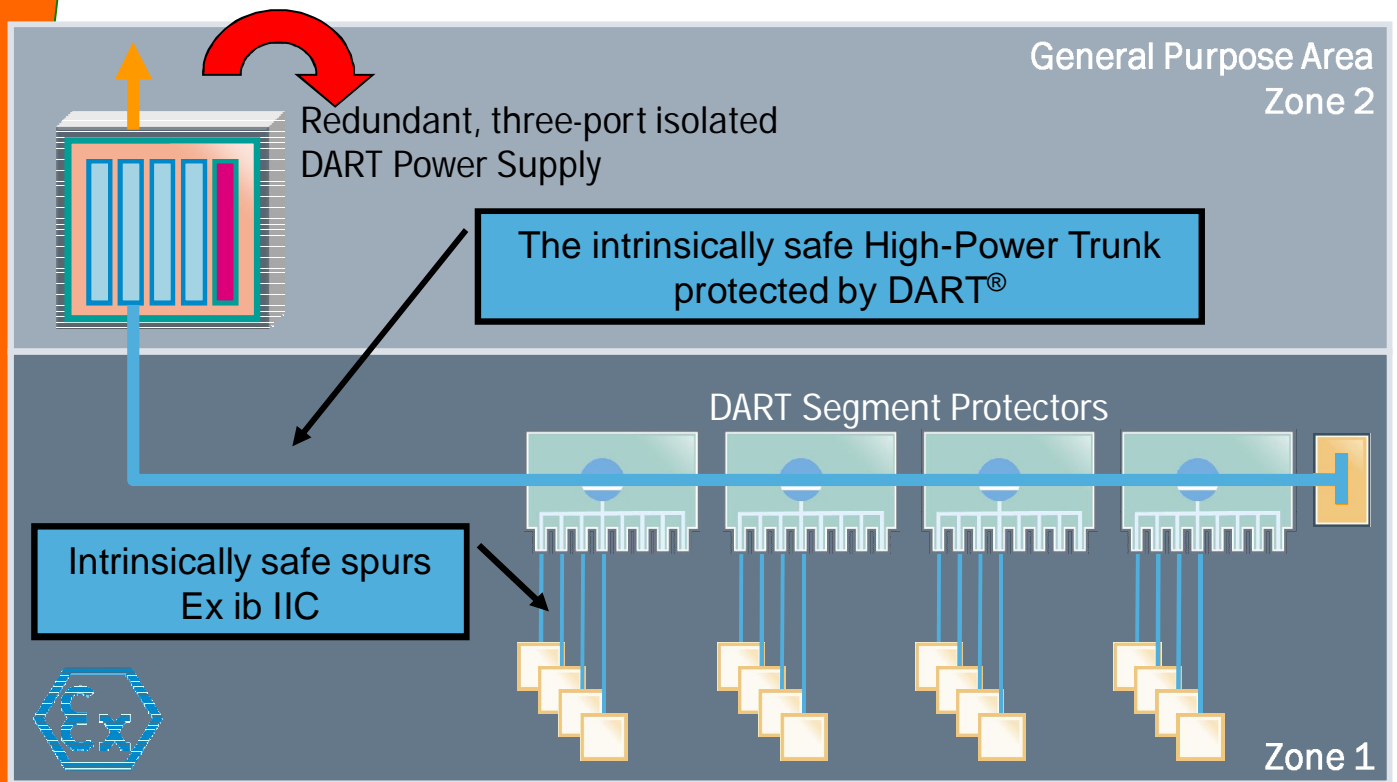
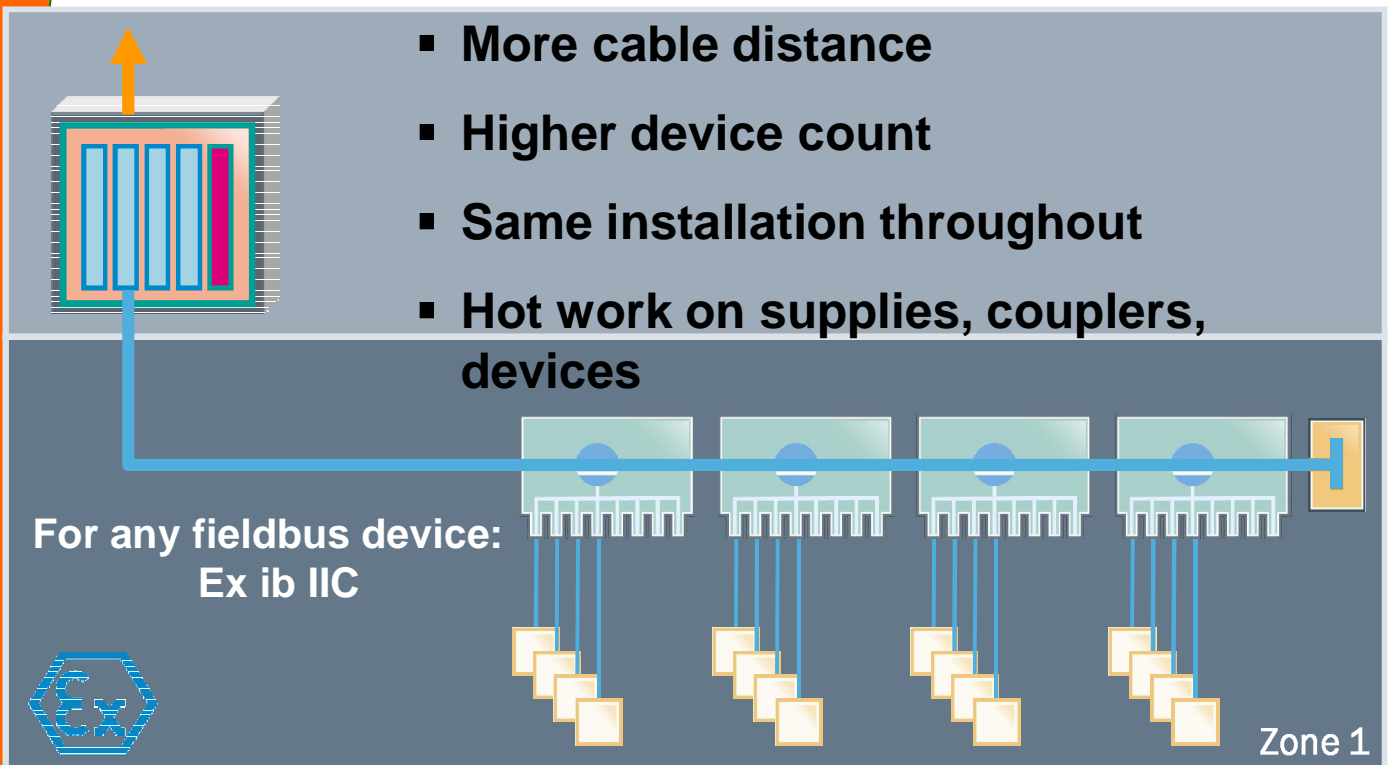


DART: Intrinsically safe High-Power Trunk



DART: Intrinsically safe High-Power Trunk



DART Fieldbus Segment



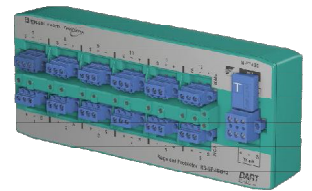
■ DART protects the trunk

- DART Power Hub:
- Extinguishes a spark before it becomes incendive
- Live disconnect permitted without hot work permit
- Power redundancy with load sharing
- With Advanced physical layer diagnostics



■ Intrinsically Safe Outputs

- DART Segment Protector:
- For any existing standard field instrument
- Short-circuit protection



■ => Intrinsically Safe Ex ib IIC

DART Fieldbus Power



- Redundant Power Supply with load sharing
- With Advanced Diagnostic Module
- DART-protected trunk connection
- Works as I.S. Barrier with three-way galvanic isolation of DCS, bulk power and fieldbus segment

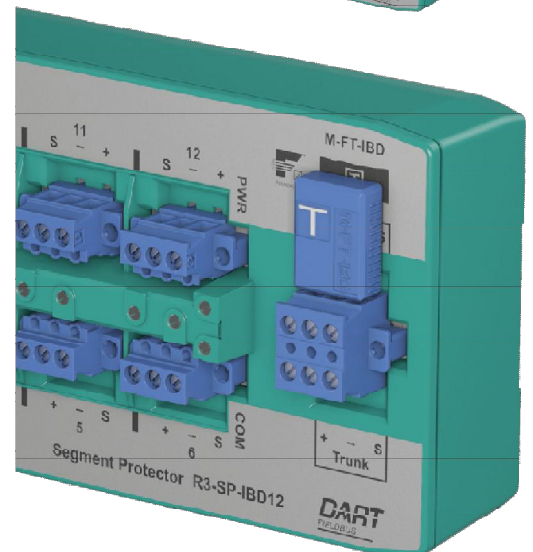
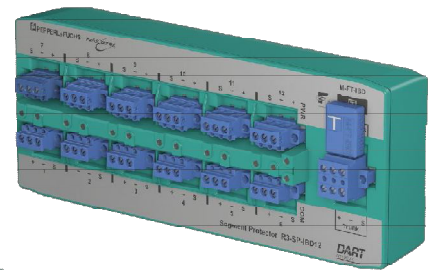


Technical Data	DART Power Hub
Trunk Output	
Rated power	22 V / 360 mA
DCS supply	10.2 V / 40 mA
Cable distance, typ./max.	550 m / 1000 m

DART Segment Protector



- Connections for field instrument
- Outputs intrinsically safe Ex ib IIC
- With short-circuit protection
- Live disconnect on trunk and spurs



Technical Data	DART Segment Protector
Spur Output	min 10.5 V @ 34 mA
Rated power	24 V / 250 mA
IS Power rating	120 m
Spur length up to	

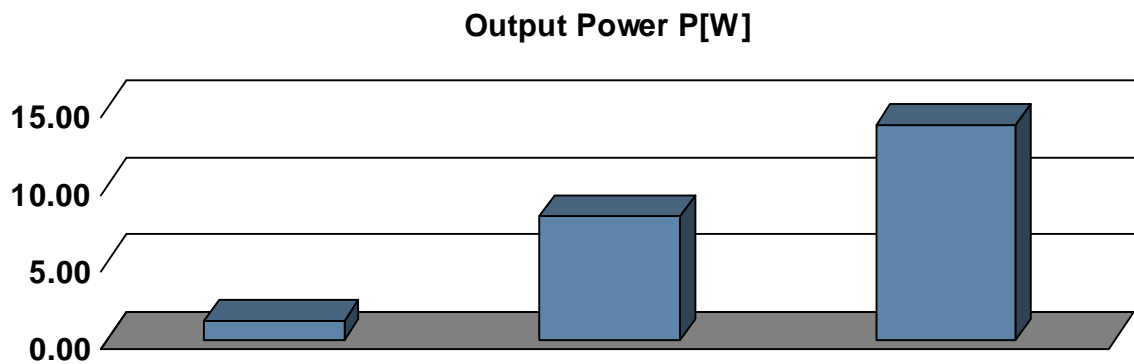
Technical Data for DART Fieldbus



Technical Data	Value
Trunk output power	typ. 22 V / 360 mA
Spur output power	Min 10.5 @ 34 mA
Impedance – Cable Type ‘A’	100 Ω
Trunk cable length, typ. / max.	550 m /1000 m
Overall cable length, max. (as per IEC 61158-2)	1900 m
Spur cable length, max. (as per IEC 61158-2)	120 m

**The safest fieldbus infrastructure ever.
Certified ATEX and IECEx acc. to IEC 60079-11**

Explosion protection compared for fieldbus



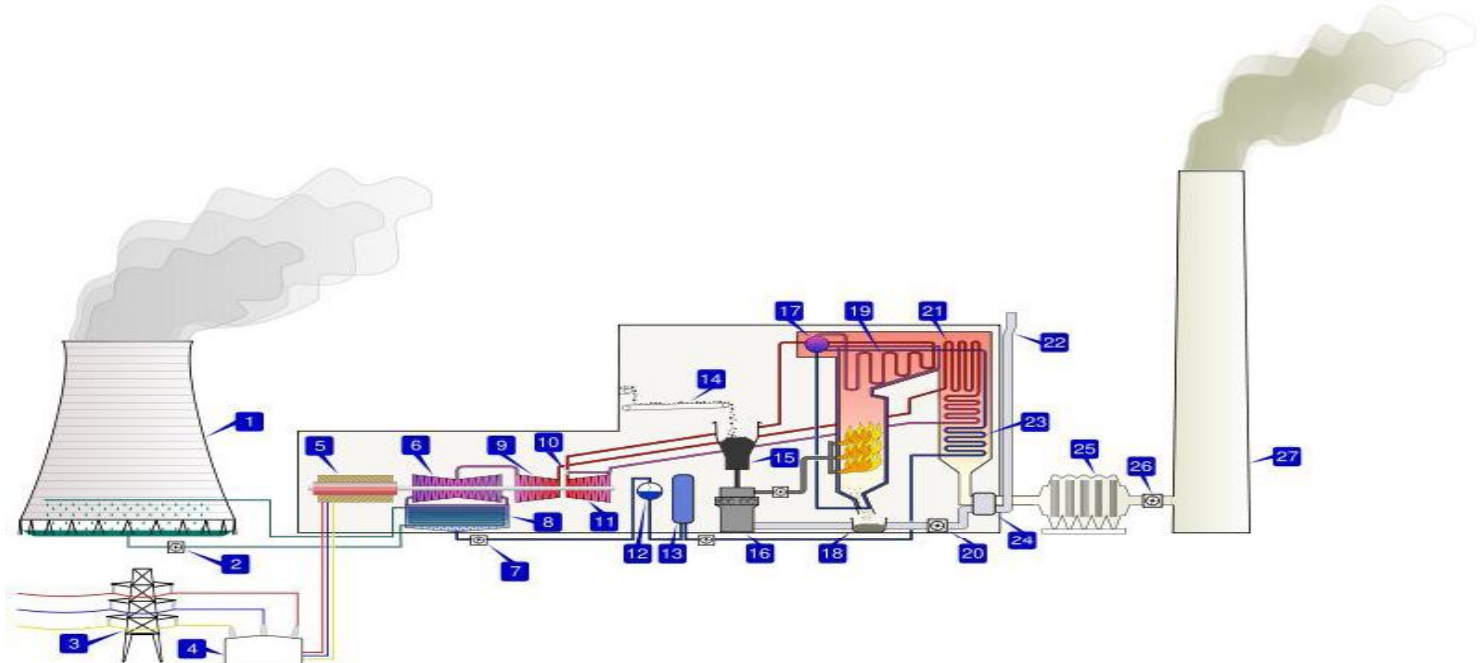
Trunk:	FISCO	DART	High-Power Trunk
Hazardous Area	Zone 0...1/Div. 1	Zone 1	Zone 0...1/Div. 2
Gas Group	IIC	IIC	IIC
Output Values	12.6 V / 100 mA	22.4 V / 360 mA	28 V / 500 mA
Cable Distance	Medium	Long	Very Long
Device Count	Low	Very High	Very High



Application in Power Industry



TYPICAL COAL FIRED THERMAL POWER PLANT



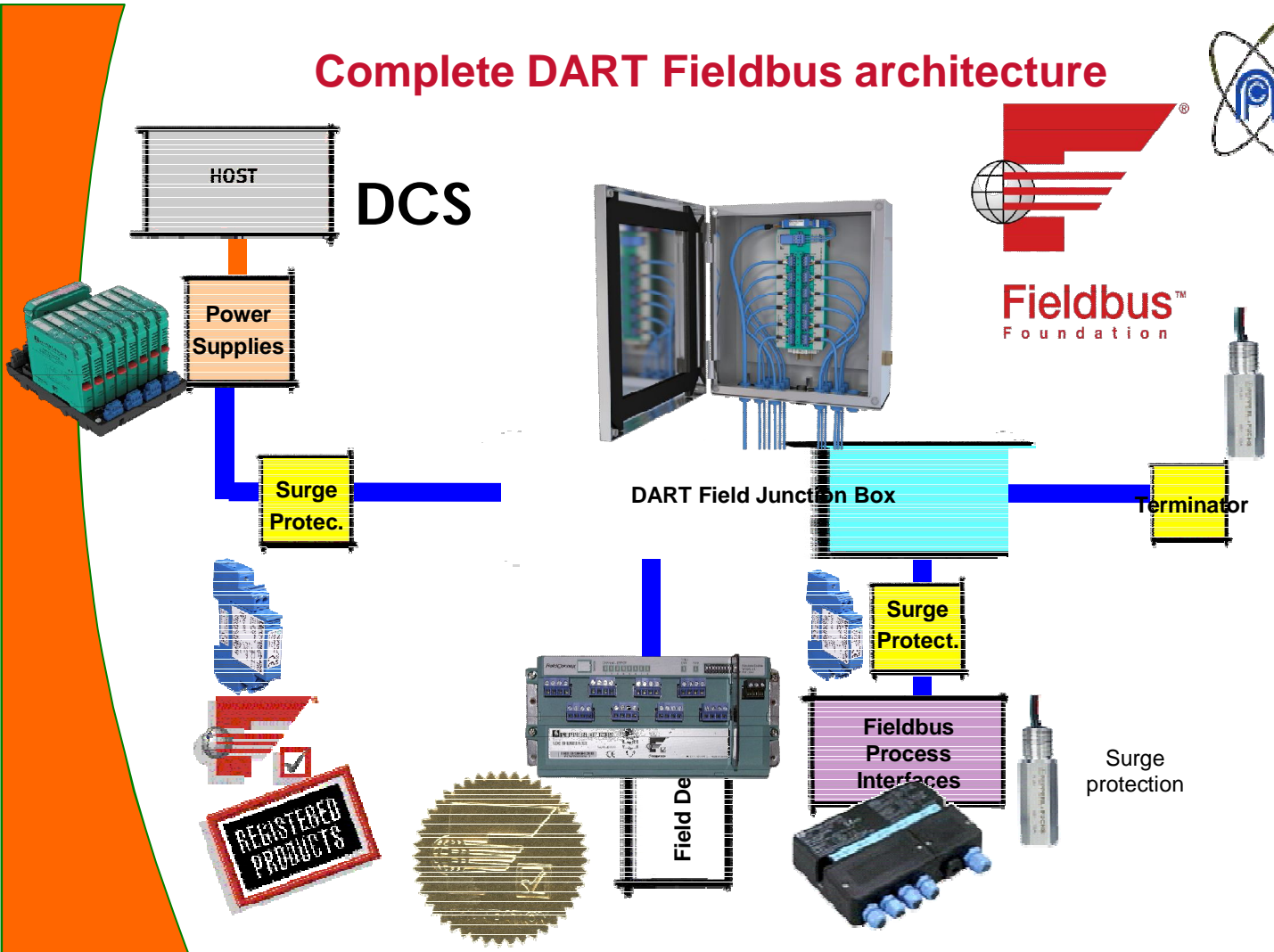
- | | | |
|----------------------------------|---------------------------|-------------------------|
| 1. Cooling tower | 10. Steam governor valve | 19. Superheater |
| 2. Cooling water pump | 11. High pressure turbine | 20. Forced draught fan |
| 3. Transmission line (3-phase) | 12. Deaerator | 21. Reheater |
| 4. Unit transformer (3-phase) | 13. Feed heater | 22. Air intake |
| 5. Electric generator (3-phase) | 14. Coal conveyor | 23. Economiser |
| 6. Low pressure turbine | 15. Coal hopper | 24. Air preheater |
| 7. Boiler feed pump | 16. Pulverised fuel mill | 25. Precipitator |
| 8. Condenser | 17. Boiler drum | 26. Induced draught fan |
| 9. Intermediate pressure turbine | 18. Ash hopper | 27. Chimney Stack |

Typical Process Inputs at Power Plants



- Multiple temperature inputs
- Multiple DI and DO
- Pressure
- Flow
- Etc

Complete DART Fieldbus architecture

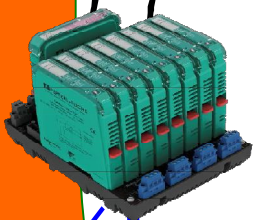
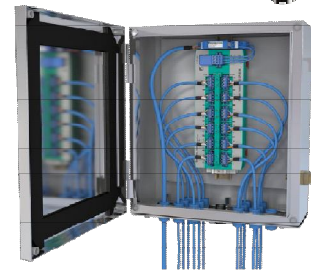


Handling Multiple Temperature Inputs at Power Plants



DCS

Upto 40 temperature inputs in a segment



DART – Intrinsicly Safe

DART Segment Protectors

Zone 1/ Zone2



22.5V
360mA

8 temperature inputs,
T/C, RTD, mV

