API -- Application Programming Interface

id	item	category	type	length	type	read	write	init	enable	disable	p1 (read/enable/disable)	p2 (read, default = 0)	p3 (read, default = 0)
	Firmware HW/SW version		hard coded	2	byte								
	Build time			4	byte	readcore	N/A	N/A	N/A	N/A	sensor_id		
0xFF	Build git			2	byte								
0x00	Metsense MAC	Metsense	hard coded	6	byte	readcore	N/A	N/A	N/A	N/A	sensor_id		
0x01	TMP112		i2c	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x02	HTU21D temperature		i2c	3	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
	HTU21D humidity			3	byte								
0x03	HIH4030 humidity		analog	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x04	BMP180 temperature		i2c	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
	BMP180 pressure			3	byte								
0x05	PR103J2 temperature		analog	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x06	TSL250RD		analog	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id	#repeat byte 0x00 - 0xFF	time interval #reading/sec byte 0x00 - 0xFF
0x07	MMA8452Q AccX		i2c	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
	MMA8452Q AccY			2	byte								
	MMA8452Q AccZ			2	byte								
	MMA8452Q AccMag			N/A	N/A								
0x08	SPV1840LR5H-B		analog	128	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x09	TSYS01 temperature		i2c	3	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x0A	HMC5883L Strength Hx	Lightsense	i2c	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
	HMC5883L Strength Hy			2	byte								
	HMC5883L Strength Hz			2	byte								
	HMC5883L Change			N/A	N/A								
0x0B	HIH6130 temperature		i2c	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
	HIH6130 humidity			2	byte								
0x0C	APDS-9006-020		i2c	3	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x0D	TSL260		i2c	3	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x0E	TSL250		i2c	3	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x0F	MLX75305		i2c	3	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x10	ML8511		i2c	3	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id		
0x13	TMP421	Lightsense	i2c	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id	#repeat	time interval
0x14	SPV1840LR5H-B		i2c	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id	#repeat	time interval
0x15	Total reducing gases (TOR, IRR)					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x16 Does not follow coresense packet format	Chem FW Config				byte	readcore	N/A	N/A	N/A	N/A	sensor_id	N/A	N/A
0x17	Nitrogen dioxide	Chemsense	rs232 - serial3	N/A		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x18	Ozone					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x19	Hydrogen sulphide					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x1A	Total oxidizing gases (Tox, IAQ)					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x1B	Carbon monoxide					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x1C	Sulfur dioxide					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x1D	SHT25 temperature					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	SHT25 humidity					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x1E	LPS25H temperature					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	LPS25H pressure					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Si1445 UV intensity					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Si1445 visible light intensity					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x1F	Si1445 proximity					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x20	Chemsense MAC					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x21	CO ADC temperature					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x22	IAQ IRR ADC temperature					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x23	O3 NO2 ADC temperature					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x24	SO2 H2S ADC temperature					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x25	CO LMP temperature					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x26	Accelerometer X					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Accelerometer Y					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Accelerometer Z					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Accelerometer Vibration					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Gyro X					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Gyro Y					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Gyro Z					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
0x27	Gyro orientation index					N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Histogram bin count			32	byte	readcore	N/A	initcore of 0x28	enablecore of 0x28	disablecore of 0x28	sensor_id	N/A	N/A
	Histogram average time			4	byte								
	Histogram sample flow rate			4	byte								
	Histogram temp / pressure (alter)			4	byte								
	Histogram sampling period	Alpha sensor	spi	4	byte								
	Histogram sum of the count			2	byte								
	Histogram PM 1			4	byte								
	Histogram PM 2.5			4	byte								
0x28	Histogram PM 10			4	byte								
0x29	Serial		spi	20	byte	readcore	N/A	initcore of 0x28	enablecore of 0x28	disablecore of 0x28	sensor_id	N/A	N/A
0x2A	All Chemsense	Chemsense	rs232 - serial3	256 (roughly)	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id	N/A	N/A
0x2B	Alpha status	Alpha sensor	spi	1	byte	readcore	N/A	N/A	N/A	N/A	sensor_id	N/A	N/A
0x30	Firmware	Alpha sensor	spi	2	byte	readcore	N/A	initcore of 0x28	enablecore of 0x28	disablecore of 0x28	sensor_id	N/A	N/A
0x31 Does not follow coresense packet format	Configuration bin boundaries + 2 spare bytes			32	byte	readcore	N/A	initcore of 0x28	enablecore of 0x28	disablecore of 0x28	sensor_id 0x31 (the 1st id for config)	N/A	N/A
	Configuration bin particle volumes			64	byte								
	Configuration bin particle dencities			64	byte								
	Configuration bin sample volume weightings B			64	byte								
	Configuration gain scaling coeifficient	Alpha sensor	spi	4	byte								
	Configuration sampling flow rate			4	byte								
	Configuration laser DAC			1	byte								
	Configuration fan DAC			1	byte								
	Configuration conversion factor			1	byte								
	Spare bytes			21	byte								
0x2C	Rain gauge	Rain	digital interrupt	1	byte	readcore	N/A	initcore	enablecore	disablecore use noInterrupt() provided by arduino	sensor_id	N/A	N/A
0x2D	Soil moisture volumetric Water Content	Soil	rs232	2	byte	readcore	N/A	initcore	enablecore	disablecore	sensor_id	#repeat	time interval
	Soil moisture electric conductivity	Soil		2	byte								
	Soil moisture temperature	Soil		2	byte								
0x2E	Water Level (Black)	Water level	analog	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id	N/A	N/A
0x2F	Water Level (Red)	Water level	analog	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id	N/A	N/A
0x35	PMS3003	Particle	rs232	30	byte	readcore	N/A	initcore	enablecore	disablecore	sensor_id	N/A	N/A
0x36	PMS7003	Particle	rs232	30	byte	readcore	N/A	iniotcore	enablecore	disablecore	sensor_id	N/A	N/A
0x37	YL-69	Soil moisture	analog	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id	N/A	N/A
0x38	YHDC SCT-013-030	Current	analog	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id	N/A	N/A
0x39	CR3110-3000	Current transformer	analog	2	byte	readcore	N/A	N/A	enablecore	disablecore	sensor_id	N/A	N/A
0x11	Bus reading	Bus reading	varies	varies	byte								
0x12	Disabled sensor	notice	n/a		2	byte							
N/A	i2c	Bus	i2c	depends	byte	readi2c	writei2c	N/A	N/A	N/A	address	refer down	refer down
N/A	spi	Bus	spi	depends	byte	readspi	writespi	initspi	N/A	N/A	pin#	refer down	refer down
N/A	rs232	Bus	rs232	depends	byte	readrs232	N/A	initrs232	N/A	N/A	serial#	refer down	refer down
N/A	analog	Bus	analog	2	byte	readanal	N/A	N/A	N/A	N/A	pin#	N/A	N/A
N/A	digital	Bus	interrput	1	byte	readinterr	N/A	initinterr	N/A	N/A	pin#	refer down	refer down

For Bus		call function	p1	p2	p3	p4	p5	p6	example sensor
		readi2c	address	out length	N/A	N/A	N/A	N/A	met/light
		readspi	pin#	data length	data	delay time	delay iter	N/A	alpha
	read	readrs232	serial#	N/A	N/A	N/A	N/A	N/A	Chem, Decagon
		readanal	pin#	N/A	N/A	N/A	N/A	N/A	met/light
		readinterr	pin#	N/A	N/A	N/A	N/A	N/A	rain
	write	writei2c	address	in length	in data	N/A	N/A	N/A	met/light
		writespi	pin#	data length	data	delay time	delay iter	N/A	alpha
	init	initspi	pin#	max speed	bit order	data mode	N/A	N/A	alpha
		initrs232	serial#	powerPin#	datarate	timeout	N/A	N/A	Chem, Decagon
		initinterr	pin#	interrupt type	interval time in second	N/A	N/A	N/A	rain
	readwrite	rwi2c	address	in length	in data	out length	N/A	N/A	met/light
For Core		call function	p1	p2	p3	p4	p5	p6	sensor
read		readcore	sensor_id	repeat	time interval	N/A	N/A	N/A	all core, no p2/p3 for chem, alpha
init		initcore	sensor_ids	N/A	N/A	N/A	N/A	N/A	Chem, Alpha, Rain, Soil
enable		enablecore	sensor_ids	N/A	N/A	N/A	N/A	N/A	all core
disable		diablecore	sensor_ids	N/A	N/A	N/A	N/A	N/A	all core