

	Generator Protectin Unit (GPU)	Generator Paralleling Controller (GPC)	Paralleling and Protection Unit (PPU)
Aux.: 24V DC	✓	✓	✓
Meas. voltage: 100-690V	✓	✓	✓
Current transformer: -1A or -5A	✓	✓	✓
Frequency: 30-70Hz	✓	✓	✓
Overcurrent protection	✓	✓	✓
Reverse power protection	✓	✓	✓
Overload protection	(C)	-	(C)
Unbalanced current protection	(C)	-	(C)
Reactive power (imp./exp.) protection	(C)	-	(C)
Asymmetry protection (U)	(C)	-	(C)
Loss of exitation protection	(C)	-	(C)
Busbar over/under voltage protection	(A or B)	(A or B)	(A or B)
Busbar over/under frequency protection	(A or B)	(A or B)	(A or B)
Df/dt (ROCOF) protection	(A)	(A)	(A)
Vector shift protection	(A)	(A)	(A)
Synchronisation/load sharing	-	✓	✓
AVR (PF) control	-	(D)	(D)
Analogue controller outputs (AVR/SG)	-	(E)	(E)
2 analogue transducer outputs	(F ₁)	(F ₁)	(F ₁)
4 analogue transducer outputs	(F ₂)	(F ₂)	(F ₂)
Start/stop relay outputs	(G)	✓	(G)
Remote mountable display	✓	✓	✓
Display cable (3m or 6m)	(J)	(J)	(J)
IP54 protection of display	(L)	(L)	(L)
Available without display	✓	✓	✓
Can-bus communication	(H)	(H)	(H)
Approved by marine classification societies	✓	-	✓
Base mounting	✓	✓	✓
DIN-rail mounting	✓	✓	✓

MDR-1



Main function:	Multi Differential Relay for protection against short circuits and leakage currents of the generator.		
Aux.: 24V DC	✓		
Meas. voltage: 100/110...450V AC	✓		
Meas. current: -1A or -5A	✓		
Meas. frequency: 30...70Hz:	✓		
Power transducer	-		
Voltage transducer	-		
Current transducer	-		
Cos-Phi transducer	-		
Reactive power transducer	-		
Apparent power transducer	-		
Freq. transducer	-		
Energy transducer	-		
Over-/undervoltage relay	-		
Voltage assymetry relay	-		
Over-/under frequency relay	-		
Vector jump relay	-		
Df/dt relay	-		
Overcurrent relay	-		
Overload relay	-		
Reverse power relay	-		
Loss of excitation relay	-		
Unbalanced load relay	-		
Load sharing unit	-		
Synchroniser	-		
Electronic potentiometer	-		
Synhchroniser to mains breaker	-		
Engine start/stop and supervision	-		
Power management	-		
Differential relay	✓		
Approved by classification societies	-		