

Additional Instructions

MHC-1 J1939

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1. Quick Start Guide

- Connect the CAN interface to your PC (e.g. PEAK PCAN-USB) and to the pressure transmitter and start the CAN-Software (e.g. PEAK PCAN-View).
- When the MHC-1 is powered up it sends an Address-Claimed-Message
e.g.

ID	DLC	Data
18EEFF80	8	Device Name 90 01 80 38 78 56 34 92

Further details see chapter 2. Network Management.

- After that the MHC-1 starts sending measured values
Further details see chapter 4. Supported PGN/SPN.
- The configuration can be changed with EasyCom J1939 software.
Further details see chapter 3. EasyCom J1939.

2. Network Management

2.1 Device Name

AAC	Industry Group	Vehicle System Instance	Vehicle System	Res.	Function	Function Instance	ECU Instance	Manufacturer Code	Identity Number
1 bit	3 bit	4 bit	7 bit	1 bit	8 bit	5 bit	3 bit	11 bit	21 bit

Manufacturer Code: 452_{dez}
Identity Number: unique serial number

2.2 CAN-Identifier

Priority	Res.	Data Page	PDU Format	PDU Specific	Source Address
3 bit	1 bit	1 bit	8 bit	8 bit	8 bit

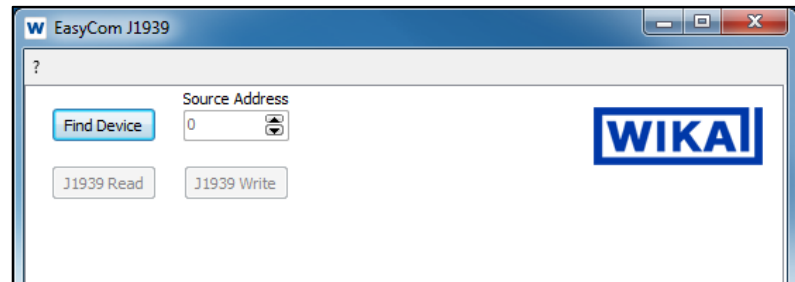
3. EasyCom J1939

3.1 System requirements

- Microsoft® operating system (Microsoft® Windows® XP, Microsoft® Windows® 7)
- PCAN-USB CAN-Interface (PEAK-System Technik GmbH)

3.2 Main Window

After pressing the button **“Find Device”** the software waits for 5 seconds to receive an “Address Claimed” message. Within that time the user has to connect the pressure transmitter.



If an „Address Claimed“ message is received, the address of the connected pressure transmitter is displayed. By pressing the buttons **“J1939 Read”** or **“J1939 Write”** the current configuration of the pressure transmitter is read from or written to the transmitter.

3.3 Working Pane

General Information

J1939 Name

J1939 Identifier

PGN/SPN

Identity Number	336		
Manufacturer Code	452		
Product Code	12345678		
Pressure Range	0 ... 60 bar		
Date of Manufacture	24.11.11		
Firmware Revision	1.0		

J1939 Name

☒ Arbitrary Address Capable

Industry Group	Vehicle System Instance	Vehicle System
1	2	26

Function	Function Instance	ECU Instance
85	15	0

J1939 ID

Data Page	Priority	PF / PS (hex)	Source Address
0	6	FF00	129

PGN/SPN

PGN: 65280 - WIKAL specific - 60 bar

SPN: 1 - General purpose 60 bar

4. Supported PGN/SPN

PGN	SPN	Description	TRR [ms]	pressure range
1792	4087	Valve Pilot Pressure	100	40 bar
64817	1707	Hydraulic Fan 2 Motor Pressure	1000	321,275 bar
64836	4303	Aftertreatment 2 Fuel Pressure 2	500	64,255 bar
64869	4077	Aftertreatment 1 Fuel Pressure 2	500	64,255 bar
64876	3838	Aftertreatment 2 Secondary Air Pressure	500	64,255 bar
64877	3837	Aftertreatment 1 Secondary Air Pressure	500	64,255 bar
64900	3640	Engine Intake Valve Actuation Oil Pressure for Cylinder #17	500	64,255 bar
64900	3641	Engine Intake Valve Actuation Oil Pressure for Cylinder #18	500	64,255 bar
64900	3642	Engine Intake Valve Actuation Oil Pressure for Cylinder #19	500	64,255 bar
64900	3643	Engine Intake Valve Actuation Oil Pressure for Cylinder #20	500	64,255 bar
64901	3636	Engine Intake Valve Actuation Oil Pressure for Cylinder #13	500	64,255 bar
64901	3637	Engine Intake Valve Actuation Oil Pressure for Cylinder #14	500	64,255 bar
64901	3638	Engine Intake Valve Actuation Oil Pressure for Cylinder #15	500	64,255 bar
64901	3639	Engine Intake Valve Actuation Oil Pressure for Cylinder #16	500	64,255 bar
64902	3632	Engine Intake Valve Actuation Oil Pressure for Cylinder #9	500	64,255 bar
64902	3633	Engine Intake Valve Actuation Oil Pressure for Cylinder #10	500	64,255 bar
64902	3634	Engine Intake Valve Actuation Oil Pressure for Cylinder #11	500	64,255 bar
64902	3635	Engine Intake Valve Actuation Oil Pressure for Cylinder #12	500	64,255 bar
64903	3628	Engine Intake Valve Actuation Oil Pressure for Cylinder #5	500	64,255 bar
64903	3629	Engine Intake Valve Actuation Oil Pressure for Cylinder #6	500	64,255 bar
64903	3630	Engine Intake Valve Actuation Oil Pressure for Cylinder #7	500	64,255 bar
64903	3631	Engine Intake Valve Actuation Oil Pressure for Cylinder #8	500	64,255 bar
64904	3624	Engine Intake Valve Actuation Oil Pressure for Cylinder #1	500	64,255 bar
64904	3625	Engine Intake Valve Actuation Oil Pressure for Cylinder #2	500	64,255 bar
64904	3626	Engine Intake Valve Actuation Oil Pressure for Cylinder #3	500	64,255 bar
64904	3627	Engine Intake Valve Actuation Oil Pressure for Cylinder #4	500	64,255 bar
64907	3611	Diesel Particulate Filter Intake Pressure 2	500	64,255 bar
64907	3612	Diesel Particulate Filter Outlet Pressure 2	500	64,255 bar
64908	3609	Diesel Particulate Filter Intake Pressure 1	500	64,255 bar
64908	3610	Diesel Particulate Filter Outlet Pressure 1	500	64,255 bar
64926	3499	Aftertreatment 2 Supply Air Pressure	500	64,255 bar
64926	3500	Aftertreatment 2 Purge Air Pressure	500	64,255 bar
64927	3485	Aftertreatment 1 Supply Air Pressure	500	64,255 bar
64927	3486	Aftertreatment 1 Purge Air Pressure	500	64,255 bar
64928	3494	Aftertreatment 2 Fuel Pressure 1	500	64,255 bar
64929	3480	Aftertreatment 1 Fuel Pressure	500	64,255 bar
64993	2609	Cab A/C Refrigerant Compressor Outlet Pressure	1000	40 bar
64998	2580	Hydraulic Brake Pressure Circuit 1	100	250 bar
64998	2581	Hydraulic Brake Pressure Circuit 2	100	250 bar
65112	1725	Bellow Pressure Front Axle Left	100	64,255 bar
65112	1726	Bellow Pressure Front Axle Right	100	64,255 bar
65112	1727	Bellow Pressure Rear Axle Left	100	64,255 bar

PGN	SPN	Description	TRR [ms]	pressure range
65112	1728	Bellow Pressure Rear Axle Right	100	64,255 bar
65130	3549	Engine Oil-Filter Outlet Pressure	500	10 bar
65167	1320	Engine External Shutdown Air Supply Pressure	1000	321,275 bar
65170	1208	Engine Pre-filter Oil Pressure	100	10 bar
65172	1203	Engine Auxiliary Coolant Pressure	500	10 bar
65174	1192	Engine Turbocharger Wastegate Actuator Control Air Pressure	100	10 bar
65179	1168	Engine Turbocharger Lube Oil Pressure 2	1000	10 bar
65190	1127	Engine Turbocharger 1 Boost Pressure	500	80,31875 bar
65190	1128	Engine Turbocharger 2 Boost Pressure	500	80,31875 bar
65190	1129	Engine Turbocharger 3 Boost Pressure	500	80,31875 bar
65190	1130	Engine Turbocharger 4 Boost Pressure	500	80,31875 bar
65197	1091	Brake Application Pressure High Range, Front Axle, Left Wheel	100	12,5 bar
65197	1092	Brake Application Pressure High Range, Front Axle, Right Wheel	100	12,5 bar
65197	1093	Brake Application Pressure High Range, Rear Axle #1, Left Wheel	100	12,5 bar
65197	1094	Brake Application Pressure High Range, Rear Axle #1, Right Wheel	100	12,5 bar
65197	1095	Brake Application Pressure High Range, Rear Axle #2, Left Wheel	100	12,5 bar
65197	1096	Brake Application Pressure High Range, Rear Axle #2, Right Wheel	100	12,5 bar
65197	1097	Brake Application Pressure High Range, Rear Axle #3, Left Wheel	100	12,5 bar
65197	1098	Brake Application Pressure High Range, Rear Axle #3, Right Wheel	100	12,5 bar
65198	46	Pneumatic Supply Pressure	1000	20 bar
65198	1086	Parking and/or Trailer Air Pressure	1000	20 bar
65198	1087	Service Brake Air Pressure Circuit #1	1000	20 bar
65198	1088	Service Brake Air Pressure Circuit #2	1000	20 bar
65198	1089	Auxiliary Equipment Supply Pressure	1000	20 bar
65198	1090	Air Suspension Supply Pressure	1000	20 bar
65213	4211	Hydraulic Fan Motor Pressure	1000	321,275 bar
65245	104	Engine Turbocharger Lube Oil Pressure 1	1000	10 bar
65263	94	Engine Fuel Delivery Pressure	500	10 bar
65263	100	Engine Oil Pressure	500	10 bar
65268	241	Tire Pressure	10000	10 bar
65272	123	Clutch Pressure	1000	40 bar
65272	127	Transmission Oil Pressure	1000	40 bar
65273	579	Drive Axle Lift Air Pressure	1000	10 bar
65273	2613	Drive Axle Lube Pressure	1000	10 bar
65273	2614	Steering Axle Lube Pressure	1000	10 bar
65274	116	Brake Application Pressure	1000	10 bar
65274	117	Brake Primary Pressure	1000	10 bar
65274	118	Brake Secondary Pressure	1000	10 bar
65275	119	Hydraulic Retarder Pressure	1000	40 bar
65277	159	Engine Gas Supply Pressure	500	321,275 bar
65278	73	Auxiliary Pump Pressure	1000	40 bar

Manufacturer specific PGN/SPN:

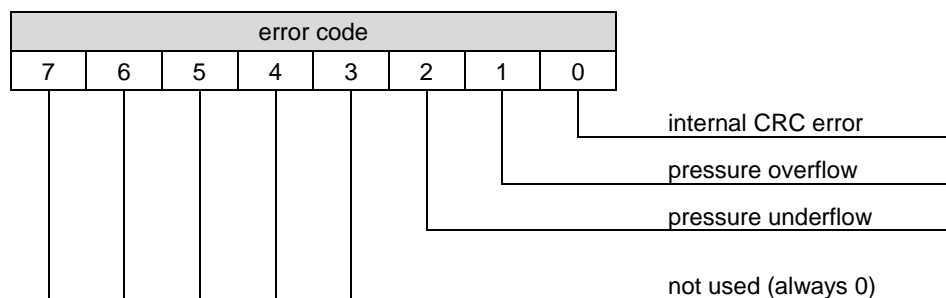
PGN	SPN	Description	TRR [ms]	pressure range	Scaling	Offset	Length	Start Position
65280	WI01	General purpose 60 bar	100	60 bar	1.5 mbar / bit	0	2	1
65281	WI02	General purpose 100 bar	100	100 bar	2.5 mbar / bit	0	2	1
65282	WI03	General purpose 160 bar	100	160 bar	4 mbar / bit	0	2	1
65283	WI04	General purpose 250 bar	100	250 bar	6.25 mbar / bit	0	2	1
65284	WI05	General purpose 400 bar	100	400 bar	10 mbar / bit	0	2	1
65285	WI06	General purpose 600 bar	100	600 bar	15 mbar / bit	0	2	1
65286	WI07	General purpose 1000 bar	100	1000 bar	25 mbar / bit	0	2	1
65287	WI08	General purpose 1000 psi	100	1000 psi	25 mpsi / bit	0	2	1
65288	WI09	General purpose 1500 psi	100	1500 psi	37.5 mpsi / bit	0	2	1
65289	WI10	General purpose 2000 psi	100	2000 psi	50 mpsi / bit	0	2	1
65290	WI11	General purpose 3000 psi	100	3000 psi	75 mpsi / bit	0	2	1
65291	WI12	General purpose 5000 psi	100	5000 psi	125 mpsi / bit	0	2	1
65292	WI13	General purpose 10000 psi	100	10000 psi	250 mpsi / bit	0	2	1

5. Signal Ranges and Error Code

Signal Ranges	1 byte	2 byte
Valid Signal	0 ... 250 0x00 ... 0xFA	0 ... 64255 0x0000 ... 0xFAFF
Parameter specific indicator	251 0xFB	64256 ... 64511 0xFB00 ... 0xFBFF
Reserved range for future indicator bits	252 ... 253 0xFC ... 0xFD	64512 ... 65023 0xFC00 ... 0xFDFF
Error indicator*	254 0xFE	65024 ... 65279 0xFE00 ... 0xFEFF
Not available or not requested	255 0xFF	65280 ... 65535 0xFF00 ... 0xFFFF

According to SAE J1939-71 (Table 1)

*on 2-byte-transmission: Low-Byte contains the error code:



6. Abbreviations

AAC	Arbitrary Address Capable
ECU	Electronic Control Unit
PDU	Protocol Data Unit
PGN	Parameter Group Number
SPN	Suspect Parameter Number
TRR	Transmission Repetition Rate

7. References

- SAE J1939 set of profiles
- Introduction to J1939 (Vector Informatik GmbH, www.vector.com)