



Features	OMNI 6000	OMNI 6000E	OMNI 7000
HARDWARE			
Processor Speed - Max	150 MHz	150 MHz	416 MHz
Hardware Floating Point	No	No	Yes
FLASH Memory	4 Mbytes	4 Mbytes	16 Mbytes
Execution Memory	4 MBytes	4 MBytes	128 Mbytes
Error Correcting Memory	No	No	Yes
Configuration/Archive Memory	2 Mbytes	2 Mbytes	4 Mbytes
Battery Required for Maintaining Configuration	✓	✓	
Configuration Retention Without Power	90 Days	90 Days	10 Years (typical)
Real Time Clock (RTC) Accuracy	7 PPM	7 PPM	7 PPM
RTC Battery Field Replaceable	No	No	Yes
Secure Digital (SD) Card	No	No	Yes
SD Card Max Size	N/A	N/A	8GB
CPU Battery Voltage Monitor	No	No	Yes
Maximum Digital Points	24	24	58
Front Panel USB			Yes - Host & Device Ports
Maximum HART Cards	4	4	6
Maximum H Cards	4	4	N/A
Maximum SV Cards	2	2	N/A
FIRMWARE			
Maximum Meter Runs	4	4	6
Maximum Stations	1	1	2
Maximum Process Inputs	24	24	32
Maximum Analog Outputs	12	12	24
Maximum Auxiliary Inputs	4	4	6
Measure Liquid & Gas simultaneously			Yes
Liquid Products	16/(8 in Meter Factor Curve App)	32/(8 in Meter Factor Curve App)	32
Gas Fluid Products	4	4	6
User Display Variables	32	32	200
Calibration Verification Logging			✓
Variable Statements	64 lines x16 characters	128 lines x 16 characters	128 lines x 32 characters
Boolean Statements	64 lines x16 characters	128 lines x 16 characters	128 lines x 32 characters
Synchronize execution of Boolean Statements with Variable Statements			✓
Boolean& Variable statements syntax checking			✓
Algorithm Specific Calculation Alarms	No (Calc Out of Range only)	No (Calc Out of Range only)	✓
Process Input Overrides/Strategy associated with each Meter Run			✓



Features	OMNI 6000	OMNI 6000E	OMNI 7000
FIRMWARE			
Batch Stacks – Independent Meter Stacks & Station Stacks	4 Independent or 1 Station	4 Independent or 1 Station	6 Independent and 2 Station
User Specified Register Data Archiving	✓	✓	✓
Automatic System Archiving beyond 8 most recent Batch, Daily, and Prove Reports			✓
Hourly Data Archive	User Defined	User Defined	35 Days Min (2GB Max)
Daily Data Archive	User Defined	User Defined	35 Days Min (2GB Max)
Alarm Events	500	1000	1000
Audit Log Events	250	1000	1000
Peer-to-Peer on any Serial Port	No - Serial Port #2	No - Serial Port #2	Yes
Gas Chromatograph on any Serial Port	No - Serial Port #3	No - Serial Port #3	Yes
Allen-Bradley PLC on any Serial Port	No - Serial Port #4	No - Serial Port #4	N/A
PID Control Loops	4	4	6
Endress+Hauser Coriolis Mass Flow Meter Reynolds Number Calculation			✓
One Firmware File for all application modes			✓
Real Time Operating System			✓
Programming Language	Assembly	Assembly	C/C++
ETHERNET CONNECTIVITY			
Maximum Ethernet Ports	3 (3 SE Cards)	3 (3 SE Cards)	4 (2 DE Cards)
Maximum Ethernet Virtual Connections	24	24	32
Each virtual connection can have a separate virtual Port number	No	No	✓
Ethernet Port Turnaround response time	100ms	100ms	6ms
RS-485 repeater ports can be used as RS-485 2-wire normal ports	No	No	✓
Ethernet Speed	10BaseT	10BaseT	10/100BaseT
Onboard Ethernet RJ-45 Connector			Yes(100BaseT)
Automatic Ethernet RX/TX & Polarity Detection			✓
Mix Modicon and Non-Modicon on same physical Ethernet Port			✓
Full Password Handling Over Ethernet			✓
Software Selectable Termination on Ethernet module RS-485 Ports			✓
Secure Socket Layer (SSL) Connections			✓



Features	OMNI 6000	OMNI 6000E	OMNI 7000
REPORTING			
Local Serial Printers	1	1	2
Printer(s) on any Serial Port	No (Only Port #1)	No (Only Port #1)	✓
Ethernet Printers	4	4	8
Control which Reports Sent to local Printers			✓
Control which Reports Sent to Ethernet Printers	✓	✓	✓
Historical Batch Reports	8	8	Last 35 on CPU + 2GB on SD Card
Historical Prove Reports	8	8	Last 35 on CPU + 2GB on SD Card
Historical Daily Reports	8	8	Last 35 on CPU + 2GB on SD Card
Regenerate Reports From Historical Data			✓
User Defined Custom Report Templates per Report Type	1	1	2
Custom Report Templates - User configurable right/left justification of printed fields			✓
PROVER			
Master Meter run number is Selectable	No (Always Meter 4)	No (Always Meter 4)	✓
Prover Volumes / Detectors Sets	1 / 1	1 / 1	2 / 2
Prover Detector Polarity Software Selectable			✓
SECURITY			
User Level Security for each Ethernet Virtual Connection			✓
Port Security	Partial	Partial	✓
User Defined Database Mapping on Ports			✓
User Security with names/passwords		✓	✓
Configurable Number of Specific Users	0	16	16
Security Levels	3	32	64
Full Configuration Changes Auditing		✓	✓
Separate System and Measurement Audit Logs			✓
Checksum on user-selectable Configuration Registers		✓	



	OMNICOM	OMNICOM Enhanced	OMNICONNECT
SOFTWARE			
Modbus Database Browser		✓	✓
Custom User Defined Database Mappings			✓ (10)
Operate Menu - Real Time Data Screens			✓
Operate Menu - OMNI Initialization Report			✓
Diagnostics Menu - I/O Overview - Remote Inputs Display			✓
Diagnostics Menu - I/O Overview - Virtual Inputs Display		✓	✓
Diagnostics Menu - Calibration			✓
Diagnostics Menu - Checksums Display		✓	✓
Diagnostics Menu - Task Timings			✓
Diagnostics Menu - Boolean/Variable Statement Results		✓	✓
Diagnostics Menu - Reset Date/Time			✓
Diagnostics Menu - Reset I/O Calibrations			✓
Diagnostics Menu – Reset Prove Hist. Data			✓
Diagnostics Menu - Reset Application Mode			✓
Diagnostics Menu - Reset RAM			✓
Diagnostics Menu - Reset Totalizers for Meters and Stations			✓
User Security Configuration Settings		✓	✓
Requests User Password to Gain Online Entry		✓	✓
SSL Connection Available			✓
Software License Required			✓



Firmware 6000E to 7000 Translation Table:

6000/6000E Revision	7000 Application	FIRMWARE	
		BASIC	STANDARD
20	Liquid - K-Factor Curve - US units	✓	✓
21	Not Supported		
22	Liquid - Meter Factor Curve - US units	✓	✓
23	Gas - US units	✓	✓
24	Liquid - K-Factor Curve - Metric units	✓	✓
26	Liquid – Meter Factor Curve - Metric units	✓	✓
27	Gas - Metric units	✓	✓
Not supported	Gas & Liquid Combo - K-Factor Curve - US Units		✓
Not supported	Gas & Liquid Combo - K-Factor Curve - Metric Units		✓

OMNI 7000 FIRMWARE		
Embedded Firmware (Standard)	OMNI Embedded Firmware License	Standard OMNI Embedded Firmware License License includes all fluid and flow meter types Enabled Features: <ul style="list-style-type: none"> • Liquid and Gas Measurement Simultaneously • User Defined Database Mapping • Dual Stations • SSL Security
Embedded Firmware (Basic)	OMNI Embedded Firmware License	Basic OMNI Embedded Firmware License License includes all fluid and flow meter types **NO FEATURES ENABLED**

Descriptions for the Licensing Features in the OMNI 7000 STANDARD Firmware:

Gas & Liquid Combo Application

Offers a combination of gas and liquid meters used simultaneously. The user can select which meters are liquid and which meters are gas. The liquid and gas meters are K-Factor curve application only. There are two stations that can be configured: Station 1 is dedicated for the gas meters and Station 2 is for the liquid meters.

User Defined Database Mapping

Custom Database mapping is used when a client needs to access the OMNI using a different Modbus register set than the native Modbus register addresses. It can also be used as a security measure to limit the registers available to a client as read-only. There are 10 configurable maps available to the system. Each map contains a maximum of 1000 configurable points. The maps may be assigned to a serial or Ethernet port such that access via those ports are limited to the points configured for the map.

Dual Stations

Only for all liquid applications or all gas applications, the user can have two stations in which to group meters. This may be useful if two different station totals are required or customers are sharing an OMNI, each with their own meter set. For the Combo applications, one station is automatically allocated for liquid and one station for gas.

SSL Security

Secure socket layer protocol or transport layer security – cryptographic protocols that provide communications security over a computer network. The connection is private because the data is encrypted, the identity of the communicating parties can be authenticated, and each message includes an authentication code to prevent undetected loss or alteration of the data during transmission.



Products Supported (Liquid K-Factor-US Units)

Products Supported	OMNI 6000/6000E App 20	OMNI 7000 Liquid K-Factor- US Units	OMNI 7000 Liquid K-Factor- US Units Combo Mode
API 11.1 2007 Crude Oil	✓	✓	✓
API 11.1 2007 Refined Products	✓	✓	
API 11.1 2007 Lubricating Oil	✓	✓	
API 11.1 2007 Special Applications	✓	✓	
API 11.1 1980 Table 23A/24A	✓		
API 11.1 1980 Table 23B/24B	✓		
API 11.1 1980 Table 24C	✓		
API 2540/ASTM D150 1952 Table 23/24	✓	✓	✓
API 2540/ASTM D150 1952 Table 5/6	✓	✓	✓
GPA TP16	✓		
API 11.2.4 (GPA TP27) 23E/24E	✓	✓	✓
NGL	✓		
GPA RR133 E/P Mix	✓		
P/P Mix	✓		
Mass Calculation	✓	✓	✓
ASTM D1550	✓		
ASTM D1555	✓	✓	✓
Benzene	✓		
Cumene	✓		
Cyclohexane	✓		
Ethylbenzene	✓		
m-Xylene	✓		
o-Xylene	✓		
p-Xylene	✓		
Styrene	✓		
Toluene	✓		
Aromatic Hydrocarbon(300 to 350 degF)	✓		
Aromatic Hydrocarbon(350 to 400 degF)	✓		
Propylene API 2565/11.3.3.2	✓		
Ethylene IUPAC	✓		
Ethylene NIST 1045	✓		
Ethylene API 2565/API 11.3.2	✓		
CO2PAC	✓		
API 11.4.1 Water	✓		
Anhydrous Ammonia	✓		



Products Supported (Liquid Meter Factor-US Units)

Products Supported	OMNI 6000/6000E App 22	OMNI 7000 Liquid Meter Factor US-Units
API 11.1 2007 Crude Oil	✓	✓
API 11.1 2007 Refined Products	✓	✓
API 11.1 2007 Lubricating Oil	✓	✓
API 11.1 2007 Special Applications	✓	✓
API 11.1 1980 Table 23A/24A	✓	
API 11.1 1980 Table 23B/24B	✓	
API 11.1 1980 Table 24C	✓	
API 11.1 1980 Table 5A/6A	✓	
API 11.1 1980 Table 5B/6B	✓	
API 11.1 1980 Table 6C	✓	
API 2540/ASTM D150 1952 Table 23/24	✓	✓
API 2540/ASTM D150 1952 Table 5/6	✓	✓
GPA TP16	✓	
API 11.2.4 (GPA TP27) 23E/24E	✓	✓
Mass Calculation		✓
ASTM D1555		✓



Calculations/Meters Support (Gas-US Units)

Calculations/Meters Supported (Gas-US Units)	OMNI 6000/6000E App 23	OMNI 7000 Gas-US Units	OMNI 7000 Gas-US Units Combo Mode
Natural Gas	✓	✓	✓
Steam (ASME)	✓		
Steam (NIST)	✓		
Water (KK)	✓		
Argon	✓		
Nitrogen	✓		
Oxygen	✓		
Hydrogen	✓		
Ethylene	✓		
Ethylene IUPAC	✓		
NIST14	✓		
Density Methods			
AGA-8 1994 Detailed Analysis- Method 1	✓	✓	✓
AGA-8 1994 Gross Method 2	✓	✓	✓
AGA-8 1994 Gross Method 3	✓	✓	✓
AGA-8 1992 Detailed Analysis Method 1 (ISO 12213-2)	✓		
AGA-8 1992 Gross Method 2	✓		
AGA-8 1992 Gross Method 3	✓		
AGA-8 1985 Detailed Analysis Method 1	✓		
AGA-8 1985 Gross Method 2	✓		
AGA-8 1985 Gross Method 3	✓		
AGA-8 1985 Gross Method 4	✓		
AGA-8 1985 Gross Method 5	✓		
AGA-8 1985 Gross Method 6	✓		
AGA-10	✓	✓	✓
Redlich-Kwong	✓		
Ideal Gas	✓		
Viscosity - LBC	✓	✓	✓
Isentropic Exponent - Estimated	✓	✓	✓
Isentropic Exponent - AGA-10	✓	✓	✓
Heating Value - GPA 2172 (2009)	✓	✓	✓
Heating Value - GPA 2172 (1996)	✓		



Calculations/Meters Supported (Gas-US Units)	OMNI 6000/6000E App 23	OMNI 7000 Gas-US Units	OMNI 7000 Gas-US Units Combo Mode
Heating Value - AGA-5 (2009)	✓	✓	✓
Heating Value - AGA-5 (1999)	✓		
Heating Value - ISO 6976 (1995) 60/60 degF	✓	✓	✓
Reference Density - Relative Density(SG) x Density of Dry Air	✓	✓	✓
Reference Density using AGA-8	✓	✓	✓
Flowing Calculations			
API 14.3 (AGA-3):2012	✓	✓	✓
API 14.3 (AGA-3):1992	✓		
Flange	✓	✓	✓
V-Cone	✓		
All DP Device Types other than Flange and V-Cone	✓	✓	✓
Transducer Density - Isentropic Correction	✓	✓	✓
Transducer Density - Isenthalpic Correction	✓	✓	✓
Isentropic Correction Upstream Temperature Calculation	✓	✓	✓
Simplified Joule-Thomson Isenthalpic Correction UTC	✓	✓	✓
Joule-Thomson Isenthalpic Correction UTC		✓	✓
Joule-Thomson Isenthalpic Correction UTC-using AGA-10		✓	✓
Meter Types			
DP Device	✓	✓	✓
Pulse Type	✓	✓	✓
Coriolis Mass Pulse	✓	✓	✓
Equimeter ATT	✓		
MultiVariables - Rosemount/Honeywell	✓		
UltraSonic - Instromet/FMC/Daniel/FLWSIC	✓		
Other Equipment			
GC - Applied Automation	✓		
GC - Danalyzer ASCII/RTU	✓	✓	✓
Allen-Bradley PLC	✓		



Products Supported (Liquid K-Factor-Metric Units)

Products Supported	OMNI 6000/6000E App 24	OMNI 7000 Liquid K-Factor- Metric Units	OMNI 7000 Liquid K-Factor- Metric Units Combo Mode
API 11.1 2007 Crude Oil	✓	✓	✓
API 11.1 2007 Refined Products	✓	✓	
API 11.1 2007 Lubricating Oil	✓	✓	
API 11.1 2007 Special Applications	✓	✓	
API 11.1 1980 Table 53A/54A	✓		
API 11.1 1980 Table 53B/54B	✓		
API 11.1 1980 Table 54C	✓		
API 11.1 1980 Table 53D/54D	✓		
API 2540/ASTM D150 1952 Table 53/54	✓	✓	✓
GPA TP16M	✓		
API 11.2.4 (GPA TP27M) 53E/54E/59E/60E	✓	✓	✓
API MPMS 11.2.4 – 59E/60E	✓		
NGL	✓		
GPA RR133 E/P Mix	✓		
P/P Mix	✓		
Mass Calculation	✓	✓	✓
ASTM D1550	✓		
ASTM D1555M	✓	✓	✓
Benzene	✓		
Cumene	✓		
Cyclohexane	✓		
Ethylbenzene	✓		
m-Xylene	✓		
o-Xylene	✓		
p-Xylene	✓		
Styrene	✓		
Toluene	✓		
Aromatic Hydrocarbon(300 to 350 degF)	✓		
Aromatic Hydrocarbon(350 to 400 degF)	✓		
Propylene API 2565/11.3.3.2	✓		
Ethylene IUPAC	✓		
Ethylene NIST 1045	✓		
Ethylene API 2565/API 11.3.2	✓		
IP Petroleum Measurement Table 59A/60A	✓		
IP Petroleum Measurement Table 59B/60B	✓		



Products Supported	OMNI 6000/6000E App 24	OMNI 7000 Liquid K-Factor- Metric Units	OMNI 7000 Liquid K-Factor- Metric Units Combo Mode
IP Petroleum Measurement Table 59D/60D	✓		
CO2PAC	✓		
Alcohol ABNT NBR 5992:2008	✓	✓	✓
Alcohol OIML R22	✓	✓	✓
API 11.4.1 Water	✓		
Anhydrous Ammonia	✓		

Products Supported (Liquid Meter Factor-Metric Units)

Products Supported	OMNI 6000/6000E App 26	OMNI 7000 Liquid Meter Factor Metric Units
API 11.1 2007 Crude Oil	✓	✓
API 11.1 2007 Refined Products	✓	✓
API 11.1 2007 Lubricating Oil	✓	✓
API 11.1 2007 Special Applications	✓	✓
API 11.1 1980 Table 53A/54A	✓	
API 11.1 1980 Table 53B/54B	✓	
API 11.1 1980 Table 54C	✓	
API 2540/ASTM D150 1952 Table 53/54	✓	✓
GPA TP16	✓	
API 11.2.4 (GPA TP27M) 53E/54E/59E/60E	✓	✓
API MPMS 11.2.4 – 59E/60E	✓	
Mass Calculation		✓
ASTM D1555M		✓
IP Petroleum Measurement Table 59A/60A	✓	
IP Petroleum Measurement Table 59B/60B	✓	
IP Petroleum Measurement Table 59D/60D	✓	
Alcohol ABNT NBR 5992:2008	✓	✓
Alcohol OIML R22	✓	✓



Calculations/Meters Support (Gas-Metric)

Calculations/Meters Supported (Gas-Metric Units)	OMNI 6000/6000E App 27	OMNI 7000 Gas-Metric Units	OMNI 7000 Gas-Metric Units Combo Mode
Natural Gas	✓	✓	✓
Steam (ASME)	✓		
Steam (NIST)	✓		
Water (KK)	✓		
Argon	✓		
Nitrogen	✓		
Oxygen	✓		
Hydrogen	✓		
Ethylene	✓		
Ethylene IUPAC	✓		
NIST14	✓		
Krohne Ethylene	✓		
Density Methods			
AGA-8 1994 Detailed Density Method 1	✓	✓	✓
AGA-8 1994 Gross Density Method 2	✓	✓	✓
AGA-8 1994 Gross Density Method 3	✓	✓	✓
AGA-8 1992 Detailed Density Method 1 (ISO 12213-2)	✓		
AGA-8 1992 Gross Density Method 2	✓		
AGA-8 1992 Gross Density Method 3	✓		
AGA-8 1985 Detailed Density Method 1	✓		
AGA-8 1985 Gross Density Method 2	✓		
AGA-8 1985 Gross Density Method 3	✓		
AGA-8 1985 Gross Density Method 4	✓		
AGA-8 1985 Gross Density Method 5	✓		
AGA-8 1985 Gross Density Method 6	✓		
AGA-10	✓	✓	✓
Redlich-Kwong - Method 1	✓		
Ideal Gas - Method 1	✓		
NX-19 1962	✓		
NX-19 MOD	✓		
ISO 12213-3 2007 (SGerg)	✓	✓	✓
SGerg 1988 - Method 2	✓	✓	✓
SGerg 1988 - Method 3	✓	✓	✓
SGerg 1988 - Method 4	✓	✓	✓
Viscosity - LBC	✓	✓	✓



Calculations/Meters Supported (Gas-Metric Units)	OMNI 6000/6000E App 27	OMNI 7000 Gas-Metric Units	OMNI 7000 Gas-Metric Units Combo Mode
Viscosity - GazProm	✓		
Isentropic Exponent - Estimated	✓	✓	✓
Isentropic Exponent - GazProm	✓		
Isentropic Exponent - AGA-10	✓	✓	✓
Heating Value - GPA 2172 (2009)	✓	✓	✓
Heating Value - GPA 2172 (1996)	✓		
Heating Value - AGA-5 (2009)	✓	✓	✓
Heating Value - AGA-5 (1999)	✓		
Heating Value - ISO 6976 (1995)	✓	✓	✓
Reference Density - Relative Density(SG) x Density of Dry Air	✓	✓	✓
Reference Density using AGA-8	✓	✓	✓
Reference Density - Using ISO 6976	✓	✓	✓
Flowing Calculations			
API 14.3 (AGA-3):2012	✓	✓	✓
API 14.3 (AGA-3):1992	✓		
ISO 5167:2003	✓	✓	✓
ISO 5167:1998	✓		
ISO-5167:1991	✓		
Flange	✓	✓	✓
V-Cone	✓		
All DP Device Types other than Flange and V-Cone	✓	✓	✓
Transducer Density - Isentropic Correction	✓	✓	✓
Transducer Density - Isenthalpic Correction	✓	✓	✓
Isentropic Correction Upstream Temperature Calculation	✓	✓	✓
Simplified Joule-Thomson Isenthalpic Correction UTC	✓	✓	✓
Joule-Thomson Isenthalpic Correction UTC	✓	✓	✓
Joule-Thomson Isenthalpic Correction UTC-using AGA-10	✓	✓	✓
Joule-Thomson Isenthalpic Correction UTC-using NIST14	✓		
Meter Types			
DP Device	✓	✓	✓
Pulse Type	✓	✓	✓
Coriolis Mass Pulse	✓	✓	✓
Equimeter AAT	✓		



Calculations/Meters Supported (Gas-Metric Units)	OMNI 6000/6000E App 27	OMNI 7000 Gas-Metric Units	OMNI 7000 Gas-Metric Units Combo Mode
MultiVariables - Rosemount/Honeywell	✓		
UltraSonic - Instromet/FMC/Daniel/FLAWSIC	✓		
Other Equipment			
GC - Applied Automation	✓		
GC - Danalyzer ASCII/RTU	✓	✓	✓
Allen-Bradley PLC	✓		

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