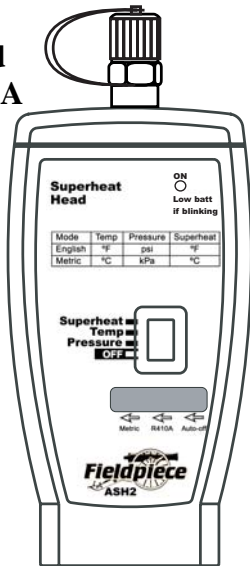


Fieldpiece

ASH2 Superheat Head R-22 and R410-A



OPERATOR'S MANUAL

Measuring Actual Superheat

Superheat is the difference between the boiling point temperature of the refrigerant in the evaporator coil and the actual temperature of the refrigerant (gas) as it leaves the evaporator. After boiling, the refrigerant continues to warm up. The number of degrees it "warmed up" after boiling is called the superheat. Under worst case conditions (low load), the refrigerant in the evaporator boils off near the end of the evaporator coil. To make sure liquid doesn't enter the condenser under the worst case condition (low load), the AC manufacturers publish charts indicating what the superheat should be at a given indoor wet bulb measurement and outdoor air temperature.

Measuring superheat is your best indication on a fixed orifice system of the proper refrigerant charge and operating conditions. If everything else is working properly and the actual superheat is too high, add refrigerant. If it's too low, remove refrigerant.

Using superheat to determine proper charge enables an air conditioner to deliver the maximum cooling power, the best reliability, and the best efficiency.

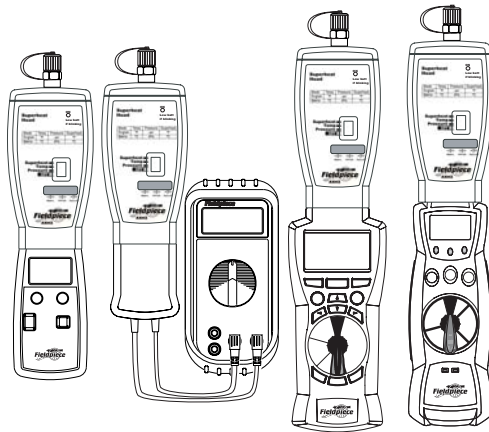
The ASH2 should only be connected to the low pressure side of an A/C refrigerant circuit.

The hose must have a schrader depressor on one end to release the refrigerant from the suction line. This is the same type of hose available with

Description

The model ASH2 superheat accessory head measures refrigerant pressure and temperature simultaneously. It then calculates and displays superheat. It has a 1/4" industry standard fitting for actual pressure. A cylindrical thermistor is included for temperature. Select R-22 or R410-A. Select english or metric units.

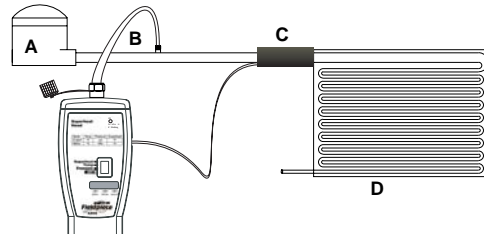
Use it your way



EHDL1 AHDL1 w/ Meter DL2 HS30

most pressure gauge sets. We suggest EPA sanctioned "no leak" hoses.

Exercise caution whenever working with any electricity and high pressure liquid or gas. Follow all instructions provided with equipment being serviced or installed.



A: Compressor
B: Service Port
C: Suction Line
D: Evaporator

Target Superheat

To determine the target superheat, you will need three things. Outdoor dry bulb (outdoor air temperature), indoor wet bulb, and the manufacturers target superheat chart.

You can use the ARH4 Fieldpiece accessory head for both indoor wet bulb and outdoor dry bulb. Or you can use any Fieldpiece meter that has a temperature function along with a ATWB1 wet bulb thermocouple.

Ten second boot up

The red power light will stay lit in the OFF position unless the ASH2 superheat head completely boots up. It uses a microprocessor to function and needs about ten seconds to boot up once you take it out of the OFF position. Put simply, once you take the ASH2 out of the OFF position don't use for ten seconds.

How to use

1. Connect to COM and Volts jack. Slide ASH2 superheat head onto Fieldpiece "stick" meter, data logger, electronic handle or connect to most other meters using Fieldpiece ADLS2 deluxe test leads or AHDL1 handle.
2. Set meter to mVDC range
3. Tuck cylindrical thermistor between the suction line pipe and it's foam insulation and plug into the ASH2 head.
4. Connect 1/4" flare to suction line as close to the evaporator as possible using an EPA approved hose (not included).
5. Select refrigerant (R22 or R410A) and units (English or metric).
6. Select parameter to display (superheat, pressure, or temperature).
7. Disable Auto-off to data log any of the above parameters with the DL2 data logger.
8. Once you have the superheat reading follow the manufacturer of the air conditioner's specifications to properly charge or diagnose the system.

One Year Limited Warranty

This head is warranted to the original purchaser against defects in material and workmanship for a period of one year from the date of purchase. During the warranty period, Fieldpiece will replace or repair the defective unit, subject to verification of the defect.

Any damage to the sensor from dirt, mechanical abuse, or overexposure to damaging chemicals, including overexposure to carbon monoxide, are not covered under this warranty. Also not covered are defects resulting from abuse, neglect, accident, unauthorized repair, alteration, or unreasonable use.

ANY IMPLIED WARRANTIES ARISING OUT OF THE SALE OF A FIELDPIECE INSTRUMENT PRODUCT, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE ABOVE. FIELDPIECE SHALL NOT BE LIABLE FOR LOSS OF USE OF THE INSTRUMENT OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXPENSES, OR ECONOMIC LOSS, OR FOR ANY CLAIM OR CLAIMS FOR SUCH DAMAGE, EXPENSES, OR ECONOMIC LOSS.

Local laws vary. Above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary by location.

Overloads

When overloaded, the accessory head puts out 3.4VDC. For ranges below 3400mVDC, the normal overload symbol will be displayed on the meter ("OL" or depending in the meter). For ranges above 3400mVDC, reading displayed will be approximately 3.4VDC.

Specifications

Range (pressure): 0-600 psi (-10°F to 120°F operating temp). 0-3400 kPa (-24°C-48°C operating temp).

Range (temperature): -40°F to 200°F; -40°C to 93.3°C.

Accuracy (pressure): ±1psi; ±6.9 kPa

Accuracy (temperature): ±1°F; ±6°C

Resolution: ±0.1°F; ±0.06°C

Operating temperature: -10°F to 120°F; -23.3°C to 48.9°C

Sensor type: Thermistor temperature sensor

Battery life: 25 hours typical. No measurable current draw when in "off" position.

Low battery indication: Red LED

Battery: 9V

Auto off: Approx. 60 minutes.

Maximum overload overpressure: 800psi

Overload: When temperature or pressure is outside of the ranges shown above, then the accessory will output 3.40 Volts.

Obtaining service

Check the battery, then call Fieldpiece for an RMA# and send freight prepaid to Fieldpiece.

For warranty service, include proof of purchase date. For out of warranty service, include a check or money order for \$80.00. We will pay for the shipping to you using the same method (ground, air, next day, etc.) used to ship product to us.



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Table 4—Superheat Charging

OUTDOOR TEMP (°F)	EVAPORATOR ENTERING AIR TEMPERATURE (°F WB)													
	50	52	54	56	58	60	62	64	66	68	70	72	74	76
55	9	12	14	17	20	23	26	29	32	35	37	40	42	45
60	7	10	12	15	18	21	24	27	30	33	35	38	40	43
65	—	6	10	13	16	19	21	24	27	30	33	36	38	41
70	—	—	7	10	13	16	19	21	24	27	30	33	36	39
75	—	—	—	6	9	12	15	18	21	24	28	31	34	37
80	—	—	—	—	5	8	12	15	18	21	25	28	31	35
85	—	—	—	—	—	—	8	11	15	19	22	26	30	33
90	—	—	—	—	—	—	5	8	13	16	20	24	27	31
95	—	—	—	—	—	—	—	6	10	14	18	22	25	29
100	—	—	—	—	—	—	—	—	8	12	15	20	23	27
105	—	—	—	—	—	—	—	—	5	9	13	17	22	26
110	—	—	—	—	—	—	—	—	—	6	11	15	20	25
115	—	—	—	—	—	—	—	—	—	—	8	14	18	23

Where a dash appears, do not attempt to charge system under these conditions or refrigerant slugging may occur. Charge must be weighed in.
NOTE: Superheat °F is at low-side service port.

The chart above is an example of a typical superheat chart. It is merely meant to show what a manufacturer's chart may look like. This chart may vary from system to system and is by no means meant to be used for actual diagnosis. Fieldpiece will not accept any liability for damage to property or person by the use or misuse of this product.