






KÖHLER ELEKTRİK SAYAÇLARI SAN. VE TİCARET A.Ş.
ELECTRONIC ELCTRIC ENERGY METER TECHNICAL DATA

No	Subject		
1.	Type	AEL.MF.03	AEL.MF.04
2.	Name	1 phase, 2 wire, 4 tariff, demand measuring, optic port communication electronic meter	1 phase, 2 wire, 4 tariff, demand measuring, optic port communication, RS485 for communicate electronic meter
3.	Casing Type	Mountable to the Wall	Mountable to the Wall
4.	Precision Class	Class 1	Class 1
5.	Relevant Standard	TS EN 62052-11 TS EN 62053-21	TS EN 62052-11 TS EN 62053-21
6.	Nominal Current	10(80) A	10(80) A
7.	Nominal Voltage	220 V	220 V
8.	Real Time Clock	Internal quartz crystal (IEC-EN 61038)	Internal quartz crystal (IEC-EN 61038)
9.	Clock Back Up Battery	Shelf life: 4 Years Continuous Usage Life: 10 Years	Shelf life: 4 Years Continuous Usage Life: 10 Years
10.	Power Factor	from 0 to ± 1	from 0 to ± 1
11.	Initial Current	0,004 Ib	0,004 Ib
12.	Nominal Frequency	50 Hz $\pm 5\%$	50 Hz $\pm 5\%$
13.	Digital Display	<ul style="list-style-type: none"> • For Energy Amount 8 Digits • For Demand Value 6 digits 	<ul style="list-style-type: none"> • For Energy Amount 8 Digits • For Demand Value 6 digits
14.	Loses • In the Current Circuit (VA) • In The Voltage Circuit (VA)	<ul style="list-style-type: none"> • 4 VA • 2W and 10 VA 	<ul style="list-style-type: none"> • 4 VA • 2W and 10 VA
15.	Excessive Load on Current Circuit	30 I _{max}	30 I _{max}
16.	Effect of the Short Term Current to Precision	1,5%	1,5%
17.	Operation Temperature Range	-40 °C, +85 °C	-40 °C, +85 °C
18.	Protection Class	IP54	IP54
19.	Communication; Infrared Optic Interface Communication Rate	300-4800 Baud	300-4800 Baud
20.	Pulse Outputs	-	-
21.	Number of Pulse Displaying LED for Power Measurement	1 LED	1 LED
22.	Rate and Counter Invariables of Pulse Displaying LED	1600 imp/kWh	1600 imp/kWh
23.	Isolation Isolation Resistance Impulse Voltage High Frequency Fields Strength	4 kV AC / 50 Hz / 1 minute 8 kV / 1,2-50 μ 2 Ω (measuring circuit, auxiliary voltage) 30 V/m (on Load)	4 kV AC / 50 Hz / 1 minute 8 kV / 1,2-50 μ 2 Ω (measuring circuit, auxiliary voltage) 30 V/m (on Load)
24.	Data Interfaces	Optic Interface: 1	RS 485 Interface: 1 Optical Interface: 1
25.	Data Collection Capacity of Counter Memory	1 Year	1 Year
26.	Load Profile Register Number	-	-
27.	Password / Locking or Protection Function	Upper Lid, Connector Lid, 2 Passwords	Upper Lid, Connector Lid, 2 Passwords
28.	Demand Integration Period	15 Minutes Fixed	15 Minutes Fixed



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No	Subject		
1.	Type	AEL.MF.05	
2.	Name	1 phase, 2 wire, 4 tariff, demand measuring, optic port communication, prepayment card electronic meter	
3.	Casing Type	Mountable to the Wall	
4.	Precision Class	Class 1	
5.	Relevant Standard	TS EN 62052-11 TS EN 62053-21	
6.	Nominal Current	10(80) A	
7.	Nominal Voltage	220 V	
8.	Real Time Clock	Internal quartz crystal (IEC-EN 61038)	
9.	Clock Back Up Battery	Shelf life: 4 Years Continuous Usage Life: 10 Years	
10.	Power Factor	from 0 to ± 1	
11.	Initial Current	0,004 Ib	
12.	Nominal Frequency	50 Hz $\pm 5\%$	
13.	Digital Display	<ul style="list-style-type: none"> • For Energy Amount 8 Digits • For Demand Value 6 Digits 	
14.	Loses • In the Current Circuit (VA) • In The Voltage Circuit (VA)	<ul style="list-style-type: none"> • ≤ 4 VA • ≤ 2W and ≤ 10 VA 	
15.	Excessive Load on Current Circuit	30 I _{max}	
16.	Effect of the Short Term Current to Precision	$\leq 1,5\%$	
17.	Operation Temperature Range	-40 °C, +85 °C	
18.	Protection Class	IP54	
19.	Communication; Infrared Optic Interface Communication Rate	300-4800 Baud	
20.	Pulse Outputs	-	
21.	Number of Pulse Displaying LED for Power Measurement	1 LED	
22.	Rate and Counter Invariables of Pulse Displaying LED	1600 imp/kWh	
23.	Isolation Isolation Resistance Impulse Voltage High Frequency Fields Strength	4 kV AC / 50 Hz / 1 minute 8 kV / 1,2-50 μ 2 Ω (measuring circuit, auxiliary voltage) 30 V/m (on Load)	
24.	Data Interfaces	Optic Interface: 1	
25.	Data Collection Capacity of Counter Memory	1 Year	
26.	Load Profile Register Number	-	
27.	Password / Locking or Protection Function	Upper Lid, Connector Lid, 2 Passwords	
28.	Demand Integration Period	15 Minutes Fixed	



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No	Subject		
1.	Type	AEL.TF.04	AEL.TF.05
2.	Name	3 phase, 4 wire, 4 tariff, demand measuring, optic port communication, direct connection, active electronic meter	3 phase, 4 wire, 4 tariff, demand measuring, optic port communication, current transformer connection, active electronic meter
3.	Casing Type	Mountable to the Wall	Mountable to the Wall
4.	Precision Class	Class 1	Class 1
5.	Relevant Standard	TS EN 62052-11 TS EN 62053-21	TS EN 62052-11 TS EN 62053-21
6.	Nominal Current	3x10(100) A	X.../5(10) A
7.	Nominal Voltage	3x220/380 V	3x220/380 V
8.	Real Time Clock	Internal quartz crystal (IEC-EN 61038)	Internal quartz crystal (IEC-EN 61038)
9.	Clock Back Up Battery	Shelf life: 4 Years Continuous Usage Life: 10 Years	Shelf life: 4 Years Continuous Usage Life: 10 Years
10.	Power Factor	from 0 to ±1	from 0 to ±1
11.	Initial Current	0,004 Ib	0,002 In
12.	Nominal Frequency	50 Hz ±%5	50 Hz ±%5
13.	Digital Display	<ul style="list-style-type: none"> • For Energy Amount 8 Digits • For Demand Value 6 Digits 	<ul style="list-style-type: none"> • For Energy Amount 8 Digits • For Demand Value 6 Digits • Power Factor 4 Digits
14.	Loses • In the Current Circuit (VA) • In The Voltage Circuit (VA)	<ul style="list-style-type: none"> • 4 VA • 2W and 10 VA 	<ul style="list-style-type: none"> • 4 VA • 2W and 10 VA
15.	Excessive Load on Current Circuit	30 I _{max}	20 I _{max}
16.	Effect of the Short Term Current to Precision	± 1,5%	± 0,5%
17.	Operation Temperature Range	-40 °C, +85 °C	-40 °C, +85 °C
18.	Protection Class	IP54	IP54
19.	Communication; Infrared Optic Interface Communication Rate	300-4800 Baud	300-4800 Baud
20.	Pulse Outputs	1000 imp/kWh	10.000 imp/kWh
21.	Number of Pulse Displaying LED for Power Measurement	1 LED	1 LED
22.	Rate and Counter Invariables of Pulse Displaying LED	1000 imp/kWh	10.000 imp/kWh
23.	Isolation Isolation Resistance Impulse Voltage High Frequency Fields Strength	4 kV AC / 50 Hz / 1 minute 8 kV / 1,2-50μ2Ω (measuring circuit, auxiliary voltage) 30 V/m (on Load)	4 kV AC / 50 Hz / 1 minute 8 kV / 1,2-50μ2Ω (measuring circuit, auxiliary voltage) 30 V/m (on Load)
24.	Data Interfaces	Optic Interface: 1	Optical Interface: 1
25.	Data Collection Capacity of Counter Memory	1 Year	1 Year
26.	Load Profile Register Number	-	-
27.	Password / Locking or Protection Function	Upper Lid, Connector Lid, 2 Passwords	Upper Lid, Connector Lid, 2 Passwords
28.	Demand Integration Period	15 Minutes Fixed	15 Minutes Fixed

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ELECTRONIC ELCTRIC ENERGY METER TECHNICAL DATA

No	Subject		
1.	Type	AEL.TF.09	AEL.TF.10
2.	Name	3 phase, 4 wire, 4 tariff, demand measuring, optic port communication, current and voltage transformer connected, active-reactive-capacitive electronic meter	3 phase, 4 wire, 4 tariff, demand measuring, optic port communication, direct connection, active-reactive-capacitive electronic meter
3.	Casing Type	Mountable to the Wall	Mountable to the Wall
4.	Precision Class	Active Class 1 Reactive Class 2	Active Class 1 Reactive Class 2
5.	Relevant Standard	TS EN 62052-11 TS EN 62053-21 TS EN 62053-23	TS EN 62052-11 TS EN 62053-21 TS EN 62053-23
6.	Nominal Current	X.../5(10) A	3x10(100) A
7.	Nominal Voltage	3x220/380 V - 3x57,7/100 V	3x220/380 V
8.	Real Time Clock	Internal quartz crystal (IEC-EN 61038)	Internal quartz crystal (IEC-EN 61038)
9.	Clock Back Up Battery	Shelf life: 4 Years Continuous Usage Life: 10 Years	Shelf life: 4 Years Continuous Usage Life: 10 Years
10.	Power Factor	from 0 to ± 1	from 0 to ± 1
11.	Initial Current	0,002 I _n	0,004 I _b
12.	Nominal Frequency	50 Hz $\pm 5\%$	50 Hz $\pm 5\%$
13.	Digital Display	<ul style="list-style-type: none"> • For Energy Amount 8 Digits • For Demand Value 6 Digits • Power Factor 4 Digits 	<ul style="list-style-type: none"> • For Energy Amount 8 Digits • For Demand Value 6 Digits • Power Factor 4 Digits
14.	Loses • In the Current Circuit (VA) • In The Voltage Circuit (VA)	<ul style="list-style-type: none"> • ≤ 4 VA • ≤ 2W and ≤ 10 VA 	<ul style="list-style-type: none"> • ≤ 4 VA • ≤ 2W and ≤ 10 VA
15.	Excessive Load on Current Circuit	20 I _{max}	30 I _{max}
16.	Effect of the Short Term Current to Precision	$\leq 0,5\%$	$\leq 1,5\%$
17.	Operation Temperature Range	-40 °C, +85 °C	-40 °C, +85 °C
18.	Protection Class	IP54	IP54
19.	Communication; Infrared Optic Interface Communication Rate	300-9600 Baud	300-9600 Baud
20.	Pulse Outputs	10.000 imp/kWh	1000 imp/kWh
21.	Number of Pulse Displaying LED for Power Measurement	1 LED	1 LED
22.	Rate and Counter Invariables of Pulse Displaying LED	10.000 imp/kWh	1000 imp/kWh
23.	Isolation Isolation Resistance Impulse Voltage High Frequency Fields Strength	4 kV AC / 50 Hz / 1 minute 8 kV / 1,2-50 μ 2 Ω (measuring circuit, auxiliary voltage) 30 V/m (on Load)	4 kV AC / 50 Hz / 1 minute 8 kV / 1,2-50 μ 2 Ω (measuring circuit, auxiliary voltage) 30 V/m (on Load)
24.	Data Interfaces	RS 485 Interface: 1 Optical Interface: 1	RS 485 Interface: 1 Optical Interface: 1
25.	Data Collection Capacity of Counter Memory	1 Year	1 Year
26.	Load Profile Register Number	42 Days, With 30 Minutes Intervals	42 Days, With 30 Minutes Intervals
27.	Password / Locking or Protection Function	Upper Lid, Connector Lid, 2 Passwords	Upper Lid, Connector Lid, 2 Passwords
28.	Demand Integration Period	Adjustable Demand Period 1,5,15,30 and 60 minutes	Adjustable Demand Period 1,5,15,30 and 60 minutes

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No	Subject		
1.	Type	AEL.TF.11-0,5S	AEL.TF.12
2.	Name	0,5 Class, 3 phase, 4 wire, 4 tariff, demand measuring, optic port communication, current and voltage transformer connected, active-reactive-capacitive, load profile electronic meter	3 phase, 4 wire, 4 tariff, demand measuring, optic port communication, direct connection, RS485 for communicate, active electronic meter
3.	Casing Type	Mountable to the Wall	Mountable to the Wall
4.	Precision Class	Active Class 0,5S Reactive Class 2	Class 1
5.	Relevant Standard	TS EN 62052-11 TS EN 62053-22 TS EN 62053-23	TS EN 62052-11 TS EN 62053-21
6.	Nominal Current	X.../5(10) A	3x10(100) A
7.	Nominal Voltage	3x220/380 V - 3x57,7/100 V	3x220/380 V
8.	Real Time Clock	Internal quartz crystal (IEC-EN 61038)	Internal quartz crystal (IEC-EN 61038)
9.	Clock Back Up Battery	Shelf life: 4 Years Continuous Usage Life: 10 Years	Shelf life: 4 Years Continuous Usage Life: 10 Years
10.	Power Factor	from 0 to ± 1	from 0 to ± 1
11.	Initial Current	0,001 In	0,004 Ib
12.	Nominal Frequency	50 Hz $\pm 5\%$	50 Hz $\pm 5\%$
13.	Digital Display	<ul style="list-style-type: none"> • For Energy Amount 8 Digits • For Demand Value 6 Digits • Power Factor 4 Digits 	<ul style="list-style-type: none"> • For Energy Amount 8 Digits • For Demand Value 6 Digits • Power Factor 4 Digits
14.	Loses • In the Current Circuit (VA) • In The Voltage Circuit (VA)	<ul style="list-style-type: none"> • ≤ 1 VA • ≤ 2W and ≤ 10 VA 	<ul style="list-style-type: none"> • ≤ 4 VA • ≤ 2W and ≤ 10 VA
15.	Excessive Load on Current Circuit	20 I _{max}	30 I _{max}
16.	Effect of the Short Term Current to Precision	$\leq 0,05\%$	$\leq 1,5\%$
17.	Operation Temperature Range	-25 °C, +55 °C	-40 °C, +85 °C
18.	Protection Class	IP51	IP54
19.	Communication; Infrared Optic Interface Communication Rate	300-9600 Baud	300-4800 Baud
20.	Pulse Outputs	10.000 imp/kWh, 10.000 imp/kVarh	1000 imp/kWh
21.	Number of Pulse Displaying LED for Power Measurement	2 LED	1 LED
22.	Rate and Counter Invariables of Pulse Displaying LED	10.000 imp/kWh, 10.000 imp/kVarh	1000 imp/kWh
23.	Isolation Isolation Resistance Impulse Voltage High Frequency Fields Strength	4 kV AC / 50 Hz / 1 minute 8 kV / 1,2-50 μ 2 Ω (measuring circuit, auxiliary voltage) 30 V/m (on Load)	4 kV AC / 50 Hz / 1 minute 8 kV / 1,2-50 μ 2 Ω (measuring circuit, auxiliary voltage) 30 V/m (on Load)
24.	Data Interfaces	RS 485 Interface: 1 Optical Interface: 1	RS 485 Interface: 1 Optical Interface: 1
25.	Data Collection Capacity of Counter Memory	1 Year	1 Year
26.	Load Profile Register Number	42 Days, With 30 Minutes Intervals	-
27.	Password / Locking or Protection Function	Upper Lid, Connector Lid, 2 Passwords	Upper Lid, Connector Lid, 2 Passwords
28.	Demand Integration Period	Adjustable Demand Period 1,5,15,30 and 60 minutes	15 Minutes Fixed

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Type: AEL.MF.03



Type: AEL.MF.04



Type: AEL.MF.05



Type: AEL.TF.04

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Type: AEL.TF.05



Type: AEL.TF.09



Type: AEL.TF.10



Type: AEL.TF.11-0,5S

