

Square D General Purpose Relays

Class 8501K universal relays

Catalog
2014



by Schneider Electric

■ Specifications	3
■ References	5
■ Dimensions	7
■ Wiring diagrams	9

General Specifications

Conforming to standards			IEC/EN 61810-1, UL 508, CSA C22-2 n° 14
Product certifications			cULus File E3190 CCN NLDX, NLDX7; cURus File E3190 CCN NLDX2, NLDX8; CSA; CE; RoHS compliant
Ambient air temperature around the device	Storage	°C (F)	- 40 to + 85 (-40 to +185)
	Operation	°C (F)	- 40 to + 55 (-40 to +131)
Vibration resistance conforming to IEC/EN 60068-2-6	In operation		3 gn (35 to 150 Hz) and ± 1 mm (10 to 35 Hz); 5 cycles
	Not operating		4 gn (35 to 150 Hz) and ± 1 mm (10 to 35 Hz); 5 cycles
Degree of protection	Conforming to IEC/EN 60529		IP 40 (housing only)
Shock resistance conforming to IEC/EN 60068-2-27	Opening		10 gn (11 ms)
	Closing		10 gn (11 ms)
Protection category			RT I
Mounting position			Any

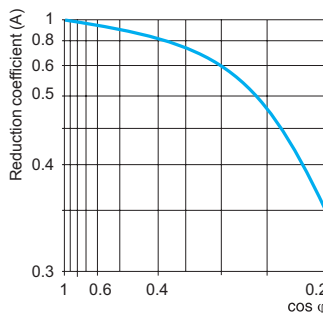
Insulation Specifications

Rated insulation voltage (Ui)	Conforming to IEC/EN 60947	V	250 (IEC), 300 (UL, CSA)
Rated impulse withstand voltage (Uimp)		kV	4 (1.2/50 µs)
Dielectric strength (rms voltage)	Between coil and contact	Vac	2500
	Between poles	Vac	2000
	Between contacts	Vac	1500

Contact Specifications

Relay type			8501KFR12●●●, 8501KFRD12●●●, 8501KPR12●●●, 8501KPRD12●●●, 8501KUR12●●●, 8501KURD12●●●	8501KFR13●●●, 8501KFRD13●●●, 8501KPR13●●●, 8501KPRD13●●●, 8501KUR13●●●, 8501KURD13●●●
Number and type of contacts			2 C/O	3 C/O
Contact materials			AgNi	
Conventional thermal current (Ith)	For ambient temperature ≤ 55°C	A	10	
Rated operational current	Conforming to IEC in utilization categories AC-1 and DC-1	NO	A	10 at 250 Vac 10 at 28 Vdc
		NC	A	5 at 250 Vac 5 at 28 Vdc
	Conforming to UL	Resistive	A	10 at 277 Vac (200k cycles) 10 at 30 Vdc (200k cycles)
		Motor	HP	1/3 at 120 Vac (6k cycles) 1 at 277 Vac (6k cycles)
		Pilot Duty		B300 (6k cycles)
Minimum switching requirement			mA	10 @ 17 Vdc; MCTF ≥ 10 million
Maximum switching voltage			V	250 V (IEC) / 300 V (UL, CSA)
Switching capacity	Maximum	Vac	VA	2500 VA (IEC), 2770 VA (UL)
		Vdc	W	280 W (IEC) / 300 W (UL)
	Minimum		mW	170
Maximum operating rate In operating cycles/hour	No-load			18000
	Under load			1200
Utilization coefficient				20%
Mechanical durability	Cycles			5,000,000
Electrical durability Operating cycles	Resistive load			100,000 (unless otherwise specified)
	Inductive load			See curve below

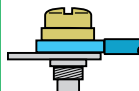
Electrical durability of contacts Resistive load Vac
Reduction coefficient for inductive load Vac
(depending on power factor cos φ)



Durability (inductive load) = durability (resistive load) x reduction coefficient.

Square D General Purpose Relays

Class 8501K universal relays

Coil Specifications										
Average consumption			VA	3						
			W	1.4						
Drop-out voltage threshold				≥ 0.15 Uc (at minimum operating temperature)						
				≥ 0.1 Uc (at minimum operating temperature)						
Response time	Operate time	ms	20 max (at 100% coil voltage)							
	Release time	ms	20 max							
Control circuit voltage Uc			V	12	24	48	110	120	240	
Relay control voltage codes				V51	V53	V56	V60	—	—	
DC supply	Average resistance at 20 °C ± 15%	Ω	120	470	1800	7300	—	—		
	Operating voltage limits	Min.	Vac	9.6	19.2	38.4	88	—	—	
		Max.	Vac	13.2	26.4	52.8	121.0	—	—	
Relay control voltage codes				—	V14	—	—	V20	V24	
AC supply	Average resistance at 20 °C ± 15%	Ω	—	72	—	—	—	1700	6800	
	Operating voltage limits	Min.	Vac	—	19.2	—	—	96	192	
		Max.	Vac	—	26.4	—	—	132	264	
Socket Specifications ⁽¹⁾										
Socket type			8501NR51		8501NR61		8501NR52		8501NR62	8501NR82
Relay types used			8501KPR12●●●, 8501KPDR12●●●		8501KPR13●●●, 8501KPDR13●●●		8501KPR12●●●, 8501KPDR12●●●		8501KPR13●●●, 8501KPDR13●●●	8501KUR13●●●, 8501KUDR13●●●
Contact terminal arrangement				Mixed			Separate			
Wire connection method				Screw clamp terminal						
Product certifications				cURus File E66924 CNN SWIV2, SWIV8; CSA; CE; RoHS Compliant						
Conforming to standards				IEC 61984, UL 508, CSA 22.2 No. 14						
Electrical Specifications										
Conventional thermal current (Ith)			A	15 at 300 Vac (UL) 5 at 600 Vac (UL)			16 at 300 Vac (UL) 5 at 600 Vac (UL)		15 at 300 Vac (UL)	
Insulation Specifications										
Between adjacent output contacts			Vrms	2000			2500		2000	
Between input and output contacts			Vrms	2000			2500		2000	
Between contacts and DIN rail			Vrms	2000			2500		2000	
General Specifications										
Ambient air temperature around the device	Storage	°C (F)	- 40 to + 85 (-40 to +185)							
	Operation	°C (F)	- 40 to + 55 (-40 to +131)							
Degree of protection	Conforming to IEC/EN 60529		IP 20							
Cabling	Solid cable without cable end	1 conductor	0.5 to 2.5 mm² - AWG 20 to AWG 14							
		2 conductors	0.5 to 1.5 mm² - AWG 20 to AWG 16							
	Flexible cable with cable end	1 conductor	0.25 to 2.5 mm² - AWG 22 to AWG 14							
		2 conductors	0.25 to 1 mm² - AWG 22 to AWG 17							
Maximum tightening torque / Screw size			Lb-ft (N•m)	0.7 (1) / M3.5 screw						
Mounting				On 35 mm DIN rail / on panel						
Mounting on DIN rail				By red plastic clip						
Terminal referencing				IEC, NEMA						
Bus jumper				None						
Compatible hold down clip				None			8501NH52		8501NH82	
Compatible restraining strap				8501NH7			8501NH7		8501NH7	
Wire connection method			Screw clamp terminals							

(1) Sockets are rated as high as 600 V.

Square D General Purpose Relays

Class 8501K universal relays



8501KPDR12V60



8501KPR13P14V20



8501KUDR12P14V60

References					
Pins	Control circuit voltage	Number and type of contacts - Thermal current (Ith)			
		2 C/O - 10 A		3 C/O - 10 A	
		Unit reference	Weight kg/lb	Unit reference	Weight kg/lb
Universal relays with standard clear cover (sold in lots of 1)					
Type KP	12 Vdc	8501KPDR12V51	0.086/0.190	8501KPDR13V51	0.086/0.190
Cylindrical terminals	24 Vdc	8501KPDR12V53	0.086/0.190	8501KPDR13V53	0.086/0.190
Socket mount	48 Vdc	8501KPDR12V56	0.086/0.190	8501KPDR13V56	0.086/0.190
	110 Vdc	8501KPDR12V60	0.086/0.190	8501KPDR13V60	0.086/0.190
	24 Vac	8501KPR12V14	0.086/0.190	8501KPR13V14	0.086/0.190
	120 Vac	8501KPR12V20	0.086/0.190	8501KPR13V20	0.086/0.190
	240 Vac	8501KPR12V24	0.086/0.190	8501KPR13V24	0.086/0.190
Type KU	12 Vdc	8501KUDR12V51	0.086/0.190	8501KUDR13V51	0.086/0.190
Flat (Faston type) terminals	24 Vdc	8501KUDR12V53	0.086/0.190	8501KUDR13V53	0.086/0.190
Socket mount	48 Vdc	8501KUDR12V56	0.086/0.190	8501KUDR13V56	0.086/0.190
	110 Vdc	8501KUDR12V60	0.086/0.190	8501KUDR13V60	0.086/0.190
	24 Vac	8501KUR12V14	0.086/0.190	8501KUR13V14	0.086/0.190
	120 Vac	8501KUR12V20	0.086/0.190	8501KUR13V20	0.086/0.190
	240 Vac	8501KUR12V24	0.086/0.190	8501KUR13V24	0.086/0.190
Universal relays with flange mount cover (sold in lots of 1)					
Type KF	12 Vdc	8501KFDR12V51	0.086/0.190	8501KFDR13V51	0.086/0.190
Flat (Faston type) terminals	24 Vdc	8501KFDR12V53	0.086/0.190	8501KFDR13V53	0.086/0.190
Flange mount	48 Vdc	8501KFDR12V56	0.086/0.190	8501KFDR13V56	0.086/0.190
	110 Vdc	8501KFDR12V60	0.086/0.190	8501KFDR13V60	0.086/0.190
	24 Vac	8501KFR12V14	0.086/0.190	8501KFR13V14	0.086/0.190
	120 Vac	8501KFR12V20	0.086/0.190	8501KFR13V20	0.086/0.190
	240 Vac	8501KFR12V24	0.086/0.190	8501KFR13V24	0.086/0.190
Universal relays with standard clear cover and LED (sold in lots of 1)					
Type KP	12 Vdc	8501KPDR12P14V51	0.086/0.190	8501KPDR13P14V51	0.086/0.190
Cylindrical terminals	24 Vdc	8501KPDR12P14V53	0.086/0.190	8501KPDR13P14V53	0.086/0.190
	48 Vdc	8501KPDR12P14V56	0.086/0.190	8501KPDR13P14V56	0.086/0.190
	110 Vdc	8501KPDR12P14V60	0.086/0.190	8501KPDR13P14V60	0.086/0.190
	24 Vac	8501KPR12P14V14	0.086/0.190	8501KPR13P14V14	0.086/0.190
	120 Vac	8501KPR12P14V20	0.086/0.190	8501KPR13P14V20	0.086/0.190
	240 Vac	8501KPR12P14V24	0.086/0.190	8501KPR13P14V24	0.086/0.190
Type KU	12 Vdc	8501KUDR12P14V51	0.086/0.190	8501KUDR13P14V51	0.086/0.190
Flat (Faston type) terminals	24 Vdc	8501KUDR12P14V53	0.086/0.190	8501KUDR13P14V53	0.086/0.190
	48 Vdc	8501KUDR12P14V56	0.086/0.190	8501KUDR13P14V56	0.086/0.190
	110 Vdc	8501KUDR12P14V60	0.086/0.190	8501KUDR13P14V60	0.086/0.190
	24 Vac	8501KUR12P14V14	0.086/0.190	8501KUR13P14V14	0.086/0.190
	120 Vac	8501KUR12P14V20	0.086/0.190	8501KUR13P14V20	0.086/0.190
	240 Vac	8501KUR12P14V24	0.086/0.190	8501KUR13P14V24	0.086/0.190



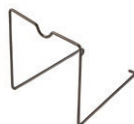
8501NR62 +
Relay 8501KPR13P14V20



8501NR82 +
Relay 8501KUDR12P14V60



8501NH7



8501NH52



8501NH82

References (continued)

Sockets

Contact terminal arrangement	Connection	Relay type	Unit reference ⁽¹⁾	Sold in lots of	Weight kg /lb
Mixed	Screw connector	8501KPR12●●● 8501KPDR12●●●	8501NR51	1	0.054/0.119
		8501KPR12●●● 8501KPDR12●●●	8501NR51B	10	0.054/0.119
		8501KPR13●●● 8501KPDR13●●●	8501NR61	1	0.054/0.119
		8501KPR13●●● 8501KPDR13●●●	8501NR61B	10	0.054/0.119
		8501KPR12●●● 8501KPDR12●●●	8501NR52	1	0.054/0.119
		8501KPR12●●● 8501KPDR12●●●	8501NR52B	10	0.054/0.119
Separate	Screw connector	8501KPR13●●● 8501KPDR13●●●	8501NR62	1	0.054/0.119
		8501KPR13●●● 8501KPDR13●●●	8501NR62B	10	0.054/0.120
		8501KUR12●●● 8501KUDR12●●●	8501NR82	1	0.054/0.121
		8501KUR12●●● 8501KUDR12●●●	8501NR82B	10	0.054/0.122

(1) Please note that the "B" suffix only designates quantities of 10 and is not printed on the socket.

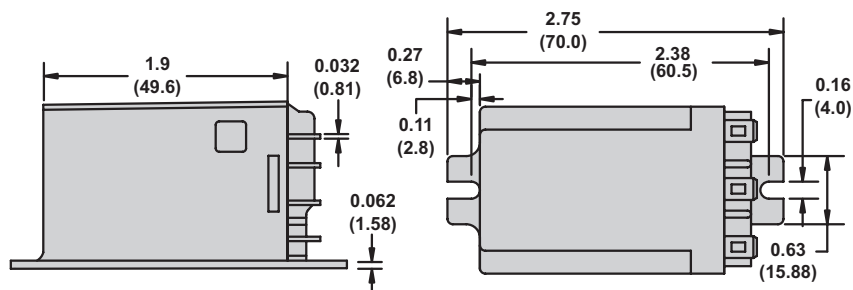
Accessories

Description	For use with	Unit reference	Sold in lots of	Weight kg /lb
Metal restraining strap	8501NR51 sockets	8501NH7	1	0.001/0.002
	8501NR52 sockets			
	8501NR62 sockets			
	8501NR82 sockets			
Metal hold-down clip	8501NR52 sockets 8501NR62 sockets	8501NH52	10	0.001/0.002
	8501NR82 sockets	8501NH82	10	0.001/0.002

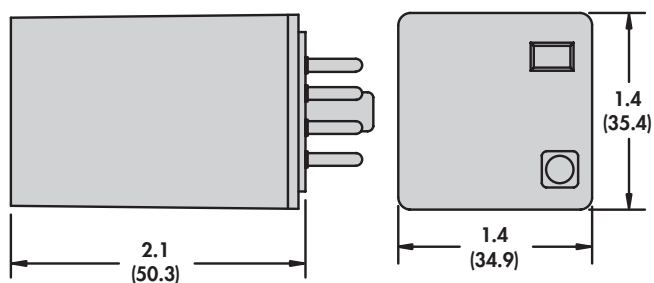
Dimensions: inches (mm)

Universal relays

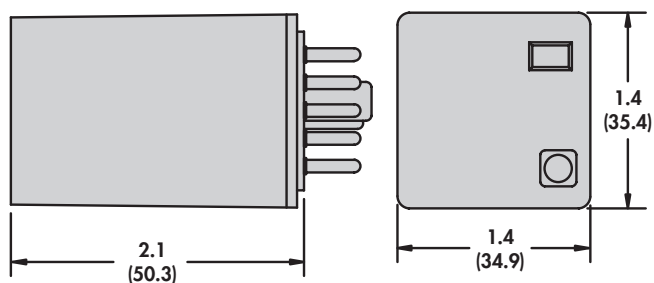
8501KF12... / 8501KF13...



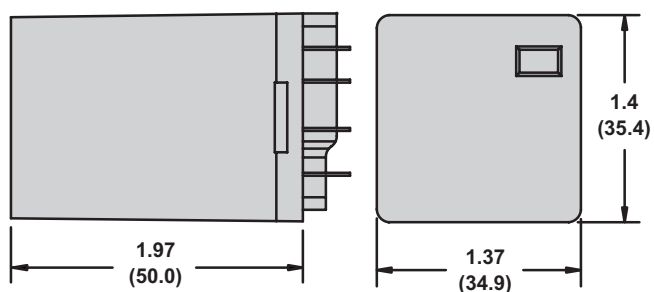
8501KP12...



8501KP13...



8501KU12... / 8501KU13...



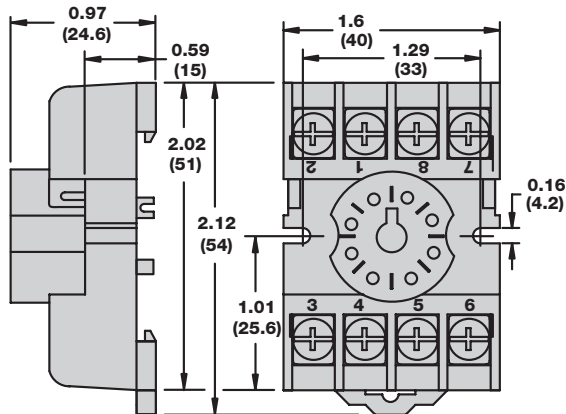
Square D General Purpose Relays

Class 8501K universal relays

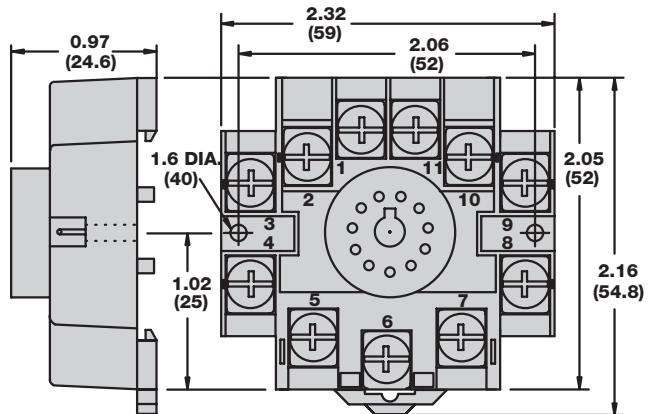
Dimensions: inches (mm) (continued)

Sockets

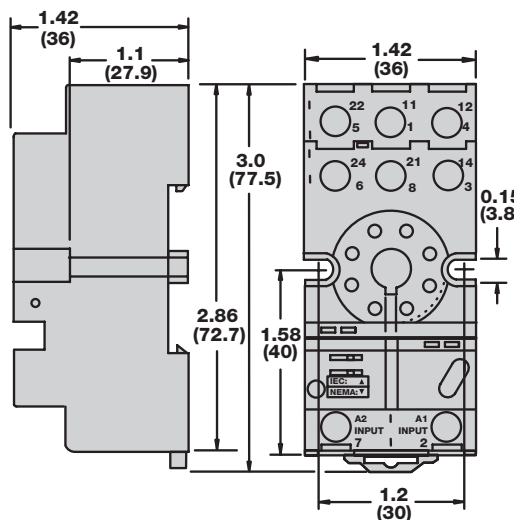
8501NR51



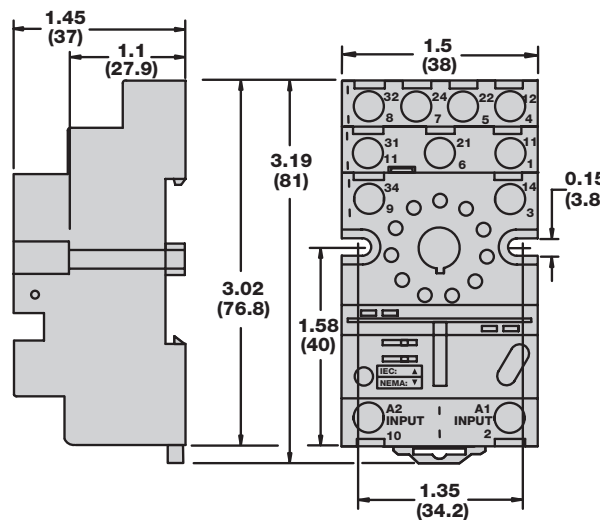
8501NR61



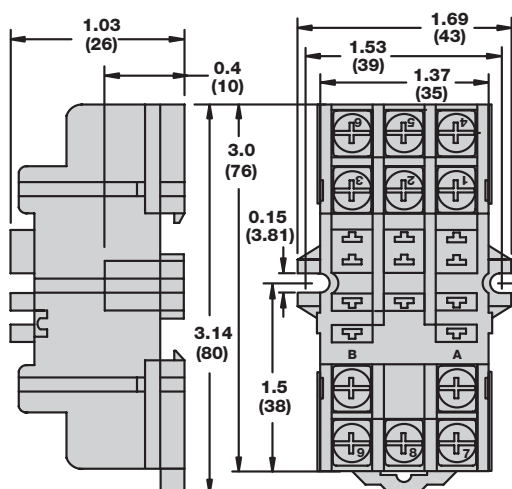
8501NR52



8501NR62

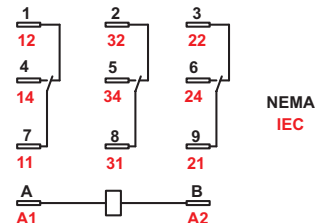
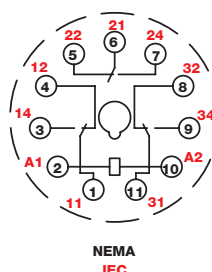
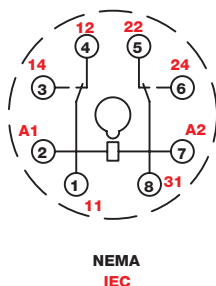
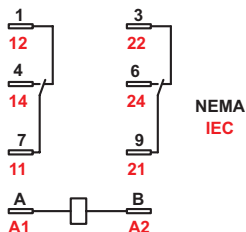


8501NR82



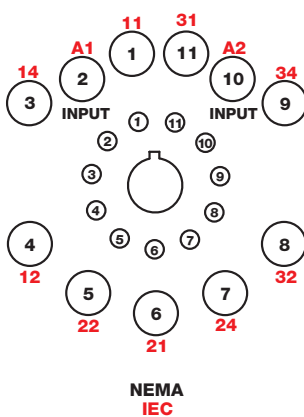
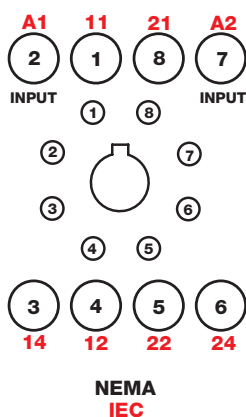
Universal relays

8501KF13●●● / 8501KU13●●●



8501NR51

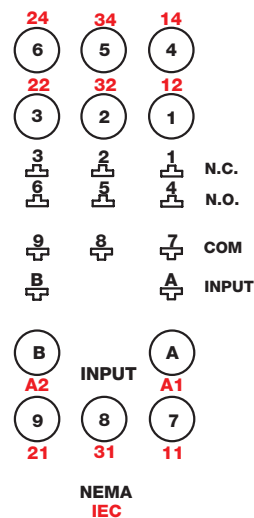
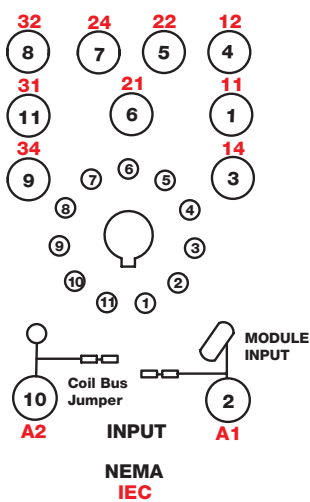
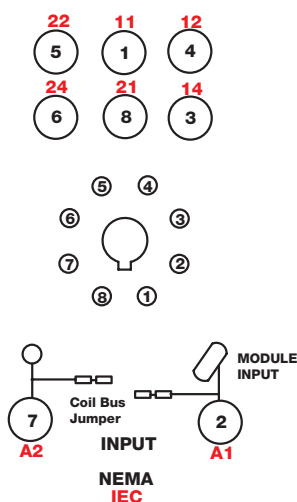
8501NR61



8501NR52

8501NR62

8501NR82



Schneider Electric USA, Inc.

8001 Knightdale Blvd.
Knightdale, NC 27545
Tel: 888-778-2733
www.schneider-electric.com

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

© 2014 Schneider Electric. All Rights Reserved.

Schneider Electric and Square D are trademarks owned by Schneider Electric Industries SAS or its affiliated companies. All other trademarks are the property of their respective owners.

8501CT1406, 09/2014

Replaces 8501CT0301R07/08, 08/2008