

# **SOFTWARE** M-BUS MASTER

# For M-Bus Communication Module

3-349-657-03 1/11.11

Application setup Network functions Network function Network function Network function Network function Network function Network function Network function Network function Network function Network functi Network function Network function Network function Network functi	Application setup Network functions Add conter manager Betwork flambor Betwork flambor Betwork Betwork flambor Betwork flambor	Device data     Device da										GUSSEN M	EIRAWALI
Time       Type       Information Energy Ty       Phase       Tariff       Measure Type       Value       Measure Unit       *         2011/2011 10:39:39       Measure       -       Rescive       Phase2       Tele       Exported Induction       0       variable         2011/2011 10:39:39       Measure       -       Rescive       Phase2       Tele       Exported Induction       0       variable         2011/2011 10:39:39       Measure       -       Rescive       Phase2       Tele       Exported Induction       0       variable	Time       Type       Information Energy Ty       Phase       Tariff       Measure Type       Value       Measure Unit       Phase       Phase       Tariff       Measure Type       Value       Measure Unit       Phase       Phase       Tariff       Measure Type       Value       Measure Unit       Measure Type       Value       Value       Value       Value	The second discourt manually in the second manual secon	Application setup	Device information De	vice setup	Device cor	mmands D	evice data					
23/12/2011 10:39:39       Measure       -       Reactive       Phase2       Tell       Exported Inductiv       0       varia         23/11/2011 10:39:39       Measure       -       Reactive       Phase2       Tell       Exported Inductiv       0       varia         23/11/2011 10:39:39       Measure       -       Reactive       Phase2       Tell       Exported Inductiv       0       varia         23/11/2011 10:39:39       Measure       -       Reactive       Phase2       Tell       Imported Capacit       0       varia         23/11/2011 10:39:39       Measure       -       Reactive       Phase2       Tell       Imported Capacit       0       varia         23/11/2011 10:39:39       Measure       -       Reactive       Phase2       Tell       Imported Capacit       0       varia         23/11/2011 10:39:39       Measure       -       Reactive       Phase2       Tell       Exported Capacit       0       varia         23/11/2011 10:39:39       Measure       -       Reactive       Phase2       Tell       Exported Capacit       0       varia         23/11/2011 10:39:39       Measure       -       Reactive       Phase2       Tell       Exported Capacit <td< td=""><td>23/12/2011/2011/03939       Measure       -       Reactive       Phese2       Teld       Exported Inductiv       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese2       Teld       Exported Inductiv       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese2       Teld       Exported Inductiv       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese2       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese2       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese3       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese1       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       2       Phese1       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       2       Phese1       Teld       Exported Capacit       0       varh</td><td>And counter manually Briggscansts         22/11/2011 10:39:39         Measure Partice         Ractice         Presz         Trail Exposted finduktion         O         with U           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted finduktion         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted finduktion         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39</td><td>Network discover</td><td>Time</td><td>Туре</td><td>Informatio</td><td>n Energy Ty</td><td>Phase</td><td>Tariff</td><td>Measure Type</td><td>Value</td><td>Measure Unit</td><td>*</td></td<>	23/12/2011/2011/03939       Measure       -       Reactive       Phese2       Teld       Exported Inductiv       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese2       Teld       Exported Inductiv       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese2       Teld       Exported Inductiv       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese2       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese2       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese3       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       Reactive       Phese1       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       2       Phese1       Teld       Exported Capacit       0       varh         23/11/2011/10/3939       Measure       -       2       Phese1       Teld       Exported Capacit       0       varh	And counter manually Briggscansts         22/11/2011 10:39:39         Measure Partice         Ractice         Presz         Trail Exposted finduktion         O         with U           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted finduktion         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted finduktion         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39         Measure         -         Ractice         Presz         Trail         Depoted Gapati         O         with           22/11/2011 10:39:39	Network discover	Time	Туре	Informatio	n Energy Ty	Phase	Tariff	Measure Type	Value	Measure Unit	*
Device_1       22/11/2011 103339       Measure - Reactive System Total Exported Inducth 0 varh         22/11/2011 103339       Measure - Reactive System Total Exported Inducth 0 varh         22/11/2011 103339       Measure - Reactive System Total Exported Inducth 0 varh         22/11/2011 103339       Measure - Reactive System Total Imported Capact 0 varh         22/11/2011 103339       Measure - Reactive System Total Imported Capact 0 varh         22/11/2011 103339       Measure - Reactive System Total Exported Capact 0 varh         22/11/2011 103339       Measure - Reactive System Total Exported Capact 0 varh         22/11/2011 103339       Measure - Reactive System Total Exported Capact 0 varh         22/11/2011 103339       Measure - 23/11/2011 103339       Measure - 23/11/2011 103339         22/11/2011 103339       Measure - 23/11/2011 103339       Measure - 23/11/2011 103393         22/11/2011 103393       Measure - 23/11/2011 103394       Measure - 23/11/2011 103394         22/11/2011 103394       Measure - 23/11/2011 103394       Measure - 23/11/2011 103394         22/11/2011 103394       Measure - 23/11/2011 103394       Measure - 23/11/2011 103394         22/11/2011 103394       Measure - 23/11/2011 103394       Measure - 23/11/2011 103394         22/11/2011 103394       Measure - 23/11/2011 103394       Measure - 23/11/2011 103394         23/11/2011 103394       Measure - 23/	Device_1       2/1/201103939       Messure       -       Resture       -       Resture       Final Society       0       varin       -       -       Resture       -       -       Resture       -       -       -       Resture       -       -       Resture       -       Resture       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -       -	2)11/2011 10:33:9       Measure       -       Reactive       Pressit       Trail       Imported Capacit       0       with         2)11/2011 10:33:9       Measure       -       Reactive       Pressit       Trail       Imported Capacit       0       with         2)11/2011 10:33:9       Measure       -       Reactive       Pressit       Trail       Imported Capacit       0       with         2)11/2011 10:33:9       Measure       -       Reactive       Pressit       Trail       Imported Capacit       0       with         2)11/2011 10:33:9       Measure       -       Reactive       Pressit       Trail       Imported Capacit       0       with         2)11/2011 10:33:9       Measure       -       Reactive       Pressit       Trail       Exported Capacit       0       with         2)11/2011 10:33:9       Measure       -       Reactive       Pressit       Trail       Exported Capacit       0       with         2)11/2011 10:33:9       Measure       -       Reactive       Pressit       Trail       Exported Capacit       0       with         2)11/2011 10:33:9       Measure       -       Reactive       Pressit       Trail       Exported Capacit       0	4 7 Energy counters	23/11/2011 10:39:39	Measure		Reactive	Phase2	Total	Exported Inductiv	0	varh	
23/11/2011 10:39:39       Messure       -       Reactive       Phase1       Total       Imported Capacit       0       varh         23/11/2011 10:39:39       Messure       -       Reactive       Phase2       Total       Imported Capacit       0       varh         23/11/2011 10:39:39       Messure       -       Reactive       Phase2       Total       Imported Capacit       0       varh         23/11/2011 10:39:39       Messure       -       Reactive       Sported Capacit       0       varh         23/11/2011 10:39:39       Messure       -       Reactive       Phase2       Total       Exported Capacit       0       varh         23/11/2011 10:39:39       Messure       -       -       Reactive       Phase2       Total       Exported Capacit       0       varh         23/11/2011 10:39:39       Messure       -       -       Reactive       Phase2       Total       Exported Capacit       0       varh         23/11/2011 10:39:39       Messure       -       -       Reactive       Phase2       Total       Exported Capacit       0       varh         23/11/2011 10:39:41       Messure       -       -       Exported Capacit       0       Vah	22/11/2011 10:39:39       Measure       -       Reactive       Phase1       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Measure       -       Reactive       Phase2       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Measure       -       Reactive       Phase1       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Measure       -       Reactive       Phase2       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Measure       -       Reactive       Phase2       Total       Exported Capact       0       varh         22/11/2011 10:39:39       Measure       -       Reactive       Phase2       Total       Exported Capact       0       varh         22/11/2011 10:39:39       Measure       -       Reactive       Phase2       Total       Exported Capact       0       varh         22/11/2011 10:39:39       Measure       -       Reactive       Phase2       Total       Exported Capact       0       varh         22/11/2011 10:39:41       Measure       -       22/11/2011 10:39:41       Measure       -       1       Exported	22/11/2011 10:39:39       Masure -       Reactive Phasel Total Imported Capacit 0       varh         22/11/2011 10:39:39       Masure -       Reactive Phasel Total Imported Capacit 0       varh         22/11/2011 10:39:39       Masure -       Reactive Phasel Total Imported Capacit 0       varh         22/11/2011 10:39:39       Masure -       Reactive Phasel Total Imported Capacit 0       varh         22/11/2011 10:39:39       Masure -       Reactive Phasel Total Imported Capacit 0       varh         22/11/2011 10:39:39       Masure -       Reactive Phasel Total Imported Capacit 0       varh         22/11/2011 10:39:39       Masure -       Total Imported Capacit 0       varh         22/11/2011 10:39:39       Masure -       Total Imported Capacit 0       varh         22/11/2011 10:39:39       Masure -       Total Imported Capacit 0       varh         22/11/2011 10:39:41       Masure -       Total Imported Capacit 0       varh         22/11/2011 10:39:41       Masure -       Total Imported Capacit 0       varh         22/11/2011 10:39:41       Masure -       Total Imported Capacit 0       varh         22/11/2011 10:39:41       Masure -       Total Imported Capacit 0       varh         22/11/2011 10:39:41       Masure -       Total Imported Capacit 0       varh <t< td=""><td>Device_1</td><td>23/11/2011 10:39:39</td><td>Measure</td><td></td><td>Reactive</td><td>System</td><td>Total</td><td>Exported Inductiv</td><td>0</td><td>varh</td><td>E</td></t<>	Device_1	23/11/2011 10:39:39	Measure		Reactive	System	Total	Exported Inductiv	0	varh	E
22/11/2011 10:39:39       Mesure       -       Reactive       Phase2       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase3       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase2       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase2       Total       Exported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase2       Total       Exported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase       -       Reactive       Phase       -       No       Varh         22/11/2011 10:39:39       Mesure       -       -       Reactive       Phase       -       -       No       -       -       Reactive       Phase       -	22/11/2011 10:39:39       Mesure       -       Reactive       Phase2       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase3       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase2       Total       Imported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase2       Total       Exported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase2       Total       Exported Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Reactive       Phase4       0       varh         22/11/2011 10:39:39       Mesure       -       Capact       0       varh         22/11/2011 10:39:39       Mesure       -       Capact       0       varh         22/11/2011 10:39:41       Mesure       -       Exported       0       vhh         22/11/2011 10:39:41       Mesure       -       Exported       0       vhh         22/11/2011 10:39:41       Mesure       -       Exported	22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective System Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 103939       Mesure -       Rective Phase Trail Imported Capacit 0 vish         22/11/2011 1039341       Mesure -       Rective Phase		23/11/2011 10:39:39	Measure	-	Reactive	Phase1	Total	Imported Capacit	0	varh	
22/11/2011 10:39:9       Measure       -       Reactive Phases Total       Exported Capacit       0       warh         22/11/2011 10:39:9       Measure       -       Reactive System Total       Exported Capacit       0       warh         22/11/2011 10:39:9       Measure       -       Reactive System Total       Exported Capacit       0       warh         22/11/2011 10:39:9       Measure       -       Reactive Phase Total       Exported Capacit       0       warh         22/11/2011 10:39:9       Measure       -       Reactive Phase Total       Exported Capacit       0       warh         22/11/2011 10:39:9       Measure       -       -       Total       Exported Capacit       0       warh         22/11/2011 10:39:9       Measure       -       -       Total       Exported Capacit       0       warh         22/11/2011 10:39:9       Measure       -       -       Total       Exported Capacit       0       with         22/11/2011 10:39:4       Measure       -       -       Exported Capacit       0       With         22/11/2011 10:39:41       Measure       -       -       Exported Induct       42.6       With         22/11/2011 10:39:41       Measure       - </td <td>22/11/2011 10:39:39       Measure       .       Reactive Phases 1 rotal Imported Capact 0       0 varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 1 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       .       Reactive Phase 2       0       varh         22/11/2011 10:39:41       Measure       .       .       Exported 0       Wh       .         22/11/2011 10:39:41       Measure       .       .       Exported 10uctr       42,6 Vah       .         22/11/2011 10:39:41       Measure       .       .       Exported 10uctr       42,6 Vah       .         22/11/2011 10:39:41       Measure       .       .       .</td> <td>2/11/2011 10:39:39 Measure 2/11/2011 10:39:41 M</td> <td></td> <td>23/11/2011 10:39:39</td> <td>Measure</td> <td>-</td> <td>Reactive</td> <td>Phase2</td> <td>Total</td> <td>Imported Capacit</td> <td>0</td> <td>varh</td> <td></td>	22/11/2011 10:39:39       Measure       .       Reactive Phases 1 rotal Imported Capact 0       0 varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 1 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       Reactive Phases 2 rotal Exported Capact 0       varh         22/11/2011 10:39:39       Measure       .       .       Reactive Phase 2       0       varh         22/11/2011 10:39:41       Measure       .       .       Exported 0       Wh       .         22/11/2011 10:39:41       Measure       .       .       Exported 10uctr       42,6 Vah       .         22/11/2011 10:39:41       Measure       .       .       Exported 10uctr       42,6 Vah       .         22/11/2011 10:39:41       Measure       .       .       .	2/11/2011 10:39:39 Measure 2/11/2011 10:39:41 M		23/11/2011 10:39:39	Measure	-	Reactive	Phase2	Total	Imported Capacit	0	varh	
22/11/2011 10:39:39       Measure       -         22/11/2011 10:39:41       Measur	22/11/2011 10:39:9       Messure       -         22/11/2011 10:39:4       Messure       -         22/11/2011 10:39:4       Messure       -         22/11/2011 10:39:4       Messure       -         22/11/2011 10:39:4       Messure       -         22/11/2011 10:39:41       Messure <td< td=""><td>22/11/2011 10:39:39       Measure 22/11/2011 10:39:39       Measure 22/11/2011 10:39:39       Peasure 22/11/2011 10:39:41       Pe</td><td></td><td>23/11/2011 10:39:39 23/11/2011 10:39:39</td><td>Measure</td><td></td><td>Reactive</td><td>System</td><td>Total</td><td>Imported Capacit Imported Capacit</td><td>0</td><td>varn</td><td></td></td<>	22/11/2011 10:39:39       Measure 22/11/2011 10:39:39       Measure 22/11/2011 10:39:39       Peasure 22/11/2011 10:39:41       Pe		23/11/2011 10:39:39 23/11/2011 10:39:39	Measure		Reactive	System	Total	Imported Capacit Imported Capacit	0	varn	
23/11/2011 10:39:39       Measure       -         23/11/2011 10:39:41       Measur	23/11/2011 10:39:39       Measure       -       Reactive       PlasE2       Total       Exported Capacit       0       varh         23/11/2011 10:39:39       Measure       -       -       Control Capacit       0       varh         23/11/2011 10:39:39       Measure       -       -       Control Capacit       0       varh         23/11/2011 10:39:39       Measure       -       -       Control Capacit       0       varh         23/11/2011 10:39:39       Measure       -	221/12/2011/03/39       Measure       -		23/11/2011 10:39:39	Measure		Reactive	Phase1	Total	Exported Capacit	0	varh	
22/11/2011 10:39:39       Messure -         22/11/2011 10:39:41       Messu	23/11/2011 10:39:39       Measure       -         23/11/2011 10:39:41       Measur	22/11/2011 10:39:39       Measure       -         22/11/2011 10:39:41       Measur		23/11/2011 10:39:39	Measure	-	Reactive	Phase2	Total	Exported Capacit	0	varh	
22/11/2011 10:39:39       Measure       -         22/11/2011 10:39:41       Measur	22/11/2011 10:39:39       Measure       -         22/11/2011 10:39:41       Measu	12/11/2011 10:39:39       Messure       -         22/11/2011 10:39:39       Messure       -         22/11/2011 10:39:39       Messure       -         22/11/2011 10:39:49       Messure       -         22/11/2011 10:39:41       Messu		23/11/2011 10:39:39	Measure		O	01-103	Total	Exported Capacit	0	varh	
23/11/2011 10:39:39       Measure -         23/11/2011 10:39:39       Measure -         23/11/2011 10:39:39       Measure -         23/11/2011 10:39:39       Measure -         23/11/2011 10:39:41       Measu	23/11/2011 10:39:39       Measure       -         23/11/2011 10:39:39       Measure       -         23/11/2011 10:39:39       Measure       -         23/11/2011 10:39:39       Measure       -         23/11/2011 10:39:41       Measur	22/11/2011 10:39:39       Messure -         22/11/2011 10:39:41       Mess		23/11/2011 10:39:39	Measure				Tariff 1	Imported	30,1	Wh	
22/11/2011 10:39:39       Measure -         22/11/2011 10:39:39       Measure -         22/11/2011 10:39:39       Measure -         22/11/2011 10:39:41       Measu	22/11/2011 10:39:39       Measure -         22/11/2011 10:39:39       Measure -         22/11/2011 10:39:39       Measure -         22/11/2011 10:39:41       Measu	22/11/2011 10:39:39       Measure       -         22/11/2011 10:39:39       Measure       -         22/11/2011 10:39:49       Measure       -         22/11/2011 10:39:41       Measure       -         23/11/2011 10:39:41       Measur		23/11/2011 10:39:39	Measure	-	6		Fariff 1	Imported	30,1	Wh	
22/11/2011 10:39:39       Messure -         22/11/2011 10:39:39       Messure -         22/11/2011 10:39:41       Mess	23/11/2011 10:39:39       Measure       -         23/11/2011 10:39:39       Measure       -         23/11/2011 10:39:41       Measu	22/11/2011 10:39:39       Measure       1       Exported       0       Wh         22/11/2011 10:39:39       Measure       -       1       Exported       0       Wh         22/11/2011 10:39:41       Measure       -       2       0       Wh       1       Exported       0       Wh         22/11/2011 10:39:41       Measure       -       2       0       Wh       1       Exported       0       Wh         22/11/2011 10:39:41       Measure       -       2       0       Wh       1       Exported       0       Wh         22/11/2011 10:39:41       Measure       -       2       1       Exported       1       Muotte 1       1       Exported       0       Wh         22/11/2011 10:39:41       Measure       -       2       1       1       Exported       1       Muotte 1       1       Exported       1       1       Exported       1       1       Exported       1		23/11/2011 10:39:39	Measure	-			Fariff 1	Imported	30,1	Wh	
23/11/2011 10:39:39       Measure       -         23/11/2011 10:39:41       Measu	23/11/2011 10:39:41       Measure       -         23/11/2011 10:39:41       Measur	23/11/2011 10:339:41       Messure -         23/11/2011 10:39:41		23/11/2011 10:39:39	Measure				1	Exported	90,5	Wh	
22/11/2011 10:39:41       Measure -         22/11/2011 10:39:41       Meas	22/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Measu	2/11/2011 10:39-41 Measure - 2/11/2011 10:39		23/11/2011 10:39:39	Measure				1	Exported	0	Wh	
23/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Meas	2)11/2011 10:39:41 Measure - 22)11/2011 10:39:41 Measure - 22)11/2	2)/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11		23/11/2011 10:39:41	Measure	-			1	Exported	0	Wh	
23/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Meas	23/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Meas	23/11/2011 10:39:41 Messure - 23/11/2011 10:39:41 Messure - 23/11/201 10:39:41 Messure - 23/11/201 Messure - 23/11/201 Messure		23/11/2011 10:39:41	Measure				1	Imported Inducti	42.6	VAh	
22/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Measu	22/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Measu	23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11		23/11/2011 10:39:41	Measure	-				Imported Inducti	42,6	VAh	
23/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Measu	23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11	2/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure -		23/11/2011 10:39:41	Measure	·				Imported Inducti	42,6	VAh	
23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/201 10:39:41 Measure - 23/11/2	23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/201 10:39:41 Measure - 23/11/201 10:39:41 Measure - 23/11/20	23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure -		23/11/2011 10:39:41	Measure		Ľ	GOSSEN N	IETRAWAT	Exported Inductiv	12/,/	VAh	
23/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Measu	23/11/2011 10:39:41       Measure -         23/11/2011 10:39:41       Measu	23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/201 10:39:41 Measure - 23/11/201 10:39:41 Measure - 23/11/20		23/11/2011 10:39:41	Measure	-			U180E	Exported Inductiv	0	VAh	
23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/201 10:39/11/2011 10:39/11/2011 10:39/11/2011 10:30/11/2011	23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - CE 1MDL400001	23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - Connected Copyright & GMC-1 Messtechnik GmbH 201		23/11/2011 10:39:41	Measure	-		M-Bu	STP	Exported Inductiv	0	VAh	
23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - West Connected Copyright & GMC-I Messtechnik GmbH 2011	23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - POWER © G ACT/ERR © C € 1M0L400001	23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - 23/11/2011 10:39:41 Measure - POWER © G ACTEER © C € 1M0L400001		23/11/2011 10:39:41	Measure					Exported Inductiv	0	VAh	
23/11/2011 10:39:41 Measure - POWER O G ACT/ERR O Connected Copyright © GMC-1 Messtechnik GmbH 2011	23/11/2011 10:39:41 Measure - POWER O G ACT/ERR O C € 1M0L400001	23/11/2011 10:39:41 Measure - POWER O C Connected Copyright © GMC-1 Messtechnik GmbH 201 C C 1M0L400001		23/11/2011 10:39:41	Measure		18	-	7	Imported Capacit	0	VAh	
ear POWER O G ACT/ERR O G ACT/ERR O Connected Copyright © GMC-1 Messtechnik GmbH 2011	Power Connected Copyright © GMC-1 Messtechnik GmbH 2011	Power Connected Copyright © GMC-1 Messtechnik GmbH 201		23/11/2011 10:39:41	Measure		A502	DEF		Imported Capacit	0	VAh	٣
POWER      POWER      Connected Copyright © GMC-1 Messtechnik GmbH 201:     Gr 14 Nol 400001	Power ●	Power      Power      Connected Copyright © GMC-1 Messtechnik GmbH 201     C      (          ( 1M0L400001         )         )         )					514			lear			
Connected Copyright © GMC-1 Messtechnik GmbH 201:	© Connected Copyright © GMC-1 Messtechnik GmbH 2011 © C€ 1M0L400001	C Connected Copyright © GMC-1 Messtechnik GmbH 201				- 68	1000	POWE	R				
G atter €	ਲੇ act∕err ♥ € 1M0L400001	G € 1MOL400001					000				• Con	nected Copyright © GMC-I Mess	stechnik GmbH 2011
C E 1001 400001	C€ 1M0L400001	€ € 1M0L400001					EC:	ACT/ER	R 🕘				
	e e imperson						C	E 1M01	400001				

# M-BUS Master

# **M-BUS**

Multilingual manual

November Edition 2011

#### Haftungsbegrenzung

Der Hersteller behält sich das Recht vor, jederzeit und ohne Vorankündung, das Gerät oder dessen in diesem Handbuch beschriebenen Spezifikationen zu ändern. Jede, auch die auszugsweise und nicht schriftlich vom Hersteller genehmigte Vervielfältigung des Handbuchs durch Fotokopie oder mit anderen Systemen auch elektronsicher Art, verletzt das Urheberrecht und wird strafrechtlich verfolgt.

Es ist strengstens verboten, das Gerät für andere Zwecke als die zu verwenden, für die es hergestellt wurde und die sich dem Inhalt des vorliegenden Handbuchs entnehmen lassen. Während der Anwendung der Funktionen des vorliegenden Geräts immer sicherstellen, dass alle Rechte sowie die Privatsphäre und die Rechte Dritter eingehalten werden.

AUSSER FÜR DIE GESETZLICH AUFERLEGTEN EINSCHRÄNKUNGEN HAFTET DER HERSTELLER IN KEINEM FALL FÜR SCHÄDEN, DIE AUS DEM PRODUKT RESULTIEREN UND ER ÜBERNIMMT KEINERLEI ANDEREN PFLICHTEN ODER HAFTUNGEN, ALS AUSDRÜCKLICH OBEN GENANNT UND BEFUGT AUCH KEINEN VERTRETER ODER ANDERE PERSON IN DIESEM SINNE.

Alle in diesem Handbuch genannten Marken sind Eigentum der jeweiligen Inhaber.

Die in diesem Handbuch enthaltenen Informationen dienen der Information und können ohne Vorankündigung verändert werden. Sie sind für den Hersteller nicht bindend. Der Hersteller haftet nicht für Fehler oder Unstimmigkeiten, die in diesem Handbuch vorhanden sein können.

Gedruckt in Italien.

#### **Limitation of Liability**

The Manufacturer reserves the right to modify the specifications in this manual without previous warning. Any copy of this manual, in part or in full, whether by photocopy or by other means, even of electronic nature, without the manufacture giving written authorisation, breaches the terms of copyright and is liable to prosecution.

It is absolutely forbidden to use the device for different uses other than those for which it has been devised for, as inferred to in this manual. When using the features in this device, obey all laws and respect privacy and legitimate rights of others.

EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW, UNDER NO CIRCUMSTANCES SHALL THE MANUFACTURER BE LIABLE FOR CONSEQUENTIAL DAMAGES SUSTAINED IN CONNECTION WITH SAID PRODUCT AND THE MANUFACTURER NEITHER ASSUMES NOR AUTHORIZES ANY REPRESENTATIVE OR OTHER PERSON TO ASSUME FOR IT ANY OBBLIGATION OR LIABILTY OTHER THAN SUCH AS IS EXPRESSLY SET FORTH HEREIN.

All trademarks in this manual are property of their respective owners.

The information contained in this manual is for information purposes only, is subject to changes without previous warning and cannot be considered binding for the Manufacturer. The Manufacturer assumes no responsability for any errors or incoherence possibly contained in this manual.

Printed in Italy.

#### Limitazione di responsabilità

Il Produttore si riserva il diritto di modificare, senza preavviso, le specifiche illustrate in questo manuale. Qualunque duplicazione del manuale, parziale o totale, non autorizzata per iscritto dal Produttore, ottenuta per fotocopiatura o con altri sistemi, anche di natura elettronica, viola le condizioni di copyright ed è giuridicamente perseguibile.

E' assolutamente proibito utilizzare il dispositivo per usi differenti da quelli per cui è stato costruito, desumibili dal contenuto del presente manuale. Durante l'uso delle funzioni del presente dispositivo, assicurarsi di rispettare tutte le leggi, nonchè la privacy ed i diritti altrui.

ECCETTO PER I LIMITI IMPOSTI DALLA LEGGE, IN NESSUN CASO IL PRODUTTORE SARA' RESPONSABILE PER DANNI DERIVANTI DAL PRODOTTO, NE' SI ASSUME O AUTORIZZA ALCUN RAPPRESENTANTE O ALTRA PERSONA AD ASSUMERSI QUALUNQUE OBBLIGO O RESPONSABILITA' DIVERSE DA QUELLE DICHIARATE ESPRESSAMENTE SOPRA.

Tutti i marchi, citati in questo manuale, sono proprietà dei rispettivi possessori.

Le informazioni contenute in questo manuale hanno unicamente scopo informativo, sono soggette a variazioni senza preavviso e non potranno venire considerate impegnative per il Produttore. Il Produttore non assume alcuna responsabilità per eventuali errori o incoerenze che possano essere contenuti nel manuale.

Stampato in Italia.

# BEDIENUNGSANLEITUNG Deutsch

# Inhaltsverzeichnis

1. Systemanforderungen und Installation	5
1.1 Systemanforderungen	5
1.2 Installation	5
1.3 Programm starten	5

Anwenden des Programms M-BUS Master6
2.1 Energiezähler automatisch hinzufügen7
2.2 Energiezähler manuell hinzufügen11
2.3 Energiezähler verwalten13
2.3.1. Geräteinformationen13
2.3.2. Einstellungen Gerät14
2.3.3. Gerätebefehle15
2.3.4. Gerätedaten
2.4 Energiezähler entfernen

## 1.1 Systemanforderungen

- Windows XP Service Pack 3, Windows 7 (32 64 Bit)
- Microsoft.NET Framework 3.5

#### **1.2 Installation**

Zur Installation der M-BUS MASTER Software starten Sie das Installationsprogramm mit der Datei **M-BUS Master Setup.exe**, die sich auf der beiliegenden CD ROM befindet. Bitte folgen Sie den angegeben Anweisungen zur Installation.

#### 1.3 Programm starten

Im Laufe der Installation erscheint das Programm-Icon auf dem Desktop. Starten Sie das Programm durch Doppelklick auf das Icon. Alternativ kann die Software durch Doppelklick auf die EXE-Datei (**M-BUS Master. exe**) gestartet werden, die sich in dem während der Installation generierten Verzeichnis befindet.

# 2. Anwenden des Programms M-BUS Master

Nach dem Start der Software, erscheint das folgende Fenster:



Bild 1 – Startseite der Software M-BUS MASTER



Fügt einen Energiezähler hinzu.

Entfernt bzw. löscht einen Energiezähler.

Deutsch •

Sprachauswahl der Bedienoberfläche (English, Deutsch, Italienisch, Französisch).



Blendet ein Info-Fenster ein mit den Angaben über den M-BUS MASTER (Version, Copyright).

# 2.1 Energiezähler automatisch hinzufügen

Der Abschnitt unten beschreibt, wie ein neuer mit einem M-BUS Modul gekoppelter Energiezähler automatisch hinzugefügt werden kann.

Wählen Sie in der Spalte links die Position **Setup Anwendung** aus. Die Parameter werden im Bild unten angezeigt.

M M-BUS Master V1.1	
Deutsch - 🕦	GOSSEN METRAWATT
<ul> <li>Setup Anwendung</li> <li>Netzwerkfunktionen</li> <li>Ather manuell hinzufüger</li> <li>Energiezähler</li> </ul>	Seriele Schnitstele Port 2400 • Anwenden
< >	Copyright © GMC-I Messtechnik GmbH 2011

Bild 2 – Einstellungen zur seriellen Kommunikation

Wählen Sie den PC-**COM-Port**, an dem das M-BUS Modul angeschlossen ist und die entsprechende Kommunikationsgeschwindigkeit (**Baudrate**) aus. Bestätigen Sie die Einstellungen mit der Taste **Anwenden**.

Nachdem Sie die seriellen Kommunikationsparameter eingestellt haben, müssen Sie die Position **Netzwerk durchsuchen** in der linken Spalte auswählen. Die folgenden Parameter werden angezeigt.

M M-BUS Master V1.1		
Deutsch - 1	4	GOSSEN METRAWATT
Setup Anwendung Netzwerkfunktionen Zähler manuell hinzufüge Energiezähler	Liste der erkannten Geräte Primäradresse Sekundäradresse Suche starten Suche beenden	Gerät hinzufügen
< >		Convright © GMC-I Messterhnik GmbH 2011

Bild 3 – Seite zur Zählersuche

Diese Seite dient zur Suche nach den Primäradressen, der an dem M-BUS-Netz angeschlossenen M-BUS -Module. Zum Starten der Suche nach M-BUS-Modulen drücken Sie die Taste **Suche starten**.

Nachdem die Suche nach Primäradressen beendet ist, führt der M-BUS MASTER eine Suche nach Sekundäradressen durch.



Bild 4 – Laufende Suche nach einem Gerät

Sofern ein Gerät am M-BUS MASTER gefunden wird, wird es in der **Liste der erkannten Geräte** angezeigt (Bild 5).

TML M-BUS Master V1.1		
Deutsch - 🕦 🤇		GOSSEN METRAWATT
Setup Anwendung Netzwerkfunktionen Zähler manuell hinzufüge Energiezähler	Liste der erkannten Geräte Primäradresse 1 0000001914A50202  Suche starten Suche beenden	Gerät hinzufügen
K		
		Copyright © GMC-I Messtechnik GmbH 2011

Bild 5 – Gerät wird mit automatischer Suche gefunden

Zum Stoppen der Suche nach Geräten drücken Sie die Taste **Suche beenden**.

Wählen Sie das hinzuzufügende Gerät aus und drücken Sie die Taste Gerät hinzufügen.

Ein neues Fenster wird danach angezeigt (Bild 6). Dieses Fenster dient zum Einstellen des Zählerstyps (einphasiger oder dreiphasiger Zähler) und der Zählerbezeichnung.



Bild 6 – Gerät hinzufügen

Wählen Sie den Zählertyp aus, stellen Sie die Zählerbezeichnung ein und drücken Sie die Taste **Einstellen**. Die Zählerbezeichnung wird dann in der linken Spalte unter dem Verzeichnis **Energiezähler** angezeigt.

# 2.2 Energiezähler manuell hinzufügen

Im Abschnitt unten ist beschrieben, wie ein neuer mit einem M-BUS Modul gekoppelter Energiezähler manuell hinzugefügt werden kann.

Wählen Sie in der Spalte links die Position **Zähler manuell hinzufügen** aus. Die Parameter im Bild unten werden angezeigt (Bild 7).

Ein neues M-BUS-Modul kann manuell, wie unten beschrieben, hinzugefügt werden:

- 1. Wählen Sie den Energiezählertyp (einphasiger oder dreiphasiger Zähler) aus.
- 2. Geben Sie die Bezeichnung, die Primäradresse, die ID-Nummer und den Firmwarestand ein.
- 3. Bestätigen Sie die Eingaben mit der Taste Gerät hinzufügen.

Nach dieser Vorgehensweise wird die Zählerbezeichnung in der linken Spalte unter dem Verzeichnis **Energiezähler** angezeigt.

M-BUS Master V1.1		user and the second sec	
Deutsch -			GOSSEN METRAWATT
Setup Anwendung Netzwerkfunktionen Zähler manuell hinzufüge Energiezähler	Gerät hinzufügen to add    I-phasig 3-phasig   Bezeichnung	Gerät hinzufügen	
			Copyright © GMC-I Messtechnik GmbH 2011

Bild 7 – Gerät manuell hinzufügen

Die Sekundäradresse besteht aus den folgenden Elementen. Neben Ausnahmen wird die Sekundäradresse auf dem Aufkleber des M-BUS-Moduls wie folgt angegeben.

Byte Nr.	Wert (Hex)	Beschreibung
1 – 4	XX XX XX XX	M-BUS Modul ID Nummer
5 – 6	XX XX	Hersteller ID
7	XX	M-BUS Modul Firmwarestand (00 – FF)
8	02	Kategorie: Elektrizität

In Bild 7 besteht die Sekundäradresse aus folgenden Elementen:

00000000	M-BUS Modul ID Nummer
182E	Hersteller ID
02	M-BUS Modul Firmwarestand
02	Kategorie: Elektrizität

#### 2.3 Energiezähler verwalten

Zur Verwaltung des Energiezählers sind 4 Registerseiten mit entsprechenden Tabs verfügbar (Geräteinformationen, Einstellungen Gerät, Gerätebefehle, Gerätedaten).

#### 2.3.1. Geräteinformationen

Wählen Sie in der linken Spalte den gewünschten Energiezähler aus und klicken Sie die Registerseite **Geräteinformationen** an.

Das angezeigte Fenster enthält die Informationen über das gewählte Gerät.

M M-BUS Master V1.1		
Deutsch - 🕦		GOSSEN METRAWATT
Setup Anwendung Netzwerkfunktionen Zähler manuell hinzufüger Geraete 1	Geräteinformationen       Einstellungen Gerät       Gerätebefehle       Gerätedaten         Gerätebezeichnung       Geratet1         Gerätetyp       3-phasig         Primäradresse       1         Sekundäradresse       1         Hersteller       14A5         Version       02         Typ       02	
		• Verbunden Copyright © GMC-I Messtechnik GmbH 2011

Bild 8 – Geräteinformationen

#### 2.3.2. Einstellungen Gerät

Wählen Sie in der linken Spalte den gewünschten Energiezähler aus (oder überprüfen Sie, ob dieser bereits angewählt ist) und klicken Sie auf die Registerseite Einstellungen Gerät.

Das angezeigte Fenster dient zur Auswahl der Aktualisierungsrate der Messwerte. Einstellbare Werte sind:

- Fortfahren: die Aktualisierung erfolgt fortlaufend.
- 10 sec.: die Aktualisierung erfolgt alle 10 Sekunden.
- 30 sec.: die Aktualisierung erfolgt alle 30 Sekunden.
- Einzelaufnahme: die Aktualisierung erfolgt nur einmal.
- Beenden: die Aktualisierung wird gestoppt.

M M-BUS Master V1.1	A STREET OF A	
Deutsch - 🕦		GOSSEN METRAWATT
Setup Anwendung Netzwerkfunktionen Zähler manuell hinzufüge Energiezähler Geraete_1	Geräteinformationen Einstellungen Gerät Gerätebefehle Gerätedaten Abfrageintervall Gerät Fortfahren 10 sec. 30 sec. Einzelaufnahme Beenden	Anvenden
	• V	erbunden Copyright © GMC-I Messtechnik GmbH 2011

Bild 9 – Einstellungen Gerät

#### 2.3.3. Gerätebefehle

Wählen Sie in der linken Spalte den gewünschten Energiezähler aus (oder überprüfen Sie, ob dieser bereits auswählt ist) und klicken Sie auf die Registerseite **Gerätebefehle**.

Das angezeigte Fenster dient zur Übertragung der Befehle zum Modul und Energiezähler.

Verfügbare Befehle sind:

- Primäradresse des Geräts einstellen
- Sekundäradresse des Geräts einstellen
- Baudrate des Geräts einstellen
- Energiezähler zurücksetzen
- Partial Energiezähler zurücksetzen
- Partial Energiezähler starten
- Partial Energiezähler stoppen
- Einstellen des Geräts auf veröffentlichte Daten

Jeder Befehl kann durch die Primär- oder Sekundäradresse zum M-BUS-Modul, abhängig von der durchgeführten Auswahl, übertragen werden (**Adressierungsart Befehle**).



Bild 10 – Befehle zum Gerät

WARNUNG: Der M-BUS MASTER wird eine Bestätigungsmeldung ausgeben, wenn der Befehl erfolgreich versendet worden ist; d. h. der Befehl richtig vom M-BUS-Modul empfangen wurde. Es ist jedoch nicht möglich festzustellen, ob der Befehl auch vom Zähler empfangen wurde.

WARNUNG: Nachdem der Befehl zum Einstellen der Kommunikationsgeschwindigkeit (Baudrate) zum M-BUS-Modul übertragen worden ist, ist es erforderlich, auf der Seite "Setup Anwendung" die Kommunikationsgeschwindigkeit der betriebenen seriellen Schnittstellen zu ändern.

Falls dies nicht innerhalb von 5 Minuten erfolgt und kein Befehl vom Modul innerhalb dieser 5 Minuten empfangen wird, wird die Kommunikationsgeschwindigkeit automatisch auf den vorherigen Wert eingestellt.

Bei Auswahl des Befehls **Einstellen des Geräts auf veröffentlichte Daten** wird das folgende Fenster angezeigt:

M M-BUS Master V1.1		20.55	11111	
Deutsch - 🕦	<b>←</b>			GOSSEN METRAWATT
<ul> <li>Setup Anwendung</li> <li>Netzwerkfunktionen</li> <li>Netzwerk durchsuchen</li> <li>Zähler manuell hinzufügei</li> <li>Energiezähler</li> <li>Geraete_1</li> </ul>	Geräteinformationen Ei Adressierungsart Befehle Befehl Profil publizierter Daten	nstellungen Gerät @ Primäradresse Cinstellen des Geräts auf veröffentlichte Du Standard Standard Energie T1 und T2 Tarif 1 Tarif 2 Summe Energie	daten ) Sekundäradresse aten •	
		Echtzeit Partial Wirk Blind Schein L1-L2, L2-L3 und L3-L1 2, Phase 3, Neutralleiter und System 1, Phase 2, Phase 3 und System Phase 2, Phase 3 und System Phase 2, Phase 3 und System 2 ase 1, Phase 2 und Phase 3 these 1, Phase 2 und Phase 3 to Bezug Phase 1, Phase 2 und Phase 3 to Bezug Phase 1, Phase 2 und Phase 3 to Abgabe Phase 1, Phase 2 und Phase 3 to Abgabe Phase 1, Phase 2 und Phase 3 Abgabe Phase 1, Phase 2 und Phase 3 Abgabe Phase 1, Phase 2 und Phase 3 Abgabe Phase 1, Phase 2 und Phase 3 Bezug Phase 1, Phase 2 und Phase 3 region Summe ase 1, Phase 2 und Phase 3 these 3 these 1, Phase 2 und Phase 3 these 3 t	Wirkenergie Bezug System         Wirkenergie Abgabe System         Scheinenergie Induktiv Bezug System         Scheinenergie Induktiv Bezug System         Scheinenergie Kapazitiv Bezug System         Blindenergie Kapazitiv Bezug System         Scheinenergie Bezug System         Scheinenergie Induktiv Bezug System         Scheinenergie Induktiv Abgabe System         Scheinenergie Induktiv Bezug System         Scheinenergie Induktiv Abgabe System	enden
			• Verbunde	n Copyright © GMC-I Messtechnik GmbH 2011

Bild 11 – Befehl zum Gerät: Einstellen des Geräts auf zu veröffentlichende Daten

Auf dieser Seite können die Messwerte ausgewählt werden, die auf der Seite **Gerätedaten** erscheinen sollen.

#### 2.3.4. Gerätedaten

Wählen Sie in der linken Spalte den gewünschten Energiezähler aus (oder überprüfen Sie, ob dieser bereits auswählt worden ist) und klicken Sie auf den Tab **Gerätedaten**.

Das zugehörige Fenster blendet die Messwerte ein, die zuvor auf der Seite **Gerätebefehle** ausgewählt wurden. Die Aktualisierung der Werte hängt von der Rate ab, die auf der Seite **Einstellungen Gerät** eingestellt wurde.

M M-BUS Master V1.1				1.	1	22	202			
Deutsch - 🕦	֥								GOSS	EN METRAWATT
Setup Anwendung	Geräteinformationen E	Einstellungen	Gerät	Gerätebefehle	Geräted	laten				
4 🧭 Netzwerkfunktionen						_				
Netzwerk durchsuchen	Zeit	Тур	Informati	on Energieart	Phase	Tarif	Messwert Typ	Messwert	Messwert Einheit	*
Zähler manuell hinzufüger	23/11/2011 10:37:02	Messwert	-	Blind	L1-N	-	Leistung	0	var	
Energiezanier	23/11/2011 10:37:02	Messwert	-	Blind	L2-N	-	Leistung	0	var	-
vg Genaete_1	23/11/2011 10:37:02	Messwert	-	Blind	L3-N	-	Leistung	0	var	=
	23/11/2011 10:37:02	Messwert	-	Blind	System	-	Leistung	0	var	
	23/11/2011 10:37:02	Messwert	-	-	-	-	Frequenz	50,01	Hz	
	23/11/2011 10:37:02	Messwert	-	-	-	-	Phasenfolge	-		
	23/11/2011 10:37:02	Messwert	-	Wirk	L1-N	Summe	Bezug	30,1	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L2-N	Summe	Bezug	30,1	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L3-N	Summe	Bezug	30,1	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	System	Summe	Bezug	90,3	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L1-N	Summe	Abgabe	0	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L2-N	Summe	Abgabe	0	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L3-N	Summe	Abgabe	0	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	System	Summe	Abgabe	0	Wh	
	23/11/2011 10:37:02	Messwert	-	Schein	L1-N	Summe	Bezug Induktiv	42,6	VAh	
	23/11/2011 10:37:02	Messwert	-	Schein	L2-N	Summe	Bezug Induktiv	42,6	VAh	
	23/11/2011 10:37:02	Messwert	-	Schein	L3-N	Summe	Bezug Induktiv	42,6	VAh	
	23/11/2011 10:37:02	Messwert	-	Schein	System	Summe	Bezug Induktiv	127,7	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L1-N	Summe	Abgabe Induktiv	0	VAh	
	23/11/2011 10:37:04	Messwert	2	Schein	L2-N	Summe	Abgabe Induktiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L3-N	Summe	Abgabe Induktiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	System	Summe	Abgabe Induktiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L1-N	Summe	Bezug Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L2-N	Summe	Bezug Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L3-N	Summe	Bezug Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	System	Summe	Bezug Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L1-N	Summe	Abgabe Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	12-N	Summe	Abgabe Kanazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	13-N	Summe	Ahgabe Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	System	Summe	Abgabe Kapazitiv	0	VAh	-
	2.5 11/2011 10:57:07	ricisiiicit		Jenem	Just	Li	öschen			
* III +										
								• Verb	unden Copyright © GM	C-I Messtechnik GmbH 2011

Bild 12 - Gerätedaten

WARNUNG: Die rot markierten Messwerte sind alt, d. h. die Kommunikation zwischen dem Modul und dem Zähler wurde unterbrochen: in der Statusleiste werden ein rotes Licht und die Meldung "Getrennt" eingeblendet.

# 2.4 Energiezähler entfernen

Ein Energiezähler kann im Programm entfernt bzw. gelöscht werden. Zunächst muss der Zähler durch Anklicken mit der rechten Maustaste ausgewählt werden. Anschließend wird dieser durch Drücken des Befehls Löschen (Bild 13) entfernt.

M M-BUS Master V1.1				100	5	2	100			- • ×
Deutsch - 🕦	÷-								GOSSEN ME	TRAWATT
Setup Anwendung	Geräteinformationen E	instellungen	Gerät	Gerätebefehle	Geräter	laten				
<ul> <li>Ø Netzwerkfunktionen</li> </ul>										
Netzwerk durchsuchen	Zeit	Тур	Informati	ion Energieart	Phase	Tarif	Messwert Typ	Messwert	Messwert Einheit	*
A C Epergiazähler	23/11/2011 10:37:02	Messwert	-	Blind	L1-N	-	Leistung	0	var	
Geraete 1	23/11/2011 10:37:02	Messwert	-	Blind	L2-N	-	Leistung	0	var	=
X Löschen	/2011 10:37:02	Messwert	-	Blind	L3-N	-	Leistung	0	var	
~	/2011 10:37:02	Messwert	-	Blind	System		Leistung	0	var	
	23/11/2011 10:37:02	Messwert	-	-	-	-	Frequenz	50,01	Hz	
	23/11/2011 10:37:02	Messwert	-	-	-	-	Phasenfolge	-	-	
	23/11/2011 10:37:02	Messwert	-	Wirk	L1-N	Summe	Bezug	30,1	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L2-N	Summe	Bezug	30,1	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L3-N	Summe	Bezug	30,1	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	System	Summe	Bezug	90,3	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L1-N	Summe	Abgabe	0	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L2-N	Summe	Abgabe	0	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	L3-N	Summe	Abgabe	0	Wh	
	23/11/2011 10:37:02	Messwert	-	Wirk	System	Summe	Abgabe	0	Wh	
	23/11/2011 10:37:02	Messwert	-	Schein	L1-N	Summe	Bezug Induktiv	42,6	VAh	
	23/11/2011 10:37:02	Messwert	-	Schein	L2-N	Summe	Bezug Induktiv	42,6	VAh	
	23/11/2011 10:37:02	Messwert	-	Schein	L3-N	Summe	Bezug Induktiv	42,6	VAh	
	23/11/2011 10:37:02	Messwert	-	Schein	System	Summe	Bezug Induktiv	127,7	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L1-N	Summe	Abgabe Induktiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L2-N	Summe	Abgabe Induktiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L3-N	Summe	Abgabe Induktiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	System	Summe	Abgabe Induktiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L1-N	Summe	Bezug Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L2-N	Summe	Bezug Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L3-N	Summe	Bezug Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	System	Summe	Bezug Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L1-N	Summe	Abgabe Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L2-N	Summe	Abgabe Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	L3-N	Summe	Abgabe Kapazitiv	0	VAh	
	23/11/2011 10:37:04	Messwert	-	Schein	System	Summe	Aboabe Kapazitiv	0	VAh	
						Là	öschen			
× III +										
								• Verb	unden Copyright © GMC-I Messt	echnik GmbH 2011

Bild 13 – Energiezähler löschen

# USER MANUAL English

# CONTENT

1	. Environment setup and installation	.21
	1.1 System requirements	.21
	1.2 Installation	.21
	1.3 Start the application	.21

2. Using M-BUS MASTER2	22
2.1 Add an energy counter by automatic procedure2	3
2.2 Add an energy counter by manual procedure2	27
2.3 Energy counter management2	.9
2.3.1. Device Information	29
2.3.2. Device Setup	30
2.3.3. Device Commands	31
2.3.4. Device Data	33
2.4 Remove an energy counter3	;4

## **1.1 System requirements**

- Windows XP Service Pack 3, Windows 7 (32 64 bit)
- Microsoft .NET Framework 3.5

#### **1.2 Installation**

To install this application, run the **M-BUS Master Setup.exe** installation package file, contained in the CD ROM. Follow the instructions shown on PC to install with success the application.

## 1.3 Start the application

To run the M-BUS MASTER, click on the desktop icon created during the installation process, or click the executable file (**M-BUS Master.exe**) contained in the folder selected during the installation process.

When M-BUS MASTER starts, the following page is displayed.

M M-BUS Master V1.1	
English - 🕕 🖏	GOSSEN METRAWATT
Application setup Network discover Add counter manually Energy counters	
	Copyright © GMC-I Messtechnik GmbH 2011

Pict. 1 – M-BUS Master Start Page



It allows to add an energy counter.



Remove the selected energy counter.



It allows to select the M-BUS MASTER language (English, German, Italian, French).



An information window about M-BUS MASTER (version, copyright) is displayed.

## 2.1 Add an energy counter by automatic procedure

The following description shows how to add a new energy counter combined to an M-BUS module by automatic procedure.

Click on **Application setup** item in the left column. The following parameters are shown.

M M-BUS Master V1.1	The first fi	
English - 🚺	<b>←</b>	GOSSEN METRAWATT
Application setup     Network functions     Network discover     Add counter manually     Energy counters	Serial port COM4 Baud rate 2400 C	
		Copyright © GMC-I Messtechnik GmbH 2011

Pict. 2 – Serial communication settings

Select the PC **Port** where the M-BUS module is connected and the relevant communication speed (**Baudrate**). Confirm with **Apply** key.

After serial port setup, click on **Network discover** item in the left column. The following parameters are shown.

M-BUS Master V1.1		1	
English - 🕦	÷	3	GOSSEN METRAWATT
Application setup Network functions Network discover Add counter manually Energy counters	List discovered devices Primary addre Secondary addre Start Discover Stop Discover	Add device	
		C	opyright © GMC-I Messtechnik GmbH 2011

Pict. 3 – Network discover page

In this page it is possible discovering the M-BUS communication module connected on the M-BUS network, by their primary address.

To start M-BUS modules searching, press **Start Discover** key.

After searching by primary address, M-BUS MASTER will start to search by secondary address.



Pict. 4 – Searching devices in progress

English

M-BUS Master V1.1			
English •	<b>₩</b>		GOSSEN METRAWATT
Application setup Network functions Add counter manually Energy counters	List discovered devices         Primary addre       Secondary address         1       0000001914A50202	Add device	
			Copyright © GMC-I Messtechnik GmbH 2011

Pict. 5 – One device has been founded by automatic research

To stop the M-BUS module searching, press **Stop Discover** key.

Select the device to be added and then press **Add device** key.

A popup window will appear (Pict. 6). In this window the energy counter nickname and type (Single phase or Three phase) should be choosen.



Pict. 6 – Add device

Select counter type, enter the nickname and then press **Set** key. The energy counter name will be displayed in the left column under the folder **Energy counters**.

#### 2.2 Add an energy counter by manual procedure

The following description shows how to add a new energy counter combined to an M-BUS module by manual procedure.

Click on **Add counter manually** item in the left column. The following parameters are shown (Pict. 7).

To add an M-BUS communication module manually, follow the instructions below:

- 1. Select the energy counter type (Single phase or Three phase)
- 2. Enter the Nickname, the Primary Address, the Identification Number and the Firmware Version of the device.
- 3. Confirm the choices by clicking on **Add Device** key.

After that, the energy counter name will be displayed in the left column under the folder **Energy counters**.

M M-BUS Master V1.1		
English - 🕦		GOSSEN METRAWATT
Application setup Network functions Network discover Add counter manually Energy counters	Device to add	Add device
Į		Copyright © GMC-I Messtechnik GmbH 201

Pict. 7 – Add energy counter manually

The Secondary Address is made as described below.

If there is no changes, the Secondary Address is shown on the label of the M-BUS communication module.

Byte Nr.	Value (Hex)	Description
1 – 4	XX XX XX XX	M-BUS Interface Identification Number
5 – 6	XX XX	Manufacturer's ID
7	ХХ	Version Number of M-BUS Interface Firmware (00 – FF)
8	02	Medium: Electricity

For example in Pict. 7 the Secondary Address is:

00000000	M-BUS Interface Identification Number
182E	Manufacturer ID
02	Firmware Version
02	Medium Number (Electricity)

# English

#### 2.3 Energy counter management

Four pages with relevant tab (**Device information**, **Device setup**, **Device commands**, **Device data**) are available for energy counter management.

#### 2.3.1. DEVICE INFORMATION

In the left column, select the desidered energy counter and then click on **Device information** tab. The following page will be displayed showing the information details on the connected device.

M-BUS Master V1.1		
English -	÷	GOSSEN METRAWATT
Application setup Network functions Network discover Add counter manually Energy counters Device 1	Device information       Device setup       Device commands       Device data         Device name       Device 1         Device type       3 phases         Primary address       1         Secondary address       Identification Number 00000019         Manufacturer       14A5         Version 02       Type 02	
		Connected Copyright © GMC-I Messtechnik GmbH 2011

Pict. 8 – Device information

#### 2.3.2. DEVICE SETUP

In the left column, select the desidered energy counter (or check if the device selection has already been made) and then click on **Device setup** tab.

The following page will be displayed showing the possibility to select the time interval for measurements refresh. Available settings:

- Continue: refresh is continuously.
- 10 sec. : refresh is made every 10 seconds.
- 30 sec. : refresh is made every 30 seconds.
  One shot: refresh is made once.
- Stop: refresh is stopped.

Image: Marting   Provided to set of the set o	M M-BUS Master V1.1	All second second	
Application setup     Add counter menally     Add counter menally     Device information     Device setup     Device onter     So     Counter     Apply	📕 📉 English 🛛 🔹 🕦		GOSSEN METRAWATT
Connected Copyright © GMC-I Messtechnik GmbH 2011	Application setup  Network functions Network discover Add counter manually  Finergy counters Device_1	Device information         Device setup         Device commands         Device data           Device enquiry period         Continue         Image: Continue	Apply
			Connected Copyright © GMC-1 Messtechnik GmbH 2011

Pict. 9 – Device setup

#### 2.3.3. DEVICE COMMANDS

In the left column, select the desidered energy counter (or check if the device selection has already been made) and then click on **Device commands** tab.

The following page will be displayed showing the possibility to send some commands to the M-BUS module and to the energy counter.

Available commands:

- Set device primary address
- Set device secondary address
- Set device baud rate
- Reset energy counter
- Reset partial energy counter
- Start partial energy counter
- Stop partial energy counter
- Set device published data

Each command can be sent by primary or secondary address of the M-BUS module, according to the selection (**Command addressing mode**).

M M-BUS Master V1.1		
English - 🕦		GOSSEN METRAWATT
Application setup Network functions Add counter manually Energy counters Device_1	Device information       Device setup       Device commands       Device data         Command <ul> <li>Primary address</li> <li>Set device primary address</li> <li>Set device primary address</li> <li>Set device primary address</li> <li>Set device baud rate</li> <li>Reset partial energy counter</li> <li>Stat partial energy counter</li> <li>Stat device published data</li> </ul>	Send

Pict. 10 – Device commands

ATTENTION: M-BUS Master will show a positive message if the command is sent with success; this means that the command has been received correctly by the M-BUS communication module, but it is not possible to detect if the command has been received by the energy counter too.

ATTENTION: After sending a command to change the baud rate of the MBUS communication module, it is necessary to go to "Application Setup" page and change the baud rate of the serial port in use. If this action is not performed within 5 minutes (and the M-BUS module doesn't receive any command for 5 minutes), the M-BUS communication module turns back to the old baud rate.

If **Set device published data** is selected, the following page will be displayed:

M M-BUS Master V1.1		10.2	m	
English •	÷.			GOSSEN METRAWATT
Application setup A Content of the functions Network discover	Device information De Command addressing m	vice setup Device commands Device de ode  Primary address	ata 🖉	
V₃ Add counter manually ▲ ♥ Energy counters	Command	Set device published data	•	
Device_1	Profile published data	Default	-	
	Select measures           Real Time           Voltage Phase 1, Pha           Voltage Line 12, Line           Current Phase 1, Pha           Power Factor Phase 1           Apparent Power Phase           Reactive Power Phase           Reactive Power Phase           Frequency           Phase Order           Total Energy Countee	Energy T1 and T2 Tariff 1 Total Energy Real time Partial Active Reactive Apparent Custom Is All Loss 2, Phase 3, Neutral and System 1, Phase 2, Phase 3 and System se 1, Phase 2, Phase 3 and System e 1, Phase 2, Phase 3 and System e 1, Phase 2, Phase 3 and System		end E
	Active Exported Phas Apparent Inductive II Apparent Inductive II Apparent Capacitive I Reactive Inductive In Reactive Inductive In Reactive Capacitive I Reactive Capacitive I Reactive Capacitive I All Apparent-Reactive Tariff 1 Energy Coun	e 1, Phase 2 and Phase 3 mported Phase 1, Phase 2 and Phase 3 imported Phase 1, Phase 2 and Phase 3 imported Phase 1, Phase 2 and Phase 3 proted Phase 1, Phase 2 and Phase 3 morted Phase 1, Phase 2 and Phase 3 morted Phase 1, Phase 2 and Phase 3 morted Phase 1, Phase 2 and Phase 3 imported Phase 3 imported Phase 1, Phase 2 and Phase 3 imported Phase	Active Exported System Apparent Inductive Imported System Apparent Inductive Exported System Apparent Capacitive Exported System Reactive Inductive Exported System Reactive Inductive Exported System Reactive Capacitive Exported System Reactive Capacitive Exported System	
	Active Imported Phas Active Exported Phas Apparent Inductive I Apparent Inductive E	se 1, Phase 2 and Phase 3 e 1, Phase 2 and Phase 3 mported Phase 1, Phase 2 and Phase 3 xported Phase 1, Phase 2 and Phase 3 monoted Phase 1, Phase 2 and Phase 3	Active Imported System     Active Exported System     Apparent Inductive Imported System     Apparent Inductive Exported System     Apparent Canaditive Imported System	
			Connected	Copyright © GMC-I Messtechnik GmbH 2011

Pict. 11 – Device commands: set device published data

In this page it is possible to select the measurements to be shown on **Device data** page.

#### 2.3.4. DEVICE DATA

In the left column, select the desidered energy counter (or check if the device selection has already been made) and then click on **Device data** tab.

The following page will be displayed showing the measurements selected by **Device commands** page. The measurements refresh changes according to the time interval selected in **Device setup** page.

M M-BUS Master V1.1				5.91		200			۲.
English • 🕦	<b>↔</b>							GOSSEN METRAWATT	
Application setup	Device information Dev	vice setup	Device commands D	evice data					
Network functions		-		D	T			Manager 19-24	
Add counter manually	11me	туре	Information Energy Ty	Phase	Tatal	Measure Type	value	Measure Unit	-
4 🧭 Energy counters	23/11/2011 10:39:39	measure	- Reactive	Phasez	Total	Exported Inductiv	0	varn	
Device_1	23/11/2011 10:39:39	Measure	- Reactive	Phase3	Total	Exported Inductiv	0	varh	E
	23/11/2011 10:39:39	Measure	- Reactive	Dhacat	Total	Exported Inductiv	0	varh	
	23/11/2011 10:39:39	Measure	- Reactive	Phase2	Total	Imported Capacit	0	varh	
	23/11/2011 10:39:39	Meacure	- Reactive	Phace3	Total	Imported Capacit	0	varh	
	23/11/2011 10:39:39	Measure	- Reactive	System	Total	Imported Capacit	0	varh	
	23/11/2011 10:39:39	Measure	- Reactive	Phase1	Total	Exported Canacit	0	varh	
	23/11/2011 10:39:39	Measure	- Reactive	Phase2	Total	Exported Capacit	0	varh	
	23/11/2011 10:39:39	Measure	- Reactive	Phase3	Total	Exported Capacit	0	varb	
	23/11/2011 10:39:39	Measure	- Reactive	System	Total	Exported Capacit	0	varb	
	23/11/2011 10:39:39	Measure	- Active	Phase1	Tariff 1	Imported	30.1	Wh	
	23/11/2011 10:39:39	Measure	- Active	Phase2	Tariff 1	Imported	30.1	Wh	
	23/11/2011 10:39:39	Measure	- Active	Phase3	Tariff 1	Imported	30,1	Wh	
	23/11/2011 10:39:39	Measure	- Active	System	Tariff 1	Imported	90,3	Wh	
	23/11/2011 10:39:39	Measure	- Active	Phase1	Tariff 1	Exported	0	Wh	
	23/11/2011 10:39:39	Measure	- Active	Phase2	Tariff 1	Exported	0	Wh	
	23/11/2011 10:39:41	Measure	- Active	Phase3	Tariff 1	Exported	0	Wh	
	23/11/2011 10:39:41	Measure	- Active	System	Tariff 1	Exported	0	Wh	
	23/11/2011 10:39:41	Measure	- Apparent	Phase1	Tariff 1	Imported Inducti	42,6	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	Phase2	Tariff 1	Imported Inducti	42,6	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	Phase3	Tariff 1	Imported Inducti	42,6	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	System	Tariff 1	Imported Inducti	127,7	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	Phase1	Tariff 1	Exported Inductiv	0	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	Phase2	Tariff 1	Exported Inductiv	0	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	Phase3	Tariff 1	Exported Inductiv	0	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	System	Tariff 1	Exported Inductiv	0	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	Phase1	Tariff 1	Imported Capacit	0	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	Phase2	Tariff 1	Imported Capacit	0	VAh	
	23/11/2011 10:39:41	Measure	- Apparent	Phase3	Tariff 1	Imported Capacit	0	VAh	*
						Clear			
							• Con	nected Copyright © GMC-I Messtechnik GmbH 20	011

Pict. 12 – Device data

ATTENTION: Data displayed in red is old data and it means that there is no communication between the M-BUS module and the energy counter: a red LED and "Disconnected" will be shown on the status bar.

## 2.4 Remove an energy counter

It is possible to disconnect an energy counter by removing it.

The energy counter removal can be carried out by selecting the energy counter to be removed, right click on it and then press the **Delete** button just shown (Pict. 13).

M. M-BUS Master V1.1				144	33	200				
English - 🕦	<₽								GOSSEN METRA	AWATT
Application setup	Device information Dev	vice setup	Device command	Device dat	a					
Network functions	Time	Type	Information Energy	v Tv Dhace	Tariff	Measure Type	Value	Measure Unit		
Add counter manually	23/11/2011 10:40:13	Measure	- Rea	tive Phase?	Total	Exported Induction	value	varb		
<ul> <li>Chergy counters</li> </ul>	23/11/2011 10:40:13	Measure	- Dear	tive Phace3	Total	Exported Induction	0	varh		
Va Device_1	/11/2011 10:40:13	Measure	- Rear	tive System	Total	Exported Inductiv	0	varh		=
X Delete	/11/2011 10:40:13	Measure	- Rea	tive Phase1	Total	Imported Canacit	0	varh		
	23/11/2011 10:40:13	Measure	- Rea	tive Phase2	Total	Imported Capacit	0	varh		
	23/11/2011 10:40:13	Measure	- Rea	tive Phase3	Total	Imported Canacit	0	varh		
	23/11/2011 10:40:13	Measure	- Rea	tive System	Total	Imported Capacit	0	varh		
	23/11/2011 10:40:13	Measure	- Rea	tive Phase1	Total	Exported Capacit	0	varh		
	23/11/2011 10:40:13	Measure	- Rea	tive Phase2	Total	Exported Capacit	0	varh		
	23/11/2011 10:40:13	Measure	- Rea	tive Phase3	Total	Exported Capacit	0	varh		
	23/11/2011 10:40:13	Measure	- Rea	tive System	Total	Exported Capacit	0	varh		
	23/11/2011 10:40:13	Measure	- Activ	e Phase1	Tariff 1	Imported	30,1	Wh		
	23/11/2011 10:40:13	Measure	- Activ	e Phase2	Tariff 1	Imported	30,1	Wh		
	23/11/2011 10:40:13	Measure	- Activ	e Phase3	Tariff 1	Imported	30,1	Wh		
	23/11/2011 10:40:13	Measure	- Activ	e System	Tariff 1	Imported	90,3	Wh		
	23/11/2011 10:40:13	Measure	- Activ	e Phase1	Tariff 1	Exported	0	Wh		
	23/11/2011 10:40:13	Measure	- Activ	e Phase2	Tariff 1	Exported	0	Wh		
	23/11/2011 10:39:58	Measure	- Activ	e Phase3	Tariff 1	Exported	0	Wh		
	23/11/2011 10:39:58	Measure	- Activ	e System	Tariff 1	Exported	0	Wh		
	23/11/2011 10:39:58	Measure	- App	reni Phase1	Tariff 1	Imported Inducti	42,6	VAh		
	23/11/2011 10:39:58	Measure	- App	rent Phase2	Tariff 1	Imported Inducti	42,6	VAh		
	23/11/2011 10:39:58	Measure	- App	reni Phase3	Tariff 1	Imported Inducti	42,6	VAh		
	23/11/2011 10:39:58	Measure	- App	reni System	Tariff 1	Imported Inducti	127,7	VAh		
	23/11/2011 10:39:58	Measure	- App	reni Phase1	Tariff 1	Exported Inductiv	0	VAh		
	23/11/2011 10:39:58	Measure	- App	reni Phase2	Tariff 1	Exported Inductiv	0	VAh		
	23/11/2011 10:39:58	Measure	- App;	reni Phase3	Tariff 1	Exported Inductiv	0	VAh		
	23/11/2011 10:39:58	Measure	- App	reni System	Tariff 1	Exported Inductiv	0	VAh		
	23/11/2011 10:39:58	Measure	- App	reni Phase1	Tariff 1	Imported Capacit	0	VAh		
	23/11/2011 10:39:58	Measure	- App	reni Phase2	Tariff 1	Imported Capacit	0	VAh		
	23/11/2011 10:39:58	Measure	- App	reni Phase3	Tariff 1	Imported Capacit	0	VAh		*
						Clear				
							• Con	nected Copyrig	ht © GMC-I Messtechni	ik GmbH 2011

Pict. 13 – Removing an energy counter

# MANUALE D'USO Italiano

# SOMMARIO

1.	Requisiti di sistema e installazione	.37
,	1.1 Requisisti di sistema	.37
,	1.2 Installazione	.37
,	1.3 Avviare l'applicazione	.37

2. Utilizzare M-BUS MASTER
2.1 Aggiungere un contatore di energia automaticamente39
2.2 Aggiungere un contatore di energia manualmente43
2.3 Gestire il contatore di energia45
2.3.1. INFORMAZIONI STRUMENTO45
2.3.2. IMPOSTAZIONI STRUMENTO46
2.3.3. COMANDI STRUMENTO47
2.3.4. DATI STRUMENTO
2.4 Rimuovere un contatore di energia50

## 1.1 Requisisti di sistema

- Windows XP Service Pack 3, Windows 7 (32 64 bit)
- Microsoft .NET Framework 3.5

## 1.2 Installazione

Per installare l'applicazione, avviare il file d'installazione **M-BUS Master Setup.exe** incluso nel CD ROM. Seguire la procedura guidata per installare correttamente l'applicazione.

## 1.3 Avviare l'applicazione

Per avviare M-BUS MASTER, cliccare sull'icona del desktop creata durante il processo d'installazione, oppure fare doppio click sul file di esecuzione (**M-BUS Master.exe**) contenuto nella cartella generata durante il processo d'installazione.

# 2. Utilizzare M-BUS MASTER

Dopo l'avvio di M-BUS MASTER, viene visualizzata la seguente finestra.

TML M-BUS Master V1.1	
Italiano - 🕕 🕂	GOSSEN METRAWATT
<ul> <li>Impostazioni programma</li> <li>Punzioni di rete</li> <li>Ricerca contatori</li> <li>Aggiungi contatore</li> <li>Contatori</li> </ul>	
	Copyright © GMC-I Messtechnik GmbH 2011

Fig. 1 – Pagina inziale di M-BUS MASTER



Consente di aggiungere un contatore di energia.

Rimuove il contatore di energia selezionato.

 $\geq$ 

Italiano 🔹

Consente di selezionare la lingua di M-BUS MASTER (Inglese, Tedesco, Italiano, Francese).



Viene visualizzata una finestra d'informazioni su M-BUS MASTER (versione, copyright).

## 2.1 Aggiungere un contatore di energia automaticamente

La seguente descrizione mostra come aggiungere, in modo automatico, un nuovo contatore di energia abbinato ad un modulo M-BUS.

Nella colonna a sinistra selezionare la voce **Impostazioni programma**. Verrano visualizzati i seguenti parametri.

M M-BUS Master V1.1		
Italiano - 🚺	<b>←</b>	GOSSEN METRAWATT
<ul> <li>Impostazioni programma</li> <li>Funzioni di rete</li> <li>Ricerca contatori</li> <li>Aggiungi contatore</li> <li>Contatori</li> </ul>	Porta seriale Porta COM4 • Velocità 2400 •	
	·	Copyright © GMC-I Messtechnik GmbH 2011

Fig. 2 – Impostazioni per la comunicazione seriale

Selezionare la **Porta** del PC dove il modulo M-BUS è connesso e la **Velocità** di comunicazione relativa (Baudrate). Confermare con il tasto **Applica**. Dopo aver effettuato le impostazioni di comunicazione seriale, selezionare la voce **Ricerca contatori** nella colonna sinistra. Verrano visualizzati i seguenti parametri.

M M-BUS Master V1.1	The second se	
Italiano - 🕦	4	GOSSEN METRAWATT
Impostazioni programma Funzioni di rete Aggiungi contatore Contatori	Lista dispositivi rilevati Indirizzo primi Indirizzo seconda Indirizzo primi Fine ricerca	Aggiungi
		Copyright © GMC-I Messtechnik GmbH 2011

Fig. 3 – Pagina Ricerca contatori

In questa pagina è possibile ricercare, tramite indirizzo primario, i moduli M-BUS connessi alla rete M-BUS. Per avviare la ricerca dei moduli M-BUS, premere il tasto **Inizio ricerca**. Dopo aver effettuato la ricerca tramite indirizzo primario, M-BUS MASTER inizierà a ricercare tramite indirizzo secondario.

M M-BUS Master V1.1			x
Italiano - 🚺		GOSSEN METRAWAT	ГТ
Impostazioni programma Funzioni di rete Ricerca contatori Aggiungi contatore Contatori	Lista dispositivi rilevati Indirizzo primi Indirizzo seconde	Aggiungi	
	Inizio ricerca Fine ricerca Ricerca dispositivo con indirizzo primario 0		4 2011

Fig. 4 – Ricerca dispositivi in corso

M M-BUS Master V1.1			
📑 🔀 Italiano 🛛 🝷 🕦	<b>4</b>		GOSSEN METRAWATT
Italiano	Lista dispositivi rilevati Indirizzo primi Indirizzo secondario 1 0000001914A50202 Inizio ricerca Fine ricerca	Aggiungi	GOSSEN METRAWATT
· · · · · · · · · · · · · · · · · · ·			Copyright © GMC-I Messtechnik GmbH 2011

Fig. 5 – Un dispositivo trovato tramite ricerca automatica

Per fermare la ricerca di dispositivi, premere il tasto **Fine ricerca**.

Selezionare il dispositivo da aggiungere e premere il tasto Aggiungi.

Verrà visualizzata una nuova finestra (Fig. 6). In questa finestra è possibile selezionare il tipo di contatore (Monofase o Trifase) e inserire il nome del dispositivo.



Fig. 6 – Aggiungi dispositivo

Selezionare il tipo di contatore, inserire il nome e premere il tasto **Imposta**. Il nome del contatore verrà visualizzato nella colonna sinistra, sotto alla cartella **Contatori**.

## 2.2 Aggiungere un contatore di energia manualmente

La seguente descrizione mostra come aggiungere, in modo manuale, un nuovo contatore di energia abbinato ad un modulo M-BUS.

Nella colonna a sinistra selezionare la voce Aggiungi contatore. Verrano visualizzati i seguenti parametri (Fig. 7).

Per aggiungere manualmente un modulo di comunicazione M-BUS, seguire le istruzioni riportate qui sotto:

- 1. Selezionare il tipo di contatore di energia (Monofase o Trifase).
- 2. Inserire il Nome, l'Indirizzo primario, l'Identificativo e la Versione firmware del dispositivo.
- 3. Confermare le scelte premendo il tasto **Aggiungi**.

Dopo questa procedura, il nome del contatore verrà visualizzato nella colonna sinistra, sotto alla cartella **Contatori**.

M M-BUS Master V1.1		
Italiano - 🕦	4 ·	GOSSEN METRAWATT
Impostazioni programma Funzioni di rete Ricerca contatori Aggiungi contatore Contatori	Strumento da aggiungere <ul> <li>Monofase</li> <li>Trifase</li> </ul> Nome             Indirizzo primario             Identificativo         IDA3           Costruttore         IDA3           Versione         IDA3           Tipo         02	ggiungi
		Copyright © GMC-I Messtechnik GmbH 2011

Fig. 7 – Aggiungi dispositivo manualmente

L'indirizzo secondario è composto come segue. Se non ci sono modifiche, l'indirizzo secondario è mostrato sull'etichetta del modulo M-BUS.

Nr. Byte	Valore (Hex)	Descrizione
1 – 4	XX XX XX XX	Numero identificativo dell'interfaccia M-BUS
5 – 6	XX XX	ID del Produttore
7	XX	Versione firmware dell'interfaccia M-BUS (00 – FF)
8	02	Categoria: Elettricità

Ad esempio in Fig. 7 l'indirizzo secondario è composto da:

00000000	Numero identificativo dell'interfaccia M-BUS
182E	ID del Produttore
02	Versione firmware
02	Numero categoria (Elettricità)

## 2.3 Gestire il contatore di energia

Per la gestione del contatore di energia sono disponibili quattro pagine con relative linguette (**Informazioni** strumento, **Impostazioni strumento**, **Comandi strumento**, **Dati strumento**).

#### 2.3.1. INFORMAZIONI STRUMENTO

Nella colonna sinistra selezionare il contatore desiderato e cliccare sulla linguetta **Informazioni strumento**. Verrà visualizzata la seguente pagina contenente i dettagli sul dispositivo connesso.

M-BUS Master V1.1		
Italiano - 🕦	4 <b>1</b>	GOSSEN METRAWATT
Impostazioni programma Funzioni di rete Agiungi contatore Contatori Dispositivo_1	Informazioni strumento         Impostazioni strumento         Comandi strumento         Dati strumento           Nome strumento         3 fasi         Indirizzo primario         1           Indirizzo secondario         Identificativo         00000019         Costruttore         14A5           Versione         02         Tipo         02         Tipo         02	
		Connesso Copyright © GMC-I Messtechnik GmbH 2011

Fig. 8 – Informazioni strumento

#### 2.3.2. IMPOSTAZIONI STRUMENTO

Nella colonna sinistra selezionare il contatore desiderato (oppure verificare se è già selezionato) e cliccare sulla linguetta **Impostazioni strumento**.

Verrà visualizzata la seguente pagina che consente di selezionare la cadenza per l'aggiornamento dei dati di misura.

Impostazioni possibili:

- Continuo: l'aggiornamento è continuo.
- 10 sec.: l'aggiornamento viene effettuato ogni 10 secondi.
- 30 sec.: l'aggiornamento viene effettuato ogni 30 secondi.
- Una volta: l'aggiornamento viene effettuato una volta sola.
- Stop: l'aggiornamento viene fermato.

M M-BUS Master V1.1			1000				
Italiano - 🕦	<b>←</b>					GOSSEN MET	RAWATT
Italiano	Informazioni strumento Periodo interrogazione	Impostazioni strumento Continuo 10 sec. Una volta Stop	Comandi strumento	Dati strumento		GOSSEN MET	TRAWATT
					Connesso	Copyright © GMC-I Messte	chnik GmbH 2011

Fig. 9 – Impostazioni strumento

#### 2.3.3. COMANDI STRUMENTO

Nella colonna sinistra selezionare il contatore desiderato (oppure verificare se è già selezionato) e cliccare sulla linguetta **Comandi strumento**.

Verrà visualizzata la seguente pagina che consente di inviare comandi al modulo M-BUS e al contatore di energia.

Comandi possibili:

- Imposta indirizzo primario
- Imposta indirizzo secondario
- Imposta baud rate
- Resetta contatore energia
- Resetta contatore parziale energia
- Attiva contatore parziale energia
- Disattiva contatore parziale energia
- Imposta dati pubblicati

Ogni comando può essere inviato tramite indirizzo primario o secondario del modulo M-BUS, a seconda della selezione effettuata (**Modalità indirizzamento comandi**).



Fig. 10 – Comandi strumento

ATTENZIONE: M-BUS Master darà un messaggio positivo in caso di comando inviato con successo; questo significa che il comando è stato ricevuto correttamente dal modulo di comunicazione M-BUS, ma non è possibile rilevare se il comando è stato ricevuto anche dal contatore.

ATTENZIONE: Dopo aver inviato il comando per la programmazione della velocità di comunciazione (baud rate) del modulo M-BUS, è necessario andare sulla pagina "Impostazioni programma" e modificare la velocità di comunicazione (baud rate) della porta seriale in uso. Se quest'azione non viene effettuata entro 5 minuti (e il modulo M-BUS non riceve nessun comando entro questi 5 minuti), la velocità di comunicazione viene automaticamente reimpostata al valore precedente.

Selezionando la voce Imposta dati pubblicati, viene visualizzata la seguente finestra.



Fig. 11 – Comandi strumento: imposta dati pubblicati

In questa pagina è possibile selezionare le misure che saranno mostrate nella pagina Dati strumento.

#### 2.3.4. DATI STRUMENTO

Nella colonna sinistra selezionare il contatore desiderato (oppure verificare se è già selezionato) e cliccare sulla linguetta **Dati strumento**.

Verrà visualizzata la seguente pagina che mostra i dati delle misure selezionate nella pagina **Comandi** strumento.

L'aggiornamento dei dati cambia a seconda della cadenza programmata nella pagina **Impostazioni** strumento.

M M-BUS Master V1.1				1	5	20	200				×
Italiano - 🕦 🤆	<b>↔</b>									GOSSEN METRAWA	TΤ
Impostazioni programma	Informazioni strumento	Imposta	zioni strumento	Comano	li strumer	to Dati	strumento				
<ul> <li>Funzioni di rete</li> <li>Ricerca contatori</li> </ul>	0	Tine	Information	Tine Frees	Ener	Tariffa	Tine Minun	Valera	Hatha Mission		
Aggiungi contatore	22/11/2011 10:41:50	Micuro	11101111021011		Cictore:	Tariffa	Esportata Capacil	valure	WAL MISURA		
4 🧭 Contatori	23/11/2011 10:41:59	Misura	-	Apparen	Sistema	Tariffa	Esportata Capaci	20.1	VAII		
Dispositivo_1	23/11/2011 10:41:59	Micura		Deattiva	Face?	Tariffa	Importata Indutti	30,1	varh		E
	23/11/2011 10:41:59	Micura	-	Deattiva	Face3	Tariffa	Importata Indutti	30,1	varh		
	23/11/2011 10:41:59	Micura		Deattiva	Cictam:	Tariffa	Importata Indutti	90.3	varh		
	22/11/2011 10:41:50	Misura	2	Deatting	Sisteme Escol	Tariffa	Esportata Indutti	50,5	varh		
	23/11/2011 10:41:59	Micura		Deattiva	Face?	Tariffa	Esportata Indutti	0	varh		
	23/11/2011 10:41:59	Misura		Reattiva	Face3	Tariffa	Esportata Indutti	0	varh		
	23/11/2011 10:41:59	Misura		Reattiva	Sistem:	Tariffa	Esportata Indutti	0	varh		
	23/11/2011 10:41:59	Micura		Peattiva	Face1	Tariffa	Importata Canaci	0	varh		
	23/11/2011 10:41:59	Misura		Reattiva	Fase2	Tariffa	Importata Capaci	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase3	Tariffa	Importata Canaci	0	varh		
	23/11/2011 10:41:59	Micura		Deattiva	Sistem:	Tariffa	Importata Capaci	0	varh		
	23/11/2011 10:41:59	Misura		Reattiva	Ease1	Tariffa	Esportata Canacil	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase2	Tariffa	Esportata Capacit	0	varh		
	23/11/2011 10:41:59	Misura		Reattiva	Fase3	Tariffa	Esportata Capacit	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Sistem:	Tariffa	Esportata Canacil	0	varh		
	23/11/2011 10:41:44	Misura		Attiva	Fase1	Tariffa :	Importata	0	Wh		
	23/11/2011 10:41:44	Misura		Attiva	Fase2	Tariffa :	Importata	0	Wh		
	23/11/2011 10:41:44	Misura	-	Attiva	Ease3	Tariffa	Importata	0	Wh		
	23/11/2011 10:41:44	Misura	-	Attiva	Sistema	Tariffa :	Importata	0	Wh		
	23/11/2011 10:41:44	Misura	-	Attiva	Fase1	Tariffa :	Esportata	0	Wh		
	23/11/2011 10:41:44	Misura		Attiva	Fase2	Tariffa :	Esportata	0	Wh		
	23/11/2011 10:41:44	Misura	-	Attiva	Fase3	Tariffa :	Esportata	0	Wh		
	23/11/2011 10:41:44	Misura	-	Attiva	Sistem?	Tariffa :	Esportata	0	Wh		
	23/11/2011 10:41:44	Misura	-	Apparent	Fase1	Tariffa :	Importata Indutti	0	VAh		
	23/11/2011 10:41:44	Misura	-	Apparent	Fase2	Tariffa :	Importata Indutti	0	VAh		
	23/11/2011 10:41:44	Misura	-	Apparent	Fase3	Tariffa :	Importata Indutti	0	VAh		
	23/11/2011 10:41:44	Misura		Apparent	Sistema	Tariffa :	Importata Indutti	0	VAh		
	23/11/2011 10:41:44	Misura	-	Apparent	Fase1	Tariffa :	Esportata Indutti	0	VAh		-
						С	ancella				
								• Cor	nesso Copy	right © GMC-I Messtechnik Gml	bH 2011

Fig. 12 – Dati strumento

ATTENZIONE: i dati visualizzati in rosso sono vecchi e indicano che non vi è più comunicazione tra il modulo M-BUS e il contatore: sulla barra di stato viene mostrato un LED rosso e la scritta "Non connesso".

# 2.4 Rimuovere un contatore di energia

E' possibile sconnettere un contatore di energia effettuandone la rimozione.

Per rimuovere un contatore di energia selezionare il contatore da rimuovere, fare click destro e premere il tasto visualizzato **Rimuovi** (Fig. 13).

M. M-BUS Master V1.1				1	5	2	22				<b>- </b>
Italiano 🔹 🕦	<b>←</b>								-	GOSSEN MET	TRAWATT
Impostazioni programma	Informazioni strumento	Imposta	zioni strumento	Comano	li strumer	nto Dati	strumento				
Ricerca contatori	Ora	Tipo	Informazion	Tipo Enerc	Fase	Tariffa	Tipo Misura	Valore	Unità Misura		
S Aggiungi contatore	23/11/2011 10:41:59	Misura	-	Apparent	Sistema	Tariffa	Esportata Capacil	0	VAh		
4 🧭 Contatori	23/11/2011 10:41:59	Misura	-	Reattiva	Fase1	Tariffa	Importata Indutti	30.1	varh		
Và Dispositivo_1	11 10:41:59	Misura	-	Reattiva	Fase2	Tariffa	Importata Indutti	30,1	varh		=
Kindovi	11 10:41:59	Misura	-	Reattiva	Fase3	Tariffa :	Importata Indutti	30,1	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Sistema	Tariffa	Importata Indutti	90,3	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase1	Tariffa :	Esportata Indutti	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase2	Tariffa :	Esportata Indutti	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase3	Tariffa :	Esportata Indutti	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Sistema	Tariffa 🗄	Esportata Indutti	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase1	Tariffa :	Importata Capaci	0	varh		
	23/11/2011 10:41:59	Misura	1.5	Reattiva	Fase2	Tariffa :	Importata Capaci	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase3	Tariffa	Importata Capaci	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Sistema	Tariffa :	Importata Capaci	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase1	Tariffa	Esportata Capacil	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase2	Tariffa :	Esportata Capacil	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Fase3	Tariffa	Esportata Capacil	0	varh		
	23/11/2011 10:41:59	Misura	-	Reattiva	Sistema	Tariffa	Esportata Capacit	0	varh		
	23/11/2011 10:42:01	Misura	-	Attiva	Fase1	Tariffa :	Importata	0	Wh		
	23/11/2011 10:42:01	Misura	-	Attiva	Fase2	Tariffa :	Importata	0	Wh		
	23/11/2011 10:42:01	Misura	-	Attiva	Fase3	Tariffa :	Importata	0	Wh		
	23/11/2011 10:42:01	Misura	-	Attiva	Sistema	Tariffa :	Importata	0	Wh		
	23/11/2011 10:42:01	Misura	-	Attiva	Fase1	Tariffa :	Esportata	0	Wh		
	23/11/2011 10:42:01	Misura	-	Attiva	Fase2	Tariffa :	Esportata	0	Wh		
	23/11/2011 10:42:01	Misura	-	Attiva	Fase3	Tariffa :	Esportata	0	Wh		
	23/11/2011 10:42:01	Misura	-	Attiva	Sistema	Tariffa :	Esportata	0	Wh		
	23/11/2011 10:42:01	Misura	-	Apparent	Fase1	Tariffa :	Importata Indutti	0	VAh		
	23/11/2011 10:42:01	Misura	-	Apparent	Fase2	Tariffa :	Importata Indutti	0	VAh		
	23/11/2011 10:42:01	Misura	-	Apparent	Fase3	Tariffa :	Importata Indutti	0	VAh		
	23/11/2011 10:42:01	Misura	-	Apparent	Sistema	Tariffa :	Importata Indutti	0	VAh		-
	23/11/2011 10:42:01	Misura	-	Apparent	Fase1	Tariffa :	Esportata Indutti	0	VAh		
						C	ancella				
								• Cor	nesso Copyr	ight © GMC-I Messte	chnik GmbH 2011

Fig. 13 – Rimuovere un contatore di energia

Edited in Germany • Subject to change without notice • A pdf version is available on the Internet



GMC-I Messtechnik GmbH Südwestpark 15 90449 Nürnberg • Germany Phone +49 911 8602-111 Telefax +49 911 8602-777 E-Mail info@gossenmetrawatt.com www.gossenmetrawatt.com