

						raw (FW, driver, plugin, database1)		calculated (database2)															
id	item	category	rounded with	type	length	type		lower limit	upper limit	length	type (now)	unit (now)	type (goal)	unit (goal)	lower limit	upper limit	resoluton	Accuracy	description	RMS noise			
0xFF	Firmware HW/SW version	Metsense		hard coded	2	byte		N/A	N/A		int (raw)	N/A	int (cal)	N/A	N/A	N/A	N/A	N/A	N/A				
	Build time			hard coded	4	byte		N/A	N/A		int (raw)	N/A	int (cal)	Y-M-D h-m-s	N/A	N/A	N/A	N/A	N/A				
	Build git			hard coded	2	byte		N/A	N/A		int (raw)	N/A	int (cal)	N/A	N/A	N/A	N/A	N/A	N/A				
0x00	Metsense MAC			hard coded	6	byte		N/A	N/A		string	N/A	string	N/A	N/A	N/A	N/A	N/A	N/A				
0x01	TMP112		2	i2c	2	byte		0	0xFFFF		float	°C	float(binary32)	°C	-40	125	1 °C	±1 °C					
0x02	HTU21D temperature		2	i2c	3	byte		0	0xFFFF		float	°C	float	°C	-40	125	0.01 °C	±0.3 °C					
	HTU21D humidity		2	i2c	3	byte		0	0xFFFF		float	%RH	float	%RH	0	100	0.04 %RH	±2 %RH					
0x03	HIH4030 humidity		2	analog	2	byte		0	0xFFFF		float	%RH	float	%RH	0	100	/1024 %RH	±3.5 %RH					
0x04	BMP180 temperature		1	i2c	2	byte		0	0xFFFF		float	°C	float	°C	-40	85	0.1 °C	±1 °C	length needs to be revised				
	BMP180 pressure		2	i2c	3	byte		0	0xFFFF		float	Pa	float	hPa	300	1100	0.01 hPa	±1 hPa	pressure requ	0.02 hPa (0.17 m)			
0x05	PR103J2 temperature		2	analog	2	byte		0	0xFFFF		float	°C	float	°C	-55	80	/1024 %RH	±0.05 °C					
0x06	TSL250RD		3	analog	2	byte		0	0xFFFF		int (raw)	N/A	float	µw/cm2	0.2	51.5	178 µW/cm2	N/P		0.8 µV/√Hz			
0x07	MMA8452Q AccX	3	i2c	2	byte		0	0xFFFF		float	mg	float	mg	0	5000	, 1g / 1024)	±20 mg		99 µg/√Hz				
	MMA8452Q AccY	3	i2c	2	byte		0	0xFFFF		float	mg	float	mg	0	5000	, 1g / 1024)	±20 mg		99 µg/√Hz				
	MMA8452Q AccZ	3	i2c	2	byte		0	0xFFFF		float	mg	float	mg	0	5000	, 1g / 1024)	±20 mg		99 µg/√Hz				
	MMA8452Q AccMag	3	N/A	N/A	N/A		N/A	N/A		float	mg	float	mg	0	M AccX,Y, Z	Norm of res	AccX, Y, Z						
0x08	SPV1840LR5H-B	2	analog	126	byte		0	0xFFFF		int (raw)	N/A	float	dB		C/F	C/F -35 dBV/Pa	C/F	Signal to Noise Ratio 62.5 dB(A), 100 - 10,000 Hz					
0x09	TSYS01 temperature	2	i2c	3	byte		0	0xFFFF		float	°C	float	°C	-40	125	0.01 °C	±0.5 °C						
0x0A	HMC5883L Strength Hx	Lightsense	3	i2c	2	byte		0	0xFFFF		float	mG	float	mG	-1.3	1.3	92 mG/LSb	~ 2° heading	Gain: 1090 LSb/Gauss				
	HMC5883L Strength Hy		3	i2c	2	byte		0	0xFFFF		float	mG	float	mG	-1.3	1.3	92 mG/LSb	~ 2° heading	noise floor: 2 mG				
	HMC5883L Strength Hz		3	i2c	2	byte		0	0xFFFF		float	mG	float	mG	-1.3	1.3	92 mG/LSb	~ 2° heading					
	HMC5883L Change			N/A	N/A	N/A		N/A	N/A		float	mG	float	mG	0	f MagX,Y, Z	f MagX,Y, Z	f MagX, Y, Z					
	HIH6130 temperature		2	i2c	2	byte		0	0xFFFF		float	°C	float	°C	5	50	0.025 °C	±1 °C					
	HIH6130 humidity		2	i2c	2	byte		0	0xFFFF		float	%RH	float	%RH	10	90	0.04 %RH	±4 %RH					
	APDS-9006-020		3	i2c	2	byte		0	0xFFFF		int (raw)	N/A	float	Lux	0	1,000	C/F	C/F	2.5 µV				
	TSL260		3	i2c	2	byte		0	0xFFFF		int (raw)	N/A	float	µw/m2	0.2	56.8	84 µW/cm2	N/P		2.5 µV + 0.8 µV/√Hz			
	TSL250		3	i2c	2	byte		0	0xFFFF		int (raw)	N/A	float	µw/m2	0.2	51.5	178 µW/cm2	N/P		2.5 µV + 0.8 µV/√Hz			
	MLX75305		3	i2c	2	byte		0	0xFFFF		int (raw)	N/A	float	µw/m2		C/F	C/F	C/F	500 - 1,000 n	2.5 µV			
	ML8511		3	i2c	2	byte		0	0xFFFF		int (raw)	N/A	int (caled)	N/A (index)	0	10	C/F	C/F		2.5 µV			
0x13	TMP421		2	i2c	2	byte		0	0xFFFF		float	°C	float	°C	-40	125	for 2nd byte	25 ~ 2.5 °C					
0x15	Total reducing gases (TOR, IRR)		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	ppm	0	20	N/P	(sensitivity)					
0x16	Chem FW Config					~1870	byte		N/A	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A					
0x17	Nitrogen dioxide		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	ppm	0	20	< 20 ppb	(sensitivity)					
0x18	Ozone		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	ppm	0	20	< 20 ppb	(sensitivity)					
0x19	Hydrogen sulphide		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	ppm	0	50	< 5 ppb	(sensitivity)					
0x1A	Total oxidizing gases (Tox, IAQ)		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	ppm	0.1	100		N/P	(sensitivity)				
0x1B	Carbon monoxide		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	ppm	0.5	1,000	< 100 ppb	(sensitivity)					
0x1C	Sulfur dioxide		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	ppm	0	20	< 20 ppb	(sensitivity)					
0x1D	SHT25 temperature		2			N/A	N/A		N/A	N/A	int (raw)	100th °C	float	°C	-40	125	1 (14 bit) °C	±0.2 °C					
	SHT25 humidity		2			N/A	N/A		N/A	N/A	int (raw)	100th %RH	float	%RH	0	100	(8 bit) %RH	±1.8 %RH					
	LPS25H temperature		2			N/A	N/A		N/A	N/A	int (raw)	100th °C	float	°C	-30	105	480 LSB/°C	±2 °C					
	LPS25H pressure		2			N/A	N/A		N/A	N/A	int (raw)	hPa	float	Pa	260	1260	96 LSB/hPa	±1 (0 - 80 °C)					
0x1E	SI1445 UV intensity	Chemsense	2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	N/A (index)	0	10	N/P	N/P					
SI1445 visible light intensity	2				N/A	N/A		N/A	N/A	int (raw)	N/A	float	lux (TBD)	0	128,000	N/P	N/P						
0x1F	SI1445 proximity		2		rs232 - serial3	N/A	N/A		N/A	N/A	int (raw)	N/A	float	cm (TBD)	N/P	N/P	N/P	N/P					
0x20	Chemsense MAC					N/A	N/A		N/A	N/A	string	N/A	string	N/A	N/A	N/A	N/A	N/A	N/A				
0x21	CO ADC temperature		2			N/A	N/A		N/A	N/A	int (raw)	100th °C	float	°C	N/P	N/P	N/P	N/P	N/P				
0x22	IAQ IRR ADC temperature		2			N/A	N/A		N/A	N/A	int (raw)	100th °C	float	°C	N/P	N/P	N/P	N/P	N/P				
0x23	O3 NO2 ADC temperature		2			N/A	N/A		N/A	N/A	int (raw)	100th °C	float	°C	N/P	N/P	N/P	N/P	N/P				
0x24	SO2 H2S ADC temperature		2			N/A	N/A		N/A	N/A	int (raw)	100th °C	float	°C	N/P	N/P	N/P	N/P	N/P				
0x25	CO LMP temperature		2			N/A	N/A		N/A	N/A	int (raw)	100th °C	float	°C	N/P	N/P	N/P	N/P	N/P				
0x26	Accelerometer X		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	g	N/P	N/P	N/P	N/P	N/P				
	Accelerometer Y		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	g	N/P	N/P	N/P	N/P	N/P				
	Accelerometer Z		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	g	N/P	N/P	N/P	N/P	N/P				
	Accelerometer Vibration		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	g	N/P	N/P	N/P	N/P	N/P				
0x27	Gyro X	Alpha sensor	2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	°/s	N/P	N/P	N/P	N/P	N/P				
	Gyro Y		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	°/s	N/P	N/P	N/P	N/P	N/P				
	Gyro Z		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	°/s	N/P	N/P	N/P	N/P	N/P				
	Gyro orientation index		2			N/A	N/A		N/A	N/A	int (raw)	N/A	float	°/s	N/P	N/P	N/P	N/P	N/P				
0x28	Histogram bin count																						

						raw (FW, driver, plugin, database1)				calculated (database2)											
id	item	category	rounded with	type	length	type		lower limit	upper limit	length	type (now)	unit (now)	type (goal)	unit (goal)	lower limit	upper limit	resoluton	Accuracy	description	RMS noise	
0x61	wagman_mediaslect_nc				0.125	uint	char														
	wagman_mediaslect_ep				0.125	uint	char														
	wagman_heartbeat_nc				4	uint	uint8														
	wagman_heartbeat_ep				4	uint	uint8														
	wagman_heartbeat_cs				4	uint	uint8														
0x62	wagman_heartbeat_port4				4	uint	uint8														
	wagman_heartbeat_port5				4	uint	uint8														
	wagman_lastboot_nc				4	float	uint32														
0x63	wagman_lastboot_ep				4	float	uint32														
	wagman_lastboot_cs				4	float	uint32														
	wagman_lastboot_port4				4	float	uint32														
	wagman_lastboot_port5				4	float	uint32														
	wagman_powerfault_nc				4	float															
0x64	wagman_powerfault_ep				4	float															
	wagman_powerfault_cs				4	float															
	wagman_powerfault_port4				4	float															
	wagman_powerfault_port5				4	float															
	wagman_bootattempt_nc				1	uint															
0x65	wagman_bootattempt_nc				1	uint															
	wagman_bootattempt_nc				1	uint															
	wagman_bootattempt_nc				1	uint															
	wagman_bootattempt_nc			1	uint																
0x66	wagman_rtc			4	uint																
0x70	nc_machine_id	NodeController			32	byte	byte[32]														
0x71	nc_boot_id				32	byte	byte[32]														
0x72	nc_cpu_temp				2	float	uint24														
	nc_ram_total				2	float	uint32														
0x73	nc_ram_free				2	float	uint32														
	nc_current_disk_type				2	byte	chr														
	nc_altermate_disk_type				2	byte	chr														
	nc_partition1_total				2	float	unit24														
	nc_partition1_used				1	uint	unit24														
	nc_partition2_total				2	float	unit24														
	nc_partition2_used				1	uint	unit24														
	nc_partition3_total				2	float	unit24														
	nc_partition3_used				1	uint	unit24														
0x75	nc_current_time				4	float	unit32														
	nc_uptime				4	uint	unit32														
0x76	nc_idletime				4	uint	unit32														
	nc_load_1				2	float	binary32														
0x77	nc_load_5				2	float	binary32														
	nc_load_10				2	float	binary32														
	nc_ipaddress_octet1				1	uint	uint8														
	nc_ipaddress_octet2				1	uint	uint8														
0x78	nc_ipaddress_octet3				1	uint	uint8														
	nc_ipaddress_octet4				1	uint	uint8														
0x79	nc_hbmode				6	str	chr														
0x7A	nc_lock_fs				0.125	uint	chr														
	nc_lock_pw				0.125	uint	chr														
0x7B	beehive_ping				0.125	uint	chr														
	beehive_sshd				0.125	uint	chr														
	nc_local_sshd				0.125	uint	chr														
0x7C	nc_devices_alphasense				0.125	uint	chr														
	nc_devices_metsense				0.125	uint	chr														
	nc_devices_modem				0.125	uint	chr														
0x7D	nc_devices_wagman				0.125	uint	chr														
	nc_ver_core_mj				1	uint	uint8														
	nc_ver_core_mi				1	uint	uint8														
	nc_ver_core_p				1	uint	uint8														
	nc_ver_nodecontroller_mj				1	uint	uint8														
	nc_ver_nodecontroller_mi				1	uint	uint8														
	nc_ver_nodecontroller_p				1	uint	uint8														
	nc_ver_plugin_manager_mj				1	uint	uint8														
	nc_ver_plugin_manager_mi				1	uint	uint8														
	nc_ver_plugin_manager_p				1	uint	uint8														
0x7E	nc_rabbitmq_queues_data				0.125	uint	chr														
	nc_rabbitmq_exchanges_data				0.125	uint	chr														
	nc_rabbitmq_shovels_data				0.125	uint	chr														
0x7F	nc_rabbitmq_shovels_images				0.125	uint	chr														
	nc_services_rabbitmq_uptime				4	float	uint32														
	nc_services_rabbitmq_exitcode				1	uint	int8														
	nc_services_rabbitmq_state				0.5	uint	chr														
	nc_services_rabbitmq_substate				0.5	uint	chr														
	nc_services_init_uptime				4	float	uint32														
	nc_services_init_exitcode				1	uint	int8														
	nc_services_init_state				0.5	uint															
	nc_services_init_substate				0.5	uint															
	nc_services_heartbeat_uptime				4	float	uint32														
	nc_services_heartbeat_exitcode				1	uint	int8														
	nc_services_heartbeat_state				0.5	uint															
	nc_services_heartbeat_substate				0.5	uint															
	nc_services_epoch_uptime				4	float	uint32														
	nc_services_epoch_exitcode				1	uint	int8														
	nc_services_epoch_state				0.5	uint															
	nc_services_epoch_substate				0.5	uint															
	nc_services_reversetunnel_uptime				4	float	uint32														
	nc_services_reversetunnel_exitcode				1	uint	int8														
	nc_services_reversetunnel_state				0.5	uint															
	nc_services_reversetunnel_substate				0.5	uint															
	nc_services_wagmandriver_uptime				4	float	uint32														
	nc_services_wagmandriver_exitcode				1	uint	int8														
	nc_services_wagmandriver_state				0.5	uint															
	nc_services_wagmandriver_substate				0.5	uint															

[illegible]