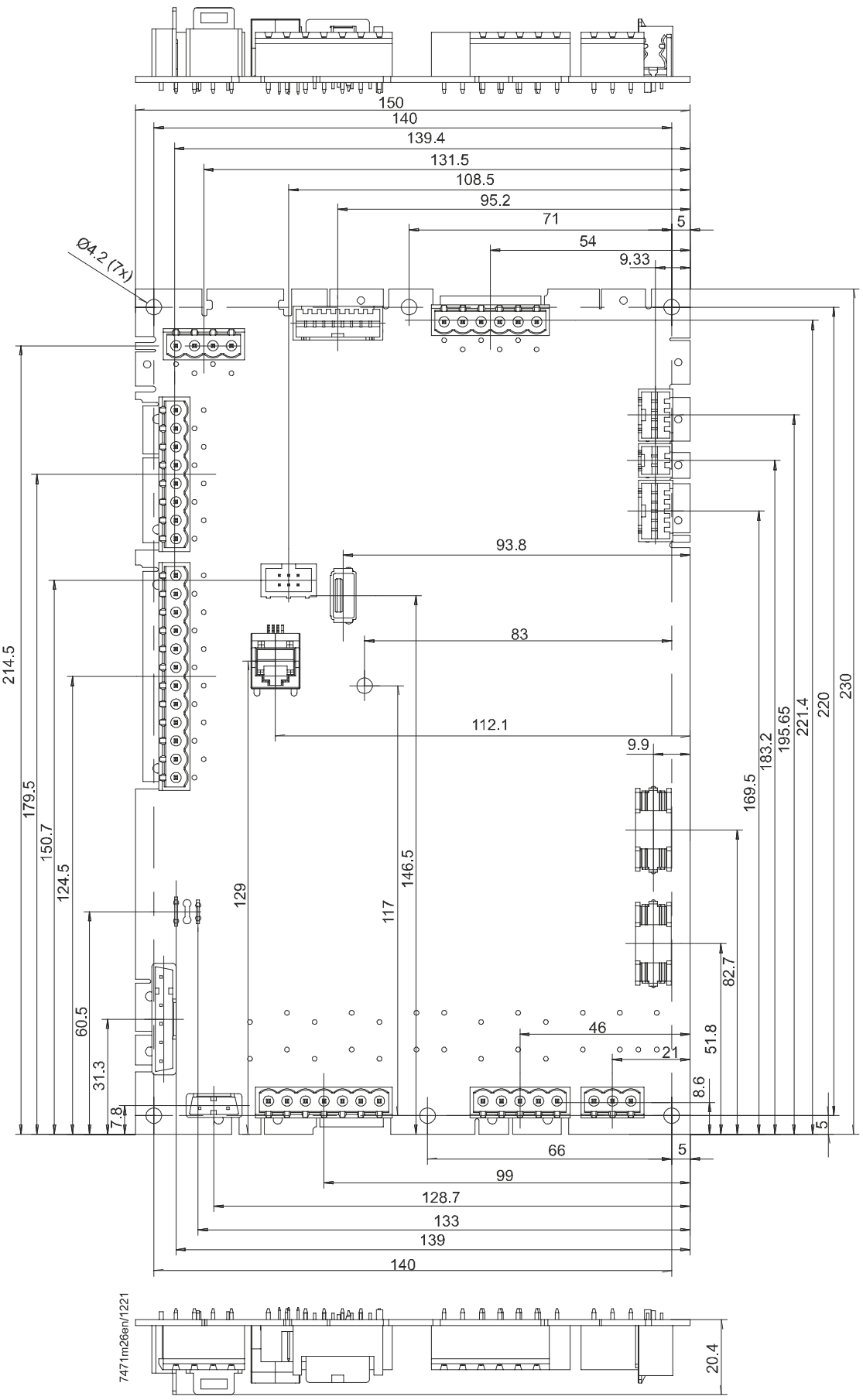
LMS14 complete (Basic)

Dimensions in mm



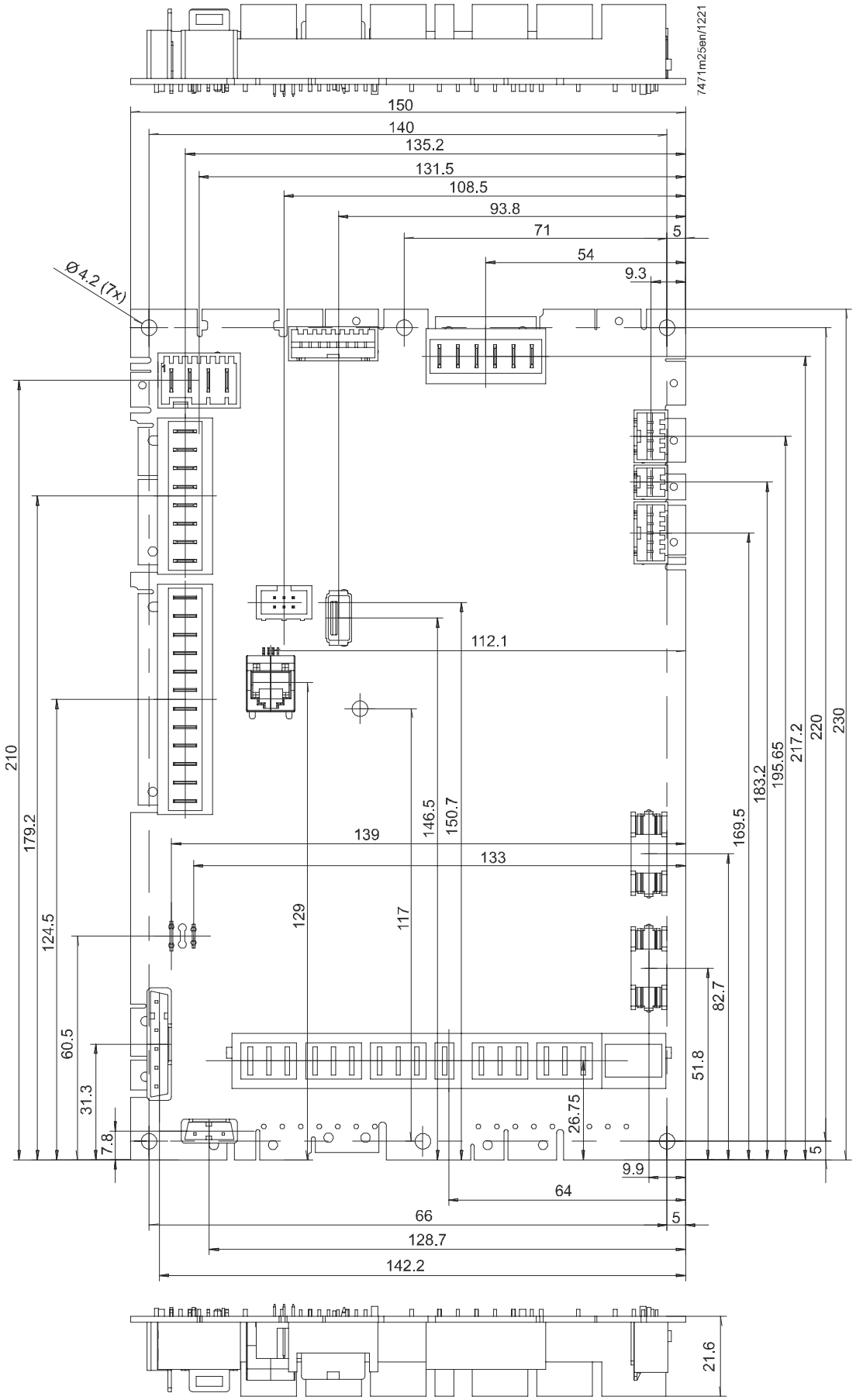
Dimensions mm

LMS14 complete
(Medium)



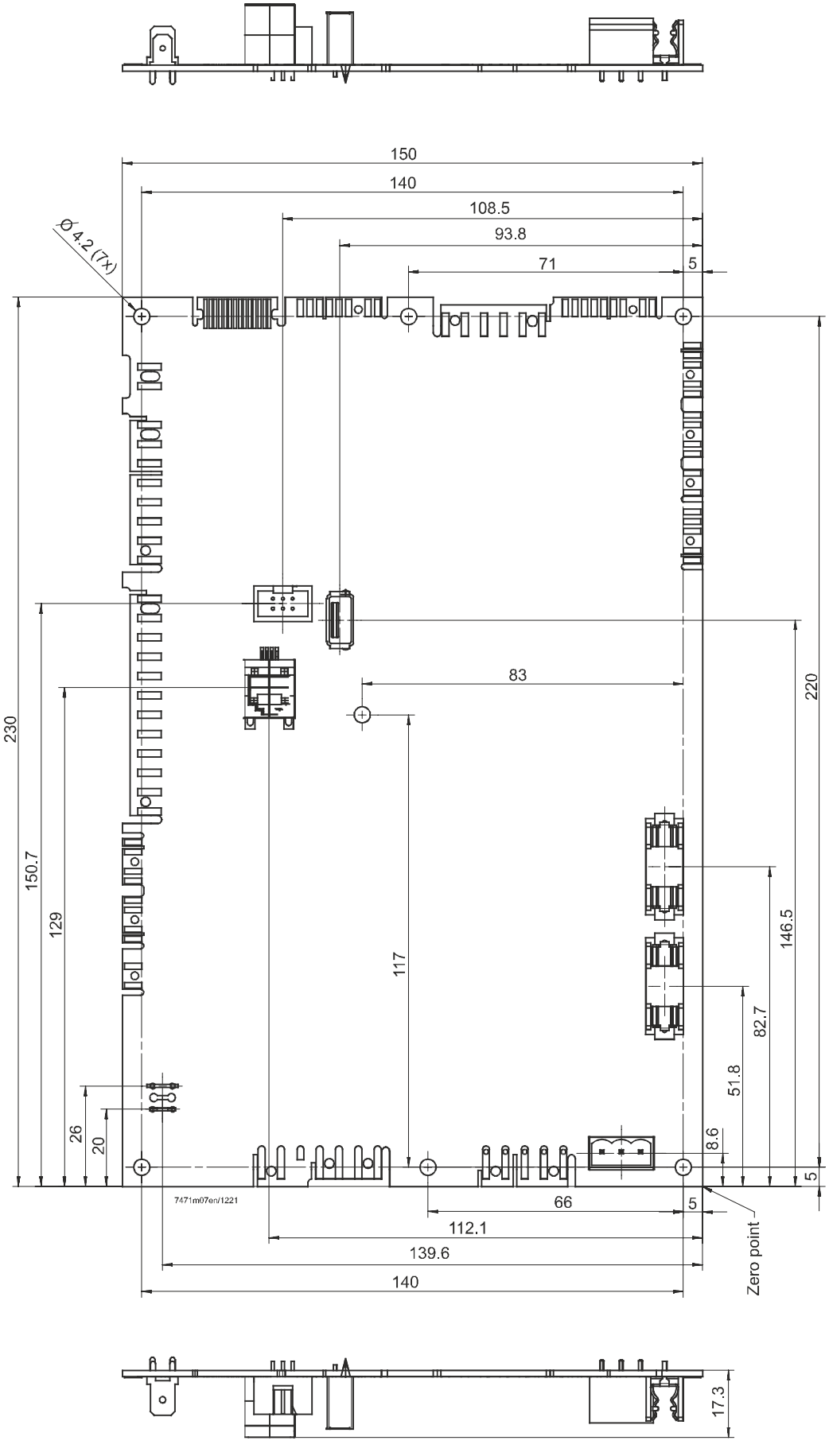
Dimensions in mm

LMS14 complete
(Deluxe)



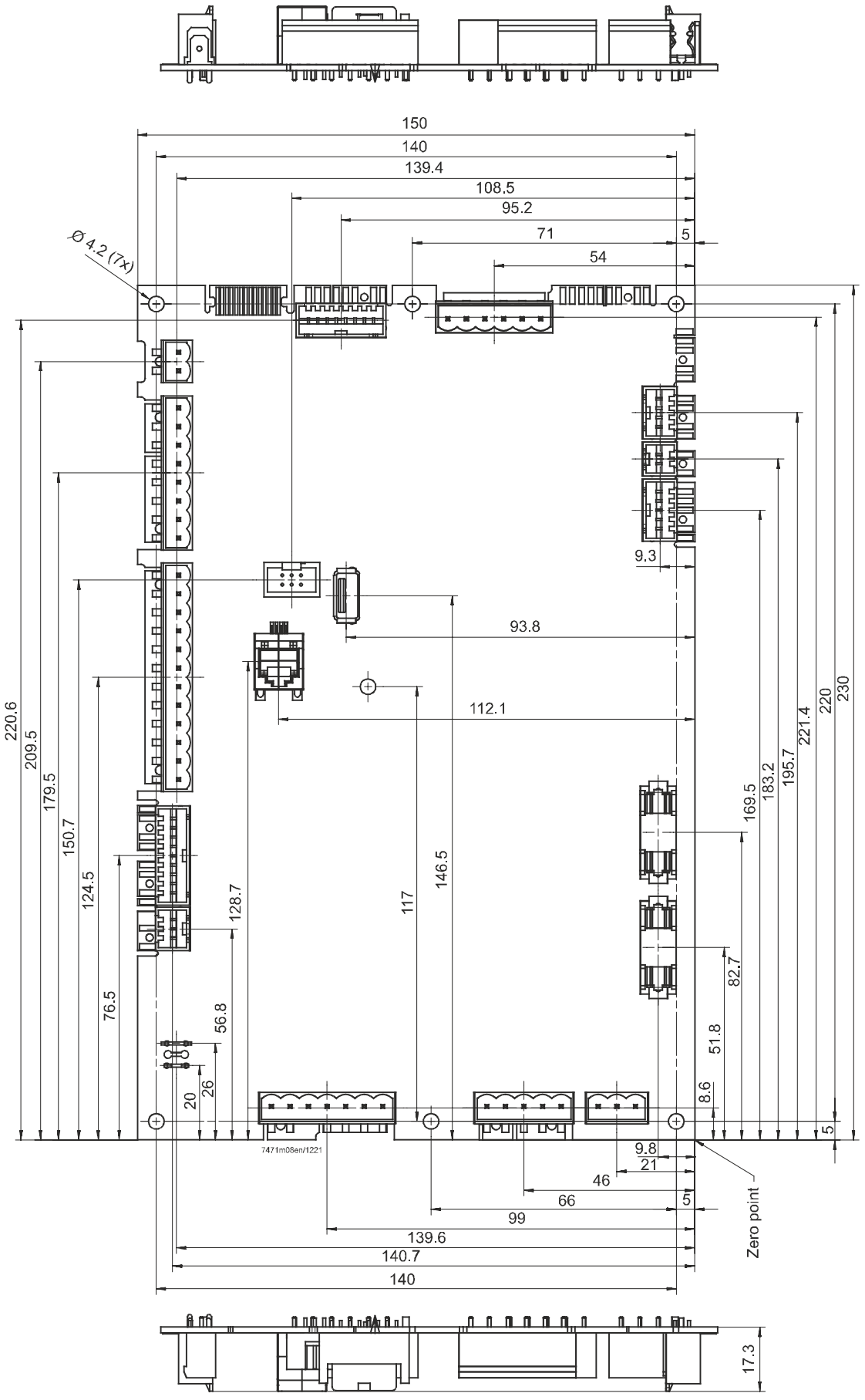
Dimensions in mm

LMS15 complete (Basic)



Dimensions in mm

LMS15 complete
(Medium)



Dimensions in mm

LMS15 complete
(Deluxe)