Technical Bulletin

Number	097
Subject	Hitachi Outdoor Unit 7Seg Display Interrogation
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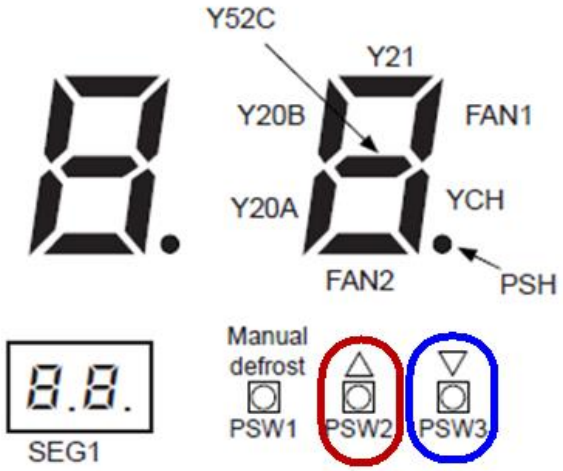
This is a step-by-step guide to Interrogating Hitachi Outdoor units (Set Free VRF/Utopia/IVX) via the 7 Segment Display.

This interrogation can be carried out at any time, during normal or test run operation, this also includes reading data off all connected indoor units.



To start the viewing system information from the outdoor unit, hold the **PSW2** button for 3 seconds, the display should light up or change from current display.

To progress through the information, gently press **PSW2** to read first, the codes in the lists below, then the value. If at any time you go too far, or if the data you wish to read is at the end of this list, **PSW3** goes in the opposite direction to **PSW2**.

Once finished, push and hold **PSW2** as before to clear screen. Note that operation will continue regardless

Listed below are tables with different readings for Set-Free VRF, Utopia Splits and IVX systems. Some of the data is common and will be relevant for these and other systems such as new FSXN and FSXNH (2013 Models)

Set-Free VRF systems (pre FSXN):

Total thermo-ON indoor unit capacity (Divide by 8 to get HP)	oP
Frequency of inverter compressor MC1 (Hz)	H1
Number of running compressors (0% = 0 to 100% = 16)	CC
Airflow rate	Fo
Outdoor expansion valve MV1 opening %	oE1
Outdoor expansion valve MV2 opening %	oE2
Outdoor expansion valve MV3 opening %	oE3
Outdoor expansion valve MVB opening %	oEb
Discharge pressure (high) (MPa) (Bar = X10)	Pd
Suction pressure (low) (MPa) (Bar = X10)	PS
Discharge gas temp. on compressor (TD1) °C	rd1
Discharge gas temp. on compressor (TD2) °C	rd2
Discharge gas temp. on compressor (TD3) °C	rd3
Discharge gas temp. on compressor (TD4) °C	rd4
Discharge gas temp. on compressor (TD5) °C	rd5
Discharge gas temp. on compressor (TD6) °C	rd6
Evaporating temperature 1 in heating °C	rE1
Evaporating temperature 2 in heating °C	rE2
Evaporating temperature 3 in heating °C	rE3
Air temperature (TO) °C	ro
Reserve	rCH
Running current of compressor MC1 (amps)	A1
Running current of compressor MC2 (amps)	A2
Running current of compressor MC3 (amps)	A3
Running current of compressor MC4 (amps)	A4
Running current of compressor MC5 (amps)	A5
Running current of compressor MC6 (amps)	A6
The following will scroll through each indoor unit value, it will be prefixed by the refrigeration number of the system. eg (01 ie 01) then (01 ie 02) 01 being Refrigeration number 01 & 02 being Indoor address. Indoor addresses are 0-9,A,B,C,D,E,F, (16 Max.)	
Indoor unit expansion valve opening %	-- ie --
Indoor unit liquid pipe temp (freeze protection)	-- rL --

Indoor unit heat exchanger gas pipe temp	-- r8 --
Indoor unit air inlet temperature	-- ri --
Indoor unit discharge air temperature	-- ro --
Indoor Unit Capacity Setting (1/8HP)	-- ca --
Indoor unit cause of stoppage	-- d1--
Pressure ratio decrease protection restricted control	c11
High pressure increase protection restricted control	c13
Inverter final temperature increase protection restricted control	c14
Discharge gas temp decrease protection restricted control	c15
Discharge gas temp decrease protection restricted control	c16
Current protection restricted control	c17
Total accumulated hours of compressor MC1 (X 10)	Uj1
Total accumulated hours of compressor MC2 (X 10)	Uj2
Total accumulated hours of compressor MC3 (X 10)	Uj3
Total accumulated hours of compressor MC4 (X 10)	Uj4
Total accumulated hours of compressor MC5 (X 10)	Uj5
Total accumulated hours of compressor MC6 (X 10)	Uj6
The latest cause code of stoppage at outdoor unit	AC
Cause code of stoppage at inverter	irC
Cause code of stoppage at fan motor controller	FrC
Total capacity setting of indoor unit (1/8HP)	CP
Total quantity of combined indoor unit	AA
Address of refrigerant system	GA

Utopia and IVX systems

The process is exactly the same as the above, although the data available is slightly less comprehensive. The following list itemises the typical information that be scrolled through:

Item	Item		Indication data		
	Check No.	Indi-cation	Indica-tion	Contents	
Total Capacity of Indoor Unit Connected	01	CP	22	00~96	
Input/Output State of Outdoor Micro-Computer	02	SC	5	Indicates only for the segments corresponding to the equipment in the figure. (See figure below)	
Alarm Code for Abnormal Stoppage of Compressor	03	AC	08	Alarm Code on Compressor	
Inverter Order Frequency to Compressor	04	H1	74	30~115 (Hz) In case that Frequency is higher than 100Hz, the last two digits flicker	
Indoor Order Frequency to Compressor	05	H2	74	30~115 (Hz) In case that Frequency is higher than 100Hz, last two digits flicker	
Air Flow Ratio	06	Fo	80	00~100 (%) In case that air flow ratio is 100%, "00" flashes	
Outdoor Unit Expansion Valve Opening	07	Eo	30	00~100 (%) Ins case that Expansion Valve Opening is 100%, "00" flashes	
Temperature at the top of Compressor	08	Td	02	00~142 (°C) In case that Temperature is higher than 100°C, the last two digits flash	
Evaporating Temperature at Heating	09	TE	-2	-19~80°C	
Ambient Air Temperature	10	To	-3	-19~80°C	
Cause of Stoppage at Inverter	11	dF	1	(See table at the next page)	
Control Information	12	TF	20	Internal Information of Outdoor Unit PCB	
Control Information	13	A1	12	Internal Information of Outdoor Unit PCB	
Inverter Secondary Current	14	A2	20	00~199 (A)	
Outdoor Unit Address	15	nA	00	00~15	In case of Twin/Triple/Quad-Type Unit, the information of 2nd to the 4th indoor units is indicated repeatedly. The right character of the indication represents the indoor unit setting No. Single: A Twin: A, b Triple: A, b, c Quad: A, b, c, d
Indoor Unit Expansion Valve Opening	16	EA	20	00~100 (%) In case that opening is 100%. "00" flashes	
Liquid Pipe Temperature of Indoor Unit (Freeze Protection)	17	tA	05	-19~127 (°C)	
Indoor Unit Intake Air Temperature	18	dA	28	-19~127 (°C)	
Indoor Unit Discharge Air Temperature	19	oA	20	-19~127 (°C)	
Cause of Indoor Unit Stoppage	20	dA	05	(See table at the next page)	