

USED ON

9N 5N1MWB93

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR HAZARDOUS LOCATIONS

WARNING: Resistance between Intrinsically Safe Ground and earth ground shall be less than 1.0 Ohm

NOTES:

- Installations in the U.S. should be in accordance with ANSI/ISA RP12.06.01 "Installation of Intrinsically Safe Systems for Hazardous (Classified) Locations" and the latest edition of the National Electrical Code (ANSI/NFPA 70).
- Associated apparatus must be approved by authority having jurisdiction and must be installed in accordance with manufacturers instructions.
- The FISCO Supply, FISCO Field Device(s) and FISCO Terminators shall be FM Approved for installations in the U.S.
- FISCO Supply manufacturer's installation drawing shall be followed when installing this equipment.
- Associated apparatus parameters must meet the following requirements:
 - $V_{oc}/U_o \leq V_{max}$;
 - $I_{sc}/I_o \leq I_{max}$;
 - P_o or $P_t \leq P_{max}$
 - $C_a \geq C_i + C_{cable}$
 - $L_a \geq L_i + L_{cable}$
- The control room equipment connected to FISCO Supply must not generate more than 250 Vrms or Vdc, or marked Um on the associated apparatus.
- A dust tight seal must be used at the conduit entry when the Transmitter is used in a Class II & III location.
- Suitable separation must be maintained between input wiring and Sensor wiring.
- WARNING: DO NOT DISCONNECT EQUIPMENT WHILE LIVE UNLESS THE AREA IS KNOWN TO BE NON-HAZARDOUS

FISCO CONCEPT

The Fieldbus Intrinsically Safe Concept (FISCO) allows the interconnection one FISCO certified power supply, an unlimited number of FISCO certified intrinsically safe field apparatus, and two FISCO certified terminators, one of each end of the trunk cable. (Note: The FISCO Terminator at the supply end is usually incorporated in to the FISCO Power Supply.)

Each piece of apparatus will be marked with the word "FISCO" followed by the indication of its function, i.e. "Power Supply", "Field Device" or "Terminator".

Interconnection of the FISCO Field Device, FISCO terminators and FISCO Power Supply must be suitable for the same Division or type of protection and Gas Group(s).

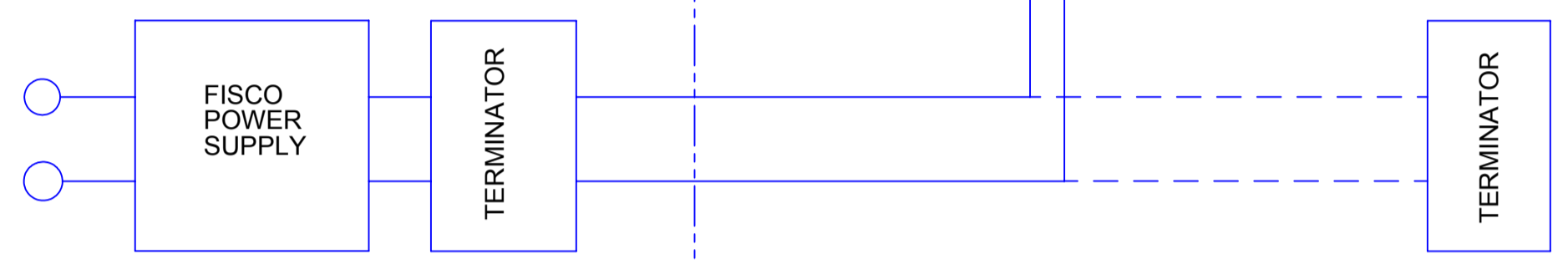
The FISCO power supply shall be located not more than 30m from one end of the trunk. Where the power supply is connected via a spur, then that spur is restricted to a length of 30 m.

The cable used to interconnect the devices needs to comply with the following parameters:

Loop resistance Rc: 15Ω/km to 150 W/km
 Inductance per unit length Lc: 0.4mH/km to 1mH/km
 Capacitance per unit length Cc: 45nF/km to 200nF/km
 Maximum Length of spur Cable: 60m for IIC and IIB (or Group ABC&D);
 Maximum length of each trunk cable, including the length of all spurs, 1 km in IIC and 5 km in IIB (Groups ABC&D) and IIIC (Group EFG).

Terminators
 At each end of the trunk cable a line terminator with the following parameters is suitable:
 R = 90Ω to 102W
 C = 0 to 2.2mF

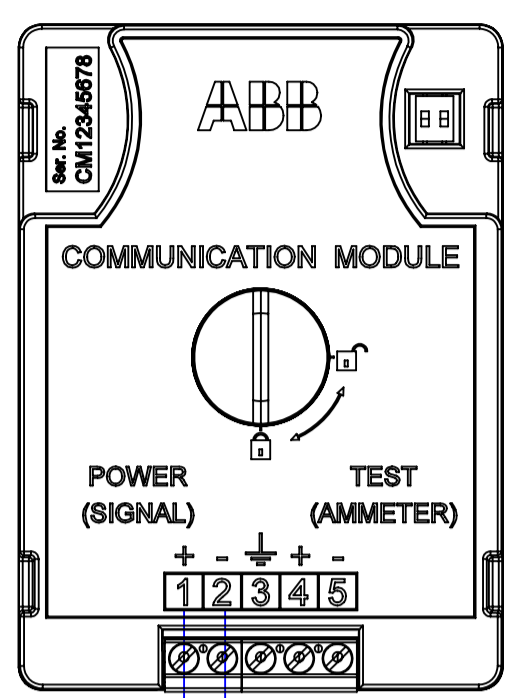
NON-HAZARDOUS AREA



THIRD ANGLE PROJECTION

DO NOT SCALE THIS PRINT
REMOVE ALL BURRS

COMMUNICATION MODULE :-
Profibus: FISCO
Fieldbus: FISCO



Fieldbus FISCO Field Device
 INPUT PARAMETERS:
 TERMINALS 1 & 2
 $V_{max}(U_i) = 17.5V$
 $I_{max}(I_i) = 380mA$
 $P_i = 5.32W$
 $C_i = 1.1nF$
 $L_i = 0$

Profibus FISCO Field Device
 INPUT PARAMETERS:
 TERMINALS 1 & 2
 $V_{max}(U_i) = 17.5V$
 $I_{max}(I_i) = 360mA$
 $P_i = 2.52W$
 $C_i = 1.1nF$
 $L_i = 0$

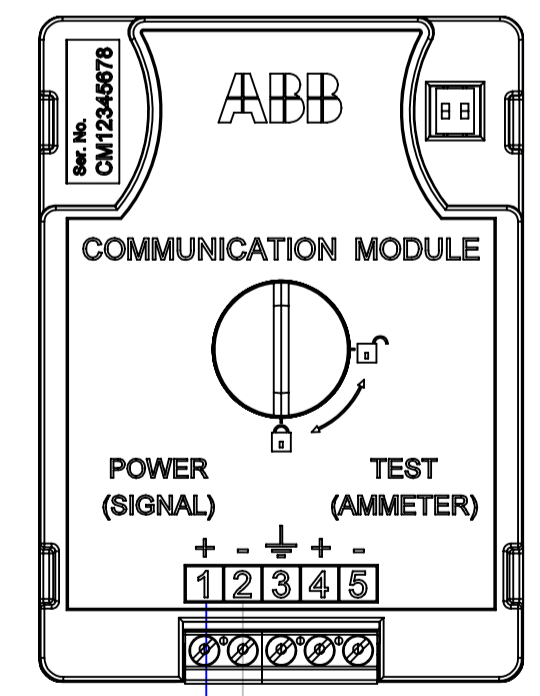
HAZARDOUS AREA

INTRINSICALLY SAFE

CLASS I, DIV1 GROUPS A,B,C,D; T4
 CLASS II DIV 1, GROUPS E,F,G; T4

COMMUNICATIONS MODULES

HART
 Fieldbus (Linear)
 Profibus (Linear)



HART
 INPUT PARAMETERS:
 TERMINALS 1 & 2
 $V_{max}(U_i) = 30V$
 $I_{max}(I_i) = 100mA$
 $P_i = 0.8W$
 $C_i = 0.56nF$
 $L_i = 3.3mH$

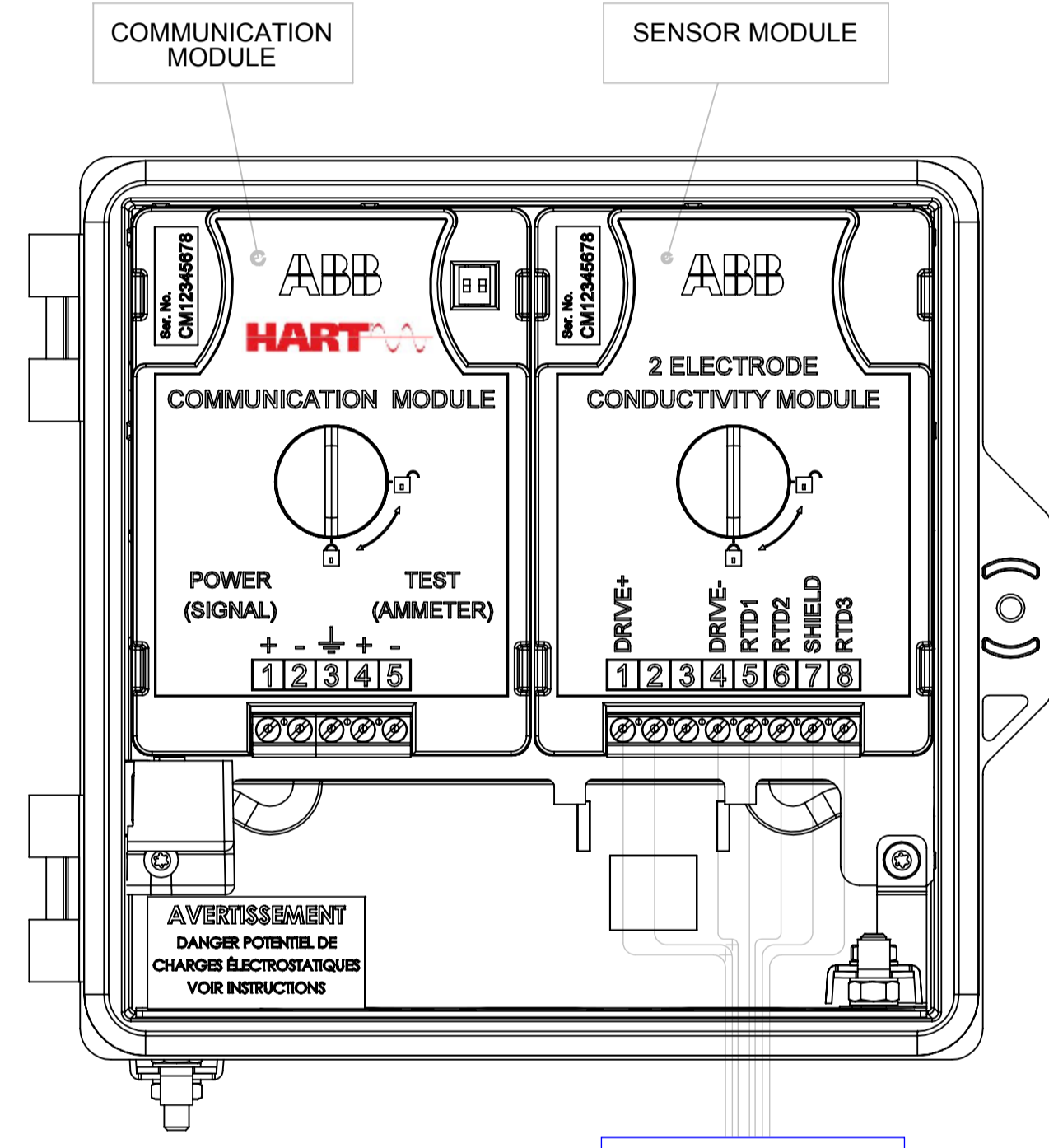
Fieldbus
 INPUT PARAMETERS:
 TERMINALS 1 & 2
 $V_{max}(U_i) = 24V$
 $I_{max}(I_i) = 250mA$
 $P_i = 1.2W$
 $C_i = 1.1nF$
 $L_i = 0mH$

Profibus
 INPUT PARAMETERS:
 TERMINALS 1 & 2
 $V_{max}(U_i) = 24V$
 $I_{max}(I_i) = 250mA$
 $P_i = 1.2W$
 $C_i = 1.1nF$
 $L_i = 0mH$

" 2 WIRE HOOKUP"

ASSOCIATED APPARATUS

< 250 V



AWT210 FOR CONNECTION TO:

- ABB pH/ORP/ISE SENSOR TYPES
 TB551; TBX551; TB556; TB557; TBX557; TB561;
 TBX561; TB564; TBX564; TBX567; AP10; AP20;
 2867; AP30; 765; 766; 500 PRO; 500 PRO HT

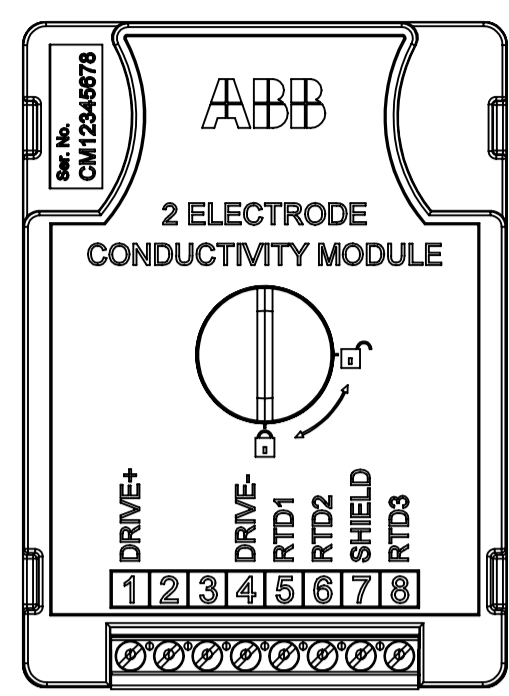
- OTHER SENSORS CAN BE USED BUT MUST COMPLY WITH ENTITY PARAMETERS.(CONNECTED PER MANUFACTURERS INSTRUCTIONS)
- SIMPLE APPARATUS; PASSIVE DEVICE THAT DOES NOT CONTAIN ENERGY STORING COMPONENTS AND DOES NOT GENERATE MORE THAN 1.5V, 100mA, OR 25mW
- I.S. DEVICES MUST BE FM APPROVED WITH ENTITY PARAMETERS (CONNECTED PER MANUFACTURERS INSTRUCTIONS)

AWT210 FOR CONNECTION TO:

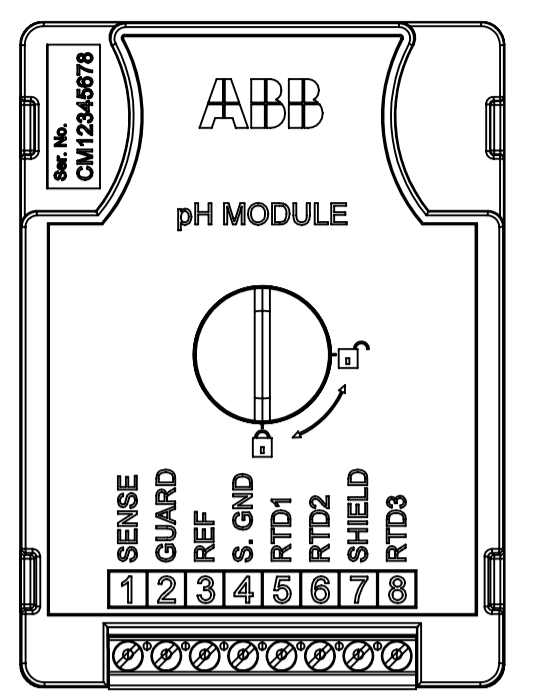
- ABB CONDUCTIVITY SENSORS, TYPES;
 2085; AC2; TB254; TB26;TB264; TB27; TB404; TB451;TB456;TB457
 TB461; TB464; TB465; TB468; TB47
- OTHER SENSORS CAN BE USED BUT MUST COMPLY WITH ENTITY PARAMETERS.(CONNECTED PER MANUFACTURERS INSTRUCTIONS)

CERTIFIED PRODUCT
 NO MODIFICATION IS PERMITTED WITHOUT REFERENCE TO THE APPROVAL AUTHORITY

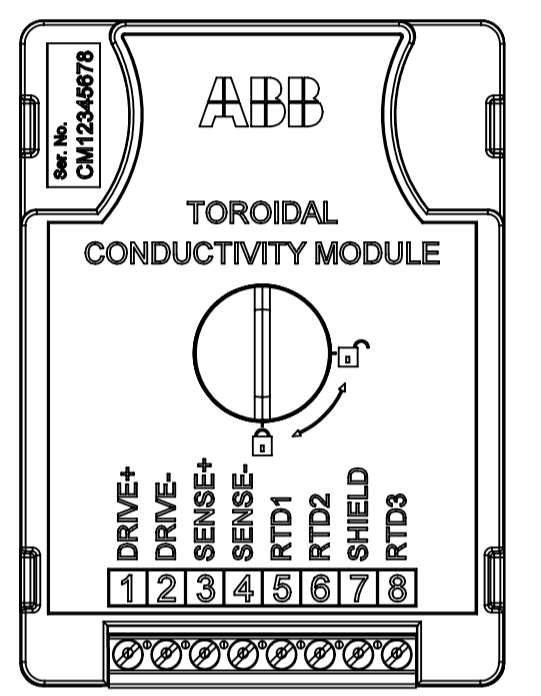
THIS DRAWING WAS CREATED ON A COMPUTER AIDED DESIGN (CAD) SYSTEM TO ENSURE THE INTEGRITY OF THE DATA BASE ALL CHANGES/REVISIONS MUST BE MADE ON THE CAD SYSTEM.



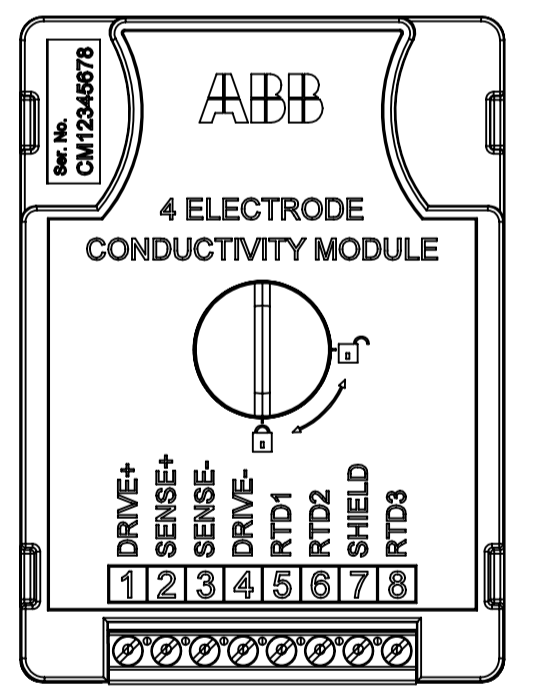
OUTPUT PARAMETERS - 2 ELECTRODE
 $V_{oc}(U_o) = 11.8V$
 $I_{sc}(I_o) = 11.8mA$;
 $P_o = 36mW$;
 $C_a(C_o) = 1.5uF$;
 $L_a = 1H$



OUTPUT PARAMETERS - pH
 $V_{oc}(U_o) = 11.8V$
 $I_{sc}(I_o) = 11.8mA$;
 $P_o = 36mW$;
 $C_a(C_o) = 1.5uF$;
 $L_a = 1H$



OUTPUT PARAMETERS - TOROIDAL
 $V_{oc}(U_o) = 11.8V$
 $I_{sc}(I_o) = 11.8mA$;
 $P_o = 36mW$;
 $C_a(C_o) = 1.5uF$;
 $L_a = 1H$



OUTPUT PARAMETERS - 4 ELECTRODE
 $V_{oc}(U_o) = 11.8V$
 $I_{sc}(I_o) = 11.8mA$;
 $P_o = 36mW$;
 $C_a(C_o) = 1.5uF$;
 $L_a = 1H$

MATERIAL	SCALE	J	500 PRO & 500 PRO HT added	CEH	08/02/19	F	SENSOR MODULE OPTIONS ADDED	CEH	30-05-18
FINISH	DIMS. IN mm	H	Connection notes changed to include sensor types	CEH	21/01/19	E	Input Parameters Imax was 160mA Pi was 1.0W	CEH	06-07-17
CONFIDENTIAL	TOLERANCES	G	Output parameters added for each sensor module	CEH	12/11/18	K	FF & PA Module options added with FISCO parameters	CEH	26/03/19
ABB Ltd 2018	LINEAR DIMS X = ± 0.5 X.X = ± 0.1	AMENDMENTS		MOD No	DRAWN	CHKD	D & D	M.E.D.	DATE
ABB Ltd St Neots, Cambs, PE19 8EU, UK	ANGULAR DIMS ±0.5° UNLESS OTHERWISE STATED	TITLE		AWT210 FM INTRINSIC SAFETY CONTROL DRAWING			DRAWING No.	AWT200030	