



Modbus Register Map: InRow RD

Part number: 990-3576B

08/2015

Notes:

- 16-bit registers are transmitted MSB first (i.e., big-endian).
- INT32 and UINT32 are most-significant word in n+0, least significant word in n+1 (i.e. big-endian).
- Reads can be performed with function codes 3, or 4. Writes can be performed with function code 16, or with function code 6 to registers with length 1.
- Modbus serial RTU and Modbus over TCP is supported.
- Signed numbers are twos-compliment
- Status bits are atomic within a single Modbus register. User should not look for consistency across multiple registers, only within a single register.
- Strings are two characters per register, first character in high-order byte, second character in low-order byte. Printable ASCII only.
- When writing an ASCII string the null terminator must be included.
- Single-register reads of reserved or undefined registers will return an error. Block reads which begin with a valid register will not return an error but will return zeros for undefined registers.
- Data Type column: "INT16"=signed 16-bit integer, "UINT16" = unsigned 16-bit integer, "INT32" = signed 32-bit integer, "UINT32" = unsigned 32-bit integer, "ENUM" is a UINT16 value which maps to a defined list of states, "ASCII" = the printable ASCII subset from 0x20 - 0x7E. BOOLEAN= a single bit, 0 or 1.
- "Absolute Starting Register Address" = 0 (the column heading used in this table) is equivalent to "Register 40001" in Modicon terminology, which is address zero when transmitted over the wire.
- Accesses to items before data is available will result in an invalid address error.
- Response Timeout Guide: A single register response is typically less than 100 ms; however, reading a large number of registers may take 2 seconds or more. If timeouts occur, reduce the number of registers in each request or increase the response timeout.

Absolute Starting Register Number, (Hexadecimal)	Absolute Starting Register Number, (Decimal)	Data Point	R/W	Length	Units	Valid Response					
// Group											
0000	0	NUMBER_OF_COOLING_UNITS	R/W	2	LONG						
0002	2	COOL_SETPOINT	R/W	2	LONG	(Tenths Deg) F					
0004	4	SUPPLY_AIR_SETPOINT	R/W	2	LONG	(Tenths Deg) F					
0006	6	CONFIGURATION_TYPE	R/W	1	ENUM	0 = RACS	1 = Spot	2 = In-Row	3 = HACS	4 = CACS	
0007	7	FAN_SPEED_PREFERENCE	R/W	1	ENUM	0 = Low	1 = Med-Low	2 = Med	3 = Med-High	4 = High	
0008	8	CAPACITY_CTRL	R/W	1	ENUM	0 = Discrete (Disc)	1 = Proportional (Prop)				
0009	9	FAN_SPEED_CTRL	R/W	1	ENUM	0 = Automatic	1 = Manual				
000A	10	COOL_DEADBAND	R/W	2	LONG	(Tenths Deg) F					
000C	12	RACK_INLET_MAX_TEMP	R	2	LONG	(Tenths Deg) F					
000E	14	RACK_INLET_MIN_TEMP	R	2	LONG	(Tenths Deg) F					
0010	16	RETURN_AIR_MAX_TEMP	R	2	LONG	(Tenths Deg) F					
0012	18	RETURN_AIR_MIN_TEMP	R	2	LONG	(Tenths Deg) F					
0014	20	COOLING_DEMAND	R	2	LONG	(Tenths) kW					
0016	22	COOLING_ACTUAL	R	2	LONG	(Tenths) kW					
0018	24	AIRFLOW_DEMAND	R	2	LONG	CFM					
001A	26	COOL_PID_P	R/W	2	LONG	(Hundredths) Unitless					
001C	28	COOL_PID_I	R/W	2	LONG	(Hundredths) Unitless					
001E	30	COOL_PID_D	R/W	2	LONG	(Hundredths) Unitless					
0020	32	NUMBER_OF_BACKUP_UNITS	R/W	2	LONG						
0022	34	RUNTIME_BALANCING_ENABLE	R/W	1	ENUM	0 = Disable	1 = Enable				
0023	35	LOAD_ASSIST_ENABLE	R/W	1	ENUM	0 = Disable	1 = Enable				
0024	36	ALTITUDE	R/W	2	LONG	Feet					
0026	38	NUM_ACTIVE_FLOW_CONTROLLERS	R/W	2	LONG	N/A					
0028	40	ACTIVE_FLOW_CONTROL_BIAS	R/W	1	ENUM	0 = Positive	1 = Slightly Positive	2 = Zero	3 = Slightly Neg	4 = Negative	
0029	41	ACTIVE_FLOW_CONTROL_STATUS	R	1	ENUM	0 = Under	1 = Okay	2 = Over	3 = N/A		
002A	42	ACTIVE_FLOW_CONTROL_LAMP_TEST	R/W	1	ENUM	0 = Disable	1 = Enable				
// Unit											
0040	64	OVERALL_STATUS	R	1	ENUM	0 = No Alarm	2 = Informational	4 = Warning	8 = Critical		
0041	65	UNIT_NAME	R/W	21	ASCII	N/A					
0056	86	UNIT_LOCATION	R/W	21	ASCII	N/A					
006B	107	MODEL_NUM	R	10	ASCII	N/A					
0075	117	SERIAL_NUM	R	10	ASCII	N/A					
007F	127	FIRMWARE_REV	R	4	ASCII	N/A					
0083	131	HARDWARE_REV	R	4	ASCII	N/A					
0087	135	DATE_OF_MANUFACTURE	R	6	ASCII	mm/dd/yyyy					

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4. Modbus serial RTU and Modbus over TCP is supported.
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10. Data Type column: "INT16"=signed 16-bit integer, "UINT16" = unsigned 16-bit integer, "INT32" = signed 32-bit integer, "UINT32" = unsigned 32-bit integer, "ENUM" is a UINT16 value which maps to a defined list of states, "ASCII" = the printable ASCII subset from 0x20 - 0x7E. BOOLEAN= a single bit, 0 or 1.
11. "Absolute Starting Register Address" = 0 (the column heading used in this table) is equivalent to "Register 40001" in Modicon terminology, which is address zero when transmitted over the wire.
12. Accesses to items before data is available will result in an invalid address error.
13. Response Timeout Guide: A single register response is typically less than 100 ms; however, reading a large number of registers may take 2 seconds or more. If timeouts occur, reduce the number of registers in each request or increase the response timeout.

Absolute Starting Register Number, (Hexadecimal)	Absolute Starting Register Number, (Decimal)	Data Point	R/W	Length	Units	Valid Response					
008D	141	OPERATE_MODE	R	1	ENUM	0 = Standby	1 = On	2 = Idle	4 = Service	5 = Backup	6 = Assist
008E	142	UNIT_TYPE	R	1	ENUM	0 = Not Configured	1 = Fluid Cooled	2 = Air Cooled			
008F	143	UNIT_COOL_OUTPUT	R	2	LONG	(Tenths) kW					
0091	145	UNIT_COOL_DEMAND	R	2	LONG	(Tenths) kW					
0093	147	RACK_INLET_TEMP	R	2	LONG	(Tenths Deg) F					
0095	149	SUPPLY_TEMP	R	2	LONG	(Tenths Deg) F					
0097	151	RETURN_TEMP	R	2	LONG	(Tenths Deg) F					
0099	153	UNIT_AIR_FLOW	R	2	LONG	CFM					
009B	155	FAN_SPEED	R	2	LONG	(Tenths) %					
009D	157	SUCTION_TEMP	R	2	LONG	(Tenths Deg) F					
009F	159	SUPERHEAT	R	2	LONG	(Tenths Deg) F					
00A1	161	FILTER_DP	R	2	LONG	(Hundredths) in W.C.					
00A3	163	FLUID_VALVE_POSITION	R	2	LONG	%					
00A5	165	SUCTION_PRESSURE	R	2	LONG	Psi					
00A7	167	DISCHARGE_PRESSURE	R	2	LONG	Psi					
00A9	169	AIR_FILTER_RUNHOUR	R	2	LONG	Hours					
00AB	171	FAN_1_RUNHOUR	R	2	LONG	Hours					
00AD	173	FAN_2_RUNHOUR	R	2	LONG	Hours					
00AF	175	FAN_3_RUNHOUR	R	2	LONG	Hours					
00B1	177	FAN_4_RUNHOUR	R	2	LONG	Hours					
00B3	179	FAN_5_RUNHOUR	R	2	LONG	Hours					
00B5	181	FAN_6_RUNHOUR	R	2	LONG	Hours					
00B7	183	COMPRESSOR_RUNHOUR	R	2	LONG	Hours					
00B9	185	FAN_UPPER_PWRSP_RUNHOUR	R	2	LONG	Hours					
00BB	187	FAN_LOWER_PWRSP_RUNHOUR	R	2	LONG	Hours					
00BD	189	CONDS_PUMP_RUNHOUR	R	2	LONG	Hours					
00BF	191	AIR_FILTER_SERV_INT	R/W	2	LONG	Weeks					
00C1	193	AIR_FILTER_SERV_INT_ALARM	R/W	1	ENUM	0 = Disable	1 = Enable				
00C2	194	RACK_TEMP_HIGH_THRESH	R/W	2	LONG	(Tenths Deg) F					
00C4	196	SPLY_AIR_TEMP_HIGH_THRESH	R/W	2	LONG	(Tenths Deg) F					
00C6	198	RTN_AIR_TEMP_HIGH_THRESH	R/W	2	LONG	(Tenths Deg) F					
00C8	200	STARTUP_DELAY	R/W	2	LONG	Seconds					
00CA	202	IDLE_ON_LEAK	R/W	1	ENUM	0 = No	1 = Yes				
00CB	203	INPUT_NORMAL	R/W	1	ENUM	0 = Open	1 = Closed				
00CC	204	INPUT_STATE	R	1	ENUM	0 = Open	1 = Closed				
00CD	205	OUTPUT_NORMAL	R/W	1	ENUM	0 = Open	1 = Closed				

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11. "Absolute Starting Register Address" = 0 (the column heading used in this table) is equivalent to "Register 40001" in Modicon terminology, which is address zero when transmitted over the wire.
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00CE	206	OUTPUT_STATE	R	1	ENUM	0 = Open	1 = Closed			
00CF	207	OUTPUT_SOURCE	R/W	1	ENUM	0 = Any Alarm	1 = Only Critical Alarms			
00D0	208	OHE_INPUT_NORMAL	R/W	1	ENUM	0 = Open	1 = Closed			
00D1	209	OHE_INPUT_STATE	R	1	ENUM	0 = Open	1 = Closed			
00D2	210	OHE_OUTPUT_STATE	R	1	ENUM	0 = Open	1 = Closed			
00D3	211	COMPRESSOR_STATE	R	1	ENUM	0 = Off	1 = On			
00D4	212	HOT_GAS_BYPASS_VALVE_POSITION	R	2	LONG	(Hundredths) %				
00D6	214	UNIT_RUNHOUR	R	2	LONG	Hours				
00D8	216	UNIT_ROLE_OVERRIDE	R/W	1	ENUM	0 = Automatic	1 = Forced On			
00D9	217	IDLE_ON_COOL_FAIL	R/W	1	ENUM	0 = No	1 = Yes			
// Alarms										
0100	256	INTERNAL_COMM_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0101	257	ALINK_ISOLATION_RELAY_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0102	258	EXTERNAL_COMMUNICATION_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0103	259	COOL_FAIL	R	1	ENUM	0 = Clear	1 = Alarm			
0104	260	RACK_TEMP_HIGH_VIOLATION	R	1	ENUM	0 = Clear	1 = Alarm			
0105	261	AIR_FILTER_CLOGGED	R	1	ENUM	0 = Clear	1 = Alarm			
0106	262	UPPER_RTN_AIR_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0107	263	Reserved	R	1						
0108	264	LOWER_RTN_AIR_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0109	265	UPPER_SPLY_AIR_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
010A	266	MIDDLE_SPLY_AIR_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
010B	267	LOWER_SPLY_AIR_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
010C	268	RACK_TEMP_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
010D	269	CONDENSOR_FLUID_ACUATOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
010E	270	HIGH_DISCHARGE_PRESSURE_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
010F	271	LOW_SUCTION_PRESSURE_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0110	272	EVAPORATOR_FAN_1_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0111	273	EVAPORATOR_FAN_2_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0112	274	EVAPORATOR_FAN_3_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0113	275	EVAPORATOR_FAN_4_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0114	276	EVAPORATOR_FAN_5_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0115	277	EVAPORATOR_FAN_6_FAULT	R	1	ENUM	0 = Clear	1 = Alarm			
0116	278	WATER_DETECTED	R	1	ENUM	0 = Clear	1 = Alarm			
0117	279	CHECK_CONDENSATE_SYSTEM	R	1	ENUM	0 = Clear	1 = Alarm			
0118	280	CONDENSATE_PAN_FULL	R	1	ENUM	0 = Clear	1 = Alarm			

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0119	281	TOP_FAN_PWRSP_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
011A	282	BOTTOM_FAN_PWRSP_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
011B	283	AIR_FILTER_RUNHOUR_VIOLATION	R	1	ENUM	0 = Clear	1 = Alarm				
011C	284	GROUP_COMM_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
011D	285	SUPPLY_HIGH_TEMP_VIOLATION	R	1	ENUM	0 = Clear	1 = Alarm				
011E	286	RETURN_HIGH_TEMP_VIOLATION	R	1	ENUM	0 = Clear	1 = Alarm				
011F	287	FILTER_DP_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
0120	288	SUCTION_TEMP_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
0121	289	SUCTION_PRESSURE_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
0122	290	DISCHARGE_PRESS_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
0123	291	DISCRETE_INPUT_ABNORMAL	R	1	ENUM	0 = Clear	1 = Alarm				
0124	292	PERSISTENT_HIGH_DISCHARGE_PRESSURE	R	1	ENUM	0 = Clear	1 = Alarm				
0125	293	PERSISTENT_LOW_SUCTION_PRESSURE	R	1	ENUM	0 = Clear	1 = Alarm				
0126	294	Reserved	R	3							
0129	297	OUTSIDE_HEAT_EXCHANGE_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
012A	298	Reserved	R	1							
012B	299	UNIT_TYPE_CONFLICT	R	1	ENUM	0 = Clear	1 = Alarm				
012C	300	LIQUID_REFRIGERANT_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
012D	301	EXCESSIVE_COMP_CYCLING_ALARM	R	1	ENUM	0 = Clear	1 = Alarm				
012E	302	NO_BACKUP_UNITS_AVAILABLE	R	1	ENUM	0 = Clear	1 = Alarm				
012F	303	COMPRESSOR_DID_NOT_START_ALARM	R	1	ENUM	0 = Clear	1 = Alarm				
0130	304	ECCAISLE_DOOR_OPEN_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
0131	305	NUM_OF_ACTIVE_FLOW_CONTROLLERS	R	1	ENUM	0 = Clear	1 = Alarm				
0132	306	INSUFFICIENT_AIRFLOW_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
0133	307	ACTIVE_FLOW_CONTROLLER_SENSOR_FAULT	R	1	ENUM	0 = Clear	1 = Alarm				
// Logging Registers											
FFEE	65518	APC RX CRC ERRORS	R	2	LONG	RX CRC ERRORS					
FFF0	65520	APC RX PACKET COUNTER	R	2	LONG	RX PACKET COUNTER					
FFF2	65522	APC TX PACKET COUNTER	R	2	LONG	TX PACKET COUNTER					
FFF4	65524	APC SER FRAME ERRORS	R	2	LONG	SER FRAME ERRORS					
FFF6	65526	APC SER OVERRUN ERRORS	R	2	LONG	SER OVERRUN ERRORS					
FFF8	65528	APC SER PARITY ERRORS	R	2	LONG	SER PARITY ERRORS					
FFFA	65530	APC SER RX15 ERRORS	R	2	LONG	SER RX15 ERRORS					
FFFC	65532	APC SER RX35 ERRORS	R	2	LONG	SER RX35 ERRORS					
FFFE	65534	APC SER BAUD RATE	R	1	INTEGER	SER BAUD RATE					
// END OF DATA											



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Note 1: ASCII strings include Null terminator.											
Note 2: To prevent Building Management Service and automated script difficulties, accesses to data points on unsupported units will return a value of 0 instead of an error.											
Note 3: Accesses to items before data is available will result in an invalid address error.											
Worldwide Customer Support											
Customer support for this or any other Schneider-Electric product is available at no charge in any of the following ways:											
* Visit the Schneider-Electric Web site to access documents in the Schneider-Electric Knowledge Base and to submit customer support requests.											
- www.schneider-electric.com (Corporate Headquarters) Connect to localized Schneider-Electric Web sites for specific countries, each of which provides customer support information.											
- www2.schneider-electric.com/sites/corporate/en/support/support.page - Global support searching Schneider-Electric Knowledge Base and using e-support.											
* Contact the Schneider-Electric Customer Support Center by telephone or e-mail.											
- Local, country-specific centers: go to www2.schneider-electric.com/sites/corporate/en/support/operations/local-operations/local-operations.page for contact information.											
For information on how to obtain local customer support, contact the Schneider-Electric representative or other distributors from whom you purchased your Schneider-Electric product.											